



# Welcome to

the 7<sup>th</sup> ASIA Annual Meeting Arthroplasty Society in Asia  
ASIA 2019  
November - Korea

联系我们:

邮箱: [secretariat@asiaarthroplasty.org](mailto:secretariat@asiaarthroplasty.org)

ASIA官方网站: <http://www.arthroplastyonline.asia>

Contact us:

Email: [secretariat@asiaarthroplasty.org](mailto:secretariat@asiaarthroplasty.org)

ASIA Official Website: <http://www.arthroplastyonline.asia>



# 6<sup>th</sup> ASIA

Annual Meeting  
Arthroplasty Society in Asia (ASIA 2018)  
第六届亚洲人工关节学会年会

<http://www.arthroplastyonline.asia>

November 8-10, 2018  
Shanghai, China

2018.11.8 -10  
中国·上海

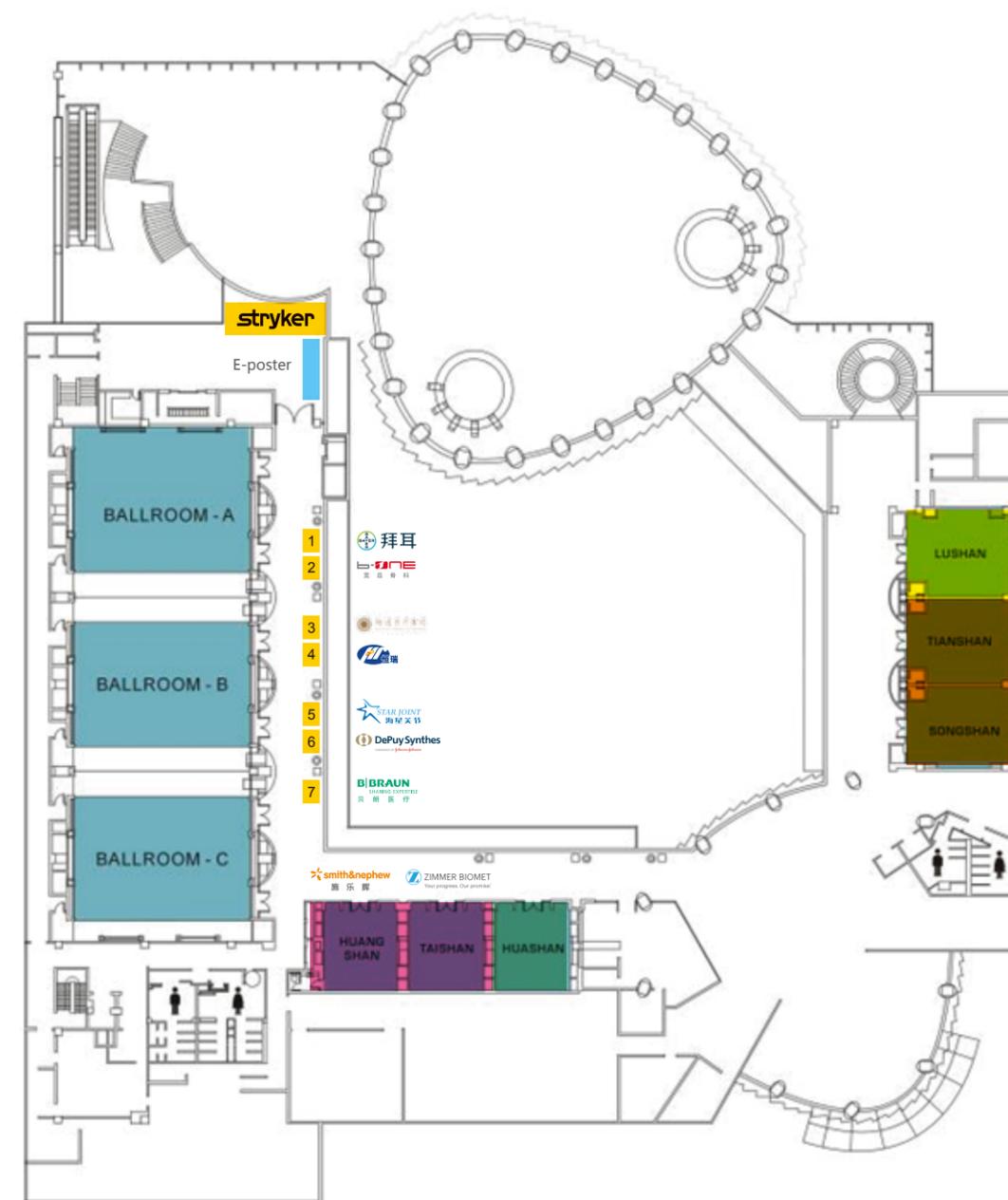
## Acknowledgments 致谢

The Arthroplasty Society in Asia gratefully acknowledges the following companies for their generous financial support to the 6th ASIA Annual Meeting Arthroplasty Society in Asia (ASIA 2018)

亚洲人工关节学会感谢以下企业对于第六届亚洲人工关节学会年会 (ASIA 2018) 的支持



## Floor Plan (Level 2) 场地规划图 (2层)



- Exhibition Area  
展厅
- VIP Lounge  
VIP休息室
- Slide Center  
试片室
- E-poster Area  
电子壁报

## Meeting Outline 日程一览表

Thursday, November 8 11月8日 (周四)	Lobby 大厅	ALL DAY	Registration Open 全天注册
Friday, November 9 11月9日 (周五)	Ballroom A 会场A	08:00-12:20	<b>Naton 纳通</b> Minimally invasive approach of THA 髋关节微创手术入路 Prosthesis selection of Minimally invasive THA 髋关节微创假体选择
		13:00-18:00	<b>Smith &amp; Nephew 施乐辉</b> The Journey to Journey II ASIA Pre-convention ASIA"重现自然"膝关节之旅
	Ballroom B 会场B	08:30-12:00	<b>DePuy Synthes 强生</b> The voice of attune Attune最强音
		12:30-17:30	<b>Stryker 史赛克</b> Mako Course Mako 课程
	Ballroom C 会场C	08:00-10:30	<b>Launching of ASIA consensus of periprosthetic joint infection</b> ASIA-PJI共识
		10:30-12:00	<b>ASIA-COEC Ask Experts</b> ASIA-COEC 问大师
		13:00-18:00	<b>Zimmer Biomet 捷迈邦美</b> Hip&Knee Course 髋膝关节专题
		18:30-21:00	<b>VIP Reception (invited only)</b> 欢迎晚宴
Saturday, November 10 11月10日 (周六)	Ballroom A+B 会场A+B	08:00-08:50	<b>Opening Ceremony</b> 开幕式
		08:50-11:15	<b>Guest Lecture</b> Chairman of Session: Guoqiang Zhang 张国强
	Ballroom A 会场A	12:00-13:30	<b>Satellite meeting &amp; Lunch</b> 卫星会&午餐  
		13:30-16:00	<b>Precise reconstruction in TKA</b> 全膝关节置换技术: 精确重建技术 Chairman of Session: Wei Chai 柴伟
		16:00-18:30	<b>Anatomical and Mechanical Features in Asia Population</b> 亚洲膝关节置换之关键技术 Chairman of Session: Jianbing Ma 马建兵
	Ballroom B 会场B	12:00-13:20	<b>Satellite meeting &amp; Lunch</b> 卫星会&午餐 
		13:20-16:00	<b>Precision Treatment for Adult DDH patients</b> 成人DDH精准治疗 Chairman of Session: Guoqiang Zhang 张国强
		16:00-18:30	<b>Precision Treatment for AVN Patients</b> 股骨头坏死精准治疗 Chairman of Session: Chuan He 何川
	Ballroom C 会场C	09:00-12:00	<b>Rehabilitation &amp; Perioperative Management</b> 康复及围手术期管理 Chairman of Session: Hui Zhao 赵辉
		12:00-13:30	<b>Satellite meeting &amp; Lunch</b> 卫星会&午餐  
13:30-16:00		<b>ASIA-AORECON Symposium</b> ASIA-AORECON 研讨会 Chairman of Session: Michael Huo	
16:00-18:30		<b>Solutions for Infected TJA</b> 关节置换感染解决方案 Chairman of Session: Xiaogang Zhang 张晓岗	

## Content 目录

Welcome Message 欢迎致辞	05
ASIA 2018 Organizing Committee ASIA 2018 组织架构	07
ASIA Committee ASIA 委员会	08
Faculty 讲师	09
General Information 基本信息	11
Pre-courses: Advanced Surgical Techniques 手术新技术课程展示	13
Annual Meeting Scientific Program 学术日程	21
Abstracts in Paper Session 投稿发言	39

## Welcome Message

Dear esteemed colleagues and friends,

On behalf of the organizing committee, we are honored and delighted to welcome you to the 6th Annual Meeting of Arthroplasty Society in Asia (ASIA2018) to take place from November 8-10 in Shanghai, China.

ASIA was founded in 2013 to establish a shared forum for discussing the field of arthroplasty across Asia. Our mission is to reinforce the collaborative network of arthroplasty surgeons practicing in Asia, to promote the development and exchange of joint surgery techniques and clinical research, and to enhance patient clinical outcomes. We are committed to building a leading joint academic association that will actualize meaningful developments in arthroplasty while also striving to provide superior patient services in the Asia-Pacific region.

Our first ever meeting was held in Beijing, followed by successful conferences in Seoul, Agra, Guangzhou, and Tokyo. The sixth annual ASIA meeting will be held in Shanghai with the motto "ASIA for Asia." Our planned scientific program includes a schedule of panel discussions and seminars led by experts in the field. We anticipate that the most important factors surrounding regional orthopedic issues in hip and knee arthroplasty will benefit from valuable dialogue from our distinguished participants who will join us from across the globe to take part in this conference.

The organizing committee has been doing our best to make ASIA2018 memorable and enjoyable for all.

On behalf of us, we sincerely look forward to seeing you in Shanghai.

Warmest regards,

**Yan Wang, MD**  
Founding Chairman, Arthroplasty Society in Asia  
Chinese PLA General Hospital(301 Hospital)

**Haishan Wu, M.D.**  
President, Arthroplasty Society in Asia  
President of the 6th Annual Meeting of ASIA  
Shanghai Ninth People's Hospital



**Yan Wang, M.D.**



**Haishan Wu, M.D.**

## 欢迎致辞

各位亲爱的同仁,朋友:

第六届亚洲人工关节学会年会(ASIA2018)将于11月8日-10日在中国上海举行,我们诚挚的邀请各位参与本次盛会!

亚洲人工关节学会(Arthroplasty Society in Asia,简称ASIA)成立于2013年,旨在亚太地区建立一个中立的关节外科专业交流学习平台。ASIA的使命是加强亚洲关节手术外科医生的网络和协作,实现促进联合手术技术和临床研究的发展和交流,以达到提升患者临床治疗效果的最终目标。我们致力于建立一个领先的联合学术协会,该协会能够在亚太地区切实推进关节外科的发展,更好的为患者服务。

从首府名韵的北京,欣欣向荣的首尔,蓬勃发展的阿格拉,繁花似锦的广州,到落英缤纷的东京,ASIA的五次会议都成功举办。第六次会议将继续以“ASIA for ASIA”为口号在上海举行。科学设置的会议内容、形式涵盖最新骨科知识,有小组讨论和大师们的研讨。针对髌关节和膝关节置换术等亚洲骨科热点问题将进行开放讨论。许多杰出的讲者嘉宾以及国际组织代表也将参加此次盛会受邀发言。

ASIA组委会会尽全力为大家带来一场愉快而难忘的学术盛宴。



**王岩**



**吴海山**

亚洲人工关节学会(ASIA)创始主席  
中国人民解放军总医院 (301医院)

ASIA2018大会主席  
亚洲人工关节学会(ASIA)主席  
上海交通大学医学院附属第九人民医院

## ASIA 2018 Organizing Committee

### ASIA 2018 组织架构

#### ASIA 2018 Honorary Chairmen

##### 名誉主席

Hirokazu Iida  
S.K.S.Marya  
Yan Wang 王岩  
Kunzheng Wang 王坤正  
Myung Chul Yoo

#### ASIA 2018 Consultants

##### 顾问

Daniel J. Berry  
Kerong Dai 戴尅戎  
Houshan Lyu 吕厚山  
William J Maloney  
Chitranjans S. Ranawat  
Thomas S. Thornhill

#### ASIA 2018 President

##### 大会主席

Haishan Wu 吴海山

#### ASIA 2018 Vice-Presidents

##### 大会副主席

Nicolaas C. Budhiparama  
Li Cao 曹力  
Cheng-Kung Cheng  
David Choon  
Jun-Dong Chang  
Takuya Otani  
Youn Soo Park  
Xianlong Zhang 张先龙

#### ASIA 2018 Invited Speakers

##### 特邀嘉宾

Cory Calendine  
Antonia Chen  
Michael Huo  
Adolph V. Lombardi  
SeungJae Lim  
Greg Li  
Ryuji Nagamine  
Andrew Tang

#### ASIA 2018 Chairmen of Session

##### ASIA 2018 专题负责人

Wei Chai 柴伟  
Chuan He 何川  
Michael Huo  
Jianbing Ma 马建兵  
Xiaogang Zhang 张晓岗  
Guoqiang Zhang 张国强  
Hui Zhao 赵辉

#### ASIA 2018 Secretary General

##### 大会秘书长

Guoqiang Zhang 张国强  
Hui Zhao 赵辉

#### ASIA2018 Secretariat

##### 大会秘书处

Xiaoxue Du 杜晓雪  
Wenfei Liu 刘文斐  
Weiwei Wang 王薇薇  
Chao Wang 王超  
Xuan Zhang 张轩

## ASIA Committee

### ASIA 委员会

#### Executive Committee

Founding Chairman Yan Wang  
Past President (2015-2017) S.K.S.Marya  
President 2017-2018 Haishan Wu  
Past Secretary General Youn Soo Park  
President Elect 2017-2018  
Treasurer Guoqiang Zhang  
Chairman of Finance Ling Cheng  
Chief Operating Officer

#### Past President

Past President (2013-2015) Myung Chul Yoo  
Past President (2015-2017) S.K.S.Marya  
President of ASIA2017 Hirokazu Iida

#### Honorary Consultant

Honorary Consultant Daniel J. Berry  
Honorary Consultant William J Maloney  
Honorary Consultant Chitranjans S. Ranawat

#### ASIA Faculty

Chairman of Education Warwick James Moody Bruce  
Chairman of Public Relations Yixin Zhou  
Chairman of Scientific Program Nicolaas C. Budhiparama  
Chairman of Finance Guoqiang Zhang  
Chairman of Membership Myung Chul Yoo

Haruhiko Akiyama	Seung-Beom Han	Kenji Ohzono
Dae Kyung Bae	Hirokazu Iida	Takuya Otani
Suthorn Bavonratanavech	Yeo Seng Jin	K.J. Reddy
Jun-Dong Chang	Anup Khare	Vikram I Shah
Wei-Ming Chen	Young-Ho Kim	Bin Shen
Xiaodong Chen	Yong Sik Kim	Chandeep Singh
Cheng-Kung Cheng	Jegan Krishnan	Nobuhiko Sugano
Peter KY Chiu	Myung Chul Lee	Lidong Wu
David Choon	Mel S. Lee	Weidong Xu
Etsuo Chosa	Jianbing Ma	Chun Hoi Yan
Thanainit Chotanaphuti	Tokifumi Majima	Tzaichiu Yu
M.S.Dhillon	Masatoshi Naito	Xianlong Zhang
Wanshou Guo	Bo Nivbrant	Yonggang Zhou
	Syed Shahid Noor	

Faculty  
讲师

Nicolaas C. Budhiparama		Mel S. Lee	李炫昇	Jirong Shen	沈计荣	Wenming Zhang	张文明
Hong Cai	蔡 宏	Greg Li	李 刚	Chandeep Singh		Xianlong Zhang	张先龙
Cory L. Calendine		Hui Li	李 辉	Pawel Skowronek		Xiaogang Zhang	张晓岗
Li Cao	曹 力	Huiwu Li	李慧武	Nobuhiko Sugano		Hui Zhao	赵 辉
Guanglei Cao	曹光磊	Pingyue Li	李凭跃	Li Sun	孙 立	Yixin Zhou	周一新
Wei Chai	柴 伟	Wei Li	李 为	Andrew Tang		Yongang Zhou	周勇刚
Chin-Hsiang Chang	张智翔	Guodong Li	李国东	Xiaobin Tian	田晓滨	Chen Zhu	朱 晨
Antonia Chen		SeungJae Lim		Kunzheng Wang	王坤正	Jianlin Zuo	左建林
Jiying Chen	陈继营	Jin Lin	林 进	Jinliang Wang	王金良		
Xiaodong Chen	陈晓东	Zhihong Liu	刘志宏	Yan Wang	王 岩		
Yunsu Chen	陈云苏	Xianzhe Liu	刘先哲	Fei Wang	王 飞		
Cheng-Kung Cheng	郑诚功	Adolph V. Lombardi		Haibin Wang	王海彬		
Peter KY Chiu	曲广运	Chia Shi Lu		You Wang	王 友		
Thanainit Chotanaphuti		Jianbing Ma	马建兵	Jian Wang	王 健		
Dermot Collopy		Yuanchen Ma	马元琛	Qi Wang	王 琦		
Eryou Feng	冯尔宥	Xinzhan Mao	毛新展	Haishan Wu	吴海山		
Matthias Gebauer		Yuanqing Mao	毛远青	Haobo Wu	吴浩波		
Lin Guo	郭 林	S.K.S.Marya		Lidong Wu	吴立东		
Wanshou Guo	郭万首	Ryuji Nagamine		Yaoping Wu	吴尧平		
Yongtai Hai	韩永台	Takuya Otani		Lianbo Xiao	肖连波		
Seung-Beom Han		Youn Soo Park		Weidong Xu	徐卫东		
Peng Hao	郝 鹏	KwanKyu Park		Chun Hoi Yan	忻振凯		
Chuan He	何 川	Fuxing Pei	裴福兴	Shigui Yan	严世贵		
Wei Huang	黄 伟	Qirong Qian	钱齐荣	Charlie Yang			
Michael Huo		Jianghui Qin	秦江辉	Zhenjun Yao	姚振均		
Qing Jiang	蒋 青	Richard Rothman	尚希福	Myung Chul Yoo			
Qunhua Jin	金群华	Xifu Shang	邵云潮	Tzai-Chiu Yu	于载九		
Anup Khare		Yunchao Shao	沈 彬	Bing Yue	岳 冰		
Young-Ho Kim		Bin Shen	沈计荣	Guoqiang Zhang	张国强		

## General Information

### 基本信息

Time: November 8th- 10th, 2018

Venue: Sheraton Grand Shanghai Pudong Hotel

Address: No.38 Pujian Road, Shanghai, Shanghai, 200127, China

Tel: 021-3483 5360

Official Language: English

Registration Desk: Level 1( Lobby ), Sheraton Grand Shanghai Pudong Hotel

#### Registration Opening times:

Thursday, November 8th 08:00-18:30

Friday, November 9th 08:00-18:30

Saturday, November 10th 08:00-18:30

Please collect meeting materials while registering ASIA2018. The students and residents must provide students/residents' ID card for discount. Otherwise, participants need to pay the full price for registration.

Slide Center: LUSHAN (Level 2)

Meals: Lunch will be provided on November 9th and November 10th.

时 间: 2018年11月08日至10日

会议地点: 上海浦东由由喜来登大酒店

地 址: 上海浦东新区浦建路38号, 近浦东南路。

电 话: 021 - 3483 5360

官方语言: 英语

注 册 处: 上海浦东由由喜来登大酒店1楼大堂

#### 注册开放时间:

11月08日 星期四 08:00 - 18:30

11月09日 星期五 08:00 - 18:30

11月10日 星期六 08:00 - 18:30

请在ASIA 2018注册处领取会议材料。学生和住院医师必须提供相应证件以享受注册优惠。未提供相应证件者, 需要支付全部注册费用。

试片室: 上海浦东由由喜来登大酒店2楼·庐山厅

大会将提供11月09日及11月10日午餐

## General Information

### 基本信息

#### Exhibition hours:

Level 2, Sheraton Grand Shanghai Pudong Hotel

Friday, November 9th 8:00-18:30

Saturday, November 10th 8:00-18:30

#### Important Social Events:

VIP Reception (VIP Only): 18:30-21:00, November 9th

#### ASIA-PJI Consensus

Launching of ASIA consensus of periprosthetic joint infection: 8:00-10:30, November 9th

Ballroom C, Level 2, Sheraton Grand Shanghai Pudong Hotel

#### Opening Ceremony:

8:00-8:50, November 10th

Ballroom A+B, Level 2, Sheraton Grand Shanghai Pudong Hotel

#### Accommodation:

For any enquire related to hotel booking, please go to [www.asia2018.org](http://www.asia2018.org) to book or go to Reception of Hotel

#### Other information:

Please carry along your annual meeting Badge for all Meeting activities

All the copyrights belong to ASIA. No photos, audio and video recording are allowed without committee's permission.

No distribution of advertisement or academic materials is allowed without committee's permission.

#### 展览时间:

上海浦东由由喜来登大酒店2楼 } 11月09日星期五 08:00-18:30

11月10日星期六 08:00-18:30

#### 重要活动:

VIP 晚宴 (仅限VIP): 11月9日 18:30-21:00

#### ASIA-PJI 共识:

ASIA-PJI共识启动: 08:00-10:30, 11月9日

会场C, 上海浦东由由喜来登大酒店2楼

#### 开幕式:

上海浦东由由喜来登大酒店2楼 Ballroom A+B: 11月10日 08:00-08:50

#### 住所:

有关酒店预订的任何咨询, 请访问 [www.asia2018.org](http://www.asia2018.org) 预订或前往酒店接待处进行现场咨询

#### 其他信息:

请佩戴您的胸牌参与所有会议活动

所有版权归ASIA所有。未经委员会许可, 不得进行照片, 录音和录像。

未经委员会许可, 不得分发广告及学术资料。

Pre-courses: Advanced Surgical Techniques  
手术新技术课程展示

Nov.9th BallroomA  
11月9日 会场A

BallroomA 会场A		
Moderator 主持人	Xifu Shang 尚希福	
8:00-8:05	Welcome Speech 开幕致辞	Xifu Shang 尚希福
8:10-8:30	Group Photo 全体合影	ALL
Minimally invasive approach of THA 髌关节微创手术入路		
8:30-8:50	Minimally invasive approach of THA: Lateral Position DAA 髌关节微创手术入路-侧卧位DAA	Xifu Shang 尚希福
8:50-9:10	DAA as a standard approach in THR? DAA能否成为全髌置换的标准入路	Pawel Skowronek
8:10-9:30	Minimally invasive approach of THA:Horizontal position DAA 髌关节微创手术入路-平卧位DAA	Wei Chai 柴伟
9:30-9:50	Minimally invasive approach of THA:Horizontal position OCM 髌关节微创手术入路-平卧位OCM	Jian Wang 王健
9:50-10:15	Minimally invasive approach of THA, Tradition or innovation? Guests: Youth Committee of YCOA 髌关节微创手术入路, 传统or创新 讨论嘉宾: YCOA骨科青委	Xifu Shang 尚希福
10:15-10:20	Summary 课程总结	Xifu Shang 尚希福
10:20-10:30	Tea Break 茶歇	
Prosthesis selection of Minimally invasive THA 髌关节微创假体选择		
10:30-10:50	Prosthesis selection of Minimally invasive THA: LCU 髌关节微创假体选择-传统直柄假体"	Xifu Shang 尚希福
10:50-11:10	Prosthesis selection of Minimally invasive THA: CFP 髌关节微创假体选择-CFP短柄假体"	Yongtai Han 韩永台
11:10-11:30	The Highlights of Short Stem Design 短柄假体的设计特点"	Matthias Gebauer
11:30-11:50	Prosthesis selection of Minimally invasive THA: CFP 髌关节微创假体选择-CFP	Peng Hao 郝鹏
11:50-12:15	Prosthesis selection of Minimally invasive THA, Trational or Short Handle Guests: Youth Committee of YCOA 髌关节微创假体选择, 短柄or常规 讨论嘉宾: YCOA骨科青委	Yongtai Han 韩永台
12:15-12:20	Summary 课程总结	Yongtai Han 韩永台
12:20	Closing ceremony 闭幕式	Xifu Shang 尚希福

Pre-courses: Advanced Surgical Techniques  
手术新技术课程展示

Nov.9th BallroomA  
11月9日 会场A

BallroomA 会场A		
Moderator 主持人	Haishan Wu Pingyue Li 吴海山 李凭跃	
13:00-13:20	Opening: Current Challenges to TKA 开幕词: 当代TKA的现状与挑战	Haishan Wu 吴海山
13:20-13:40	Patient Satisfactory Improvement and Journey II Design Rationale TKA患者满意度的提升与Journey II设计理念	Chia Shi Lu
13:40-14:00	Record Surgery: Journey II BCS Primary TKA 手术录播: Journey II双交叉韧带稳定假体初次膝关节置换	Chia Shi Lu
14:00-14:20	Improve TKA Patient outcome TKA术后患者疗效的提升	Jianbing Ma 马建兵
14:20-14:40	TKA implants design prospect TKA假体设计新进展	Eryou Feng 冯尔宥
14:40-15:00	Panel Discussion: Pre-op Communication and Implant Choice for High Expectation Patients 尖峰问答: 高需求患者的术前沟通与假体选择	Haishan Wu & Chia Shi Lu & Jianbing Ma & Eryou Feng & Lin Guo & Guoqiang Zhang 吴海山、Chia Shi Lu、马建兵、冯尔宥、郭林、张国强
15:00-15:20	Coffee Break: Journey II and Legion Workshop 茶歇: Journey II & Legion假骨操作演示	
Moderator 主持人	Lin Guo Guoqiang Zhang 郭林 张国强	
15:20-15:40	GB & MR in CR TKA 测量截骨与间隙平衡技术在CR手术中的运用	Pingyue Li 李凭跃
15:40-16:00	Ligament balance in TKA 我如何平衡软组织	Lin Guo 郭林
16:00-16:20	How do I achieve complex primary TKA with Legion 我如何用Legion做复杂初次TKA	Xiaogang Zhang 张晓岗
16:20-17:20	Live/Record Surgery: Legion Primary TKA 手术直播: Legion初次TKA	Guodong Li 李国东
17:20-17:40	Panel Discussion: What would you do? Difficulty Primary Case Study 尖峰问答: 复杂TKA病例讨论	Eryou Feng 冯尔宥
17:40-17:50	Closing & Expectation 总结与展望	Haishan Wu 吴海山

Pre-courses: Advanced Surgical Techniques  
手术新技术课程展示

Nov.9th BallroomB  
11月9日 会场B

BallroomB 会场B		DePuySynthes <small>COMPANIES OF Johnson &amp; Johnson</small>
8:30-8:35	Welcome Speech 开场致辞	Haishan Wu 吴海山
Moderator 主持人	Haishan Wu 吴海山	
8:35-9:00	The Voice of American-The Experience of 2000 Attune Caeses in my Hospital (J-box) 来自美国的最强音-2000例Attune全膝置换美国经验 (J-Box)	Charlie Yang
Moderator 主持人	Lianbo Xiao 肖连波	
9:00-10:15	Live Surgery 匠心独运CR传承	Lianbo Xiao 肖连波
9:00-9:05	Attune Cruciate Retaining Rotating Platform-Case introduction and Pre-op management Attune CR 旋转平台-病例介绍, 术前规划	Weidong Xu 徐卫东
9:05-10:00	Attune Cruciate Retaining Rotating Platform-Complex primary total knee arthroplasty Attune CR 旋转平台-后叉韧带保留型旋转平台复杂初次全膝关节置换	Weidong Xu 徐卫东
10:00-10:15	Tea Break 茶歇	
Moderator 主持人	Zhenjun Yao 姚振均	
10:15-10:45	The Voice of China-Stability in Motion: My Experience in China 来自中国最强音-难以想象的稳定高屈曲-300例Attune全膝置换中国经验	Wei Li 李为
10:45-11:55	Live Surgery 专与精 旋出彩	Zhihong Liu 刘志宏
10:45-11:50	Attune Posterior Cruciate Substituting Rotating Platform-Case introduction and Pre-op management Attune PS 旋转平台-病例介绍, 术前规划	Qi Wang 王琦
10:50-11:55	Attune Posterior Cruciate Substituting Rotating Platform-Complex primary total knee arthroplasty Attune PS 旋转平台-后稳定型旋转平台复杂初次全膝关节置换	Qi Wang 王琦
11:55-12:00	Conclusion 总结致辞	Haishan Wu 吴海山

Pre-courses: Advanced Surgical Techniques  
手术新技术课程展示

Nov.9th BallroomB  
11月9日 会场B

BallroomB 会场B		stryker
12:30-12:50	Welcome 欢迎致辞	Yan Wang & Haishan Wu & Min Ma 王岩、吴海山、马敏
Mako Live – THA		
Moderator 主持人	Yan Wang Li Cao Yonggang Zhou 王岩 曹力 周勇刚	
12:50-14:00	Live Surgery I: Mako Total Hip 手术直播 (一): Mako机器人辅助全髋关节置换手术	Xianlong Zhang & Qi Wang 张先龙、王琦
Mako Live – PKA		
Moderator 主持人	Haishan Wu & Andrew Tang & Qing Jiang 吴海山、Andrew Tang、蒋青	
14:00-15:10	Live Surgery II: Mako Partial Knee 手术直播 (二): Mako机器人辅助单髁置换手术	KwanKyu Park
15:10-15:30	Tea Break 茶歇 & Mako假骨操作演示	
Mako Experience		
Moderator 主持人	Fuxing Pei Xianlong Zhang Shigui Yan 裴福兴 张先龙 严世贵	
15:30-16:00	Mako, The Australian experience, clinical and registry outcomes	Dermot Collopy
16:00-16:30	Mako Experience in Beijing 301 Hospital 北京301医院机器人使用经验	Jiyong Chen 陈继营
16:30-17:00	Mako in Shanghai 6th Hospital 上海六院机器人使用经验	Qi Wang 王琦
Mako Talk		
Moderator 主持人	Wei Chai 柴伟	
17:00-17:30	Mako Talk	引导专家: Wei Chai 柴伟
17:00-17:30	Panel Discussion 讨论	Andrew Tang & Dermot Collopy & Jiyong Chen Guoqiang Zhang & Qi Wang & Jianghui Qin Andrew Tang、Dermot Collopy、陈继营、张国强、王琦、秦江辉
17:30-17:40	Wrap up/ Close 会议总结	Yan Wang & Haishan Wu 王岩、吴海山





Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomA+B  
11月10日 会场A+B

会场A+B		
8:00-8:50	Opening Ceremony 开幕式	
Moderator 主持人	Guest Lecture Chairman of Session: Guoqiang Zhang 张国强	
8:50-9:05	3ES Practice in Adult Reconstructive Surgery in China 中国重建手术3ES的体验	Haishan Wu 吴海山
9:05-9:20	Acetabular medial wall osteotomy THA in DDH patients. Technical pitfall and long term outcomes 先髋患者全髋关节置换中髋臼内侧壁截骨技术的陷阱与远期效果	Myung Chul Yoo
9:20-9:35	Designing and application of noval monoblock stems with select- able anteversion angles 新型一体式、可选前倾角度的股骨柄的设计和应用	Yan Wang 王岩
9:35-9:50	Debridement, Antibiotics & Implant Retention: What does the Consensus Say ? 清创、抗生素和保假体：专家共识怎么说？	Nicolaas C. Budhiparama
9:50-10:05	Spectrum of Constraint for Cruciate-Retaining Primary Total Knee Arthroplasty 全膝关节置换术CR假体的限制范围	Adolph V. Lombardi
10:05-10:15	Tea Break 茶歇	
10:15-10:30	Mechanism of failure and indications for revision TKR 膝关节翻修术失败的原因与表现	S.K.S.Marya
10:30-10:45	THA in America: the current situation and challenge 美国全髋关节置换术现状和面临的挑战	Michael Huo
10:45-11:00	Clinical results of the short stem in DDH patients 先髋患者应用短柄的临床经验	Takuya Otani
11:00-11:15	Discussion 讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomA  
11月10日 会场A

Satellite meeting & Lunch 卫星会 & 午餐		
12:00-12:30	The Journey to Journey II ASIA satellite meeting ASIA卫星会-"重现自然"膝关节之旅	 smith&nephew 施乐辉
12:30-13:00	“精准导航”蛇牌OrthoPilot导航下关节置换	 BRAUN SHARING EXPERTISE 贝朗医疗
Precise reconstruction in TKA 全膝关节置换技术：精确重建技术 Chairman of Session: Wei Chai 柴伟		
Moderator 主持人	Yan Wang Xianlong Zhang Yixin Zhou 王岩 张先龙 周一新	
13:30-13:45	How to precisely release a verus knee? 如何精确的松解内翻膝关节？	Peter KY Chiu 曲广运
13:45-14:00	Size mismatch affects TKR outcomes 膝关节假体型号不匹配影响术后关节功能	S.K.S.Marya
14:00-14:10	Surface replacement for knees with various primary bony defects and profound angulation deformities 伴有各种类型骨缺损和严重畸形的膝关节表面置换	Yaoping Wu 吴尧平
14:10-14:20	Primary Experience of MAKO Robot assist unicondyle replacement MAKO 机器人辅助下单髁关节置换术的早期经验	Jiying Chen 陈继营
14:20-14:30	10 year patient satisfaction in CAS or nonCAS TKA 计算机辅助/传统全膝关节置换术患者的10年满意率	Thanainit Chotanaphuti
14:30-14:45	Robotic Surgery ... How accurate is it and is this the future? 机器人手术到底有多精确，是未来的方向吗？	Andrew Tang
14:45-14:55	Discussion 讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomA  
11月10日 会场A

Paper Session 投稿发言		
Moderator 主持人	Lidong Wu Wanshou Guo Weidong Xu 吴立东 郭万首 徐卫东	
14:55-15:00	Modified kinematically aligned total knee arthroplasty 全膝关节置换术: 改良的运动学对线	Ku-chou Huang
15:00-15:05	Comparing the Outcome of Circumferential Patellar Denervation in Unresurfaced Simultaneous Bilateral Total Knee Arthroplasty 未行髌骨置换的同期双膝关节置换术: 髌骨周围去神经化技术的临床对比研究	Hendy Hidayat
15:05-15:10	Floating Bearing TKA Shows High Failure Rate at Midterm Follow Up 活动平台假体的全膝关节置换术的中期随访结果: 高失败率	Jae-Hyuk Choi
15:10-15:15	Mid-Term Outcome of Patient Specific Instrumentation in Total Knee Arthroplasty 个性化工具辅助下全膝关节置换术的中期随访结果	Jerry Yongqiang Chen
15:15-15:20	Does Patient-Specific Instrumentation improve Surface Kinematics in Patients After Minimally-Invasive Total Knee Arthroplasty During Isolated Knee Exercises? 微创全膝关节置换术中应用个性化工具能否改善膝关节锻炼中的表面运动学?	Kao-Shang Shih
15:20-15:25	Complications with medial opening wedge high tibial osteotomy 胫骨高位截骨: 内侧撑开技术的并发症	Haijun Xu 徐海军
15:25-15:30	Comparison of early outcomes between HTO and UKA for medial tibiofemoral osteoarthritis 膝关节内侧骨关节炎: 胫骨高位截骨和单髁关节置换早期临床效果的对比研究	Xiaoling Fu 付晓玲
15:30-15:35	Simultaneous management of severe gonarthrosis and ipsilateral tibia stress fracture by modulated total knee arthroplasty: a new classification and mid-term follow-up 应用组配式假体的全膝关节置换处理严重膝关节骨关节炎合并同侧胫骨应力性骨折: 一种新分型和中期随访	Hui Li 李辉
15:35-15:40	A Novel Technique of Tibial Expansion Osteotomy in Type II Valgus Deformity via Total Knee Arthroplasty II型膝外翻的全膝关节置换术: 胫骨开放截骨新技术	Yuan Zhang 张瑗
15:40-15:45	Application of hinged knee prosthesis in total knee arthroplasty for patients with severe valgus knee 采用铰链膝关节处理极度外翻膝的经验	Yakang Wang 王亚康
15:45-15:50	Better Total Knee Arthroplasty Selection for Asian Patients: Quadriceps-Sparing TKA适合亚洲人的膝关节置换技术: 保留股四头肌全膝关节置换术	Yansong Qi 齐岩松
15:50-16:00	Discussion 讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomA  
11月10日 会场A

Anatomical and Mechanical Features in Asia Population 亚洲膝关节置换之关键技术 Chairman of Session: Jianbing Ma 马建兵		
Moderator 主持人	Tzai-Chiu Yu Hong Cai 于载九 蔡宏	
16:00-16:10	Asian Knees are not just smaller, but diferent! 亚洲人膝关节不只是更小些, 而是真的不同!	Peter KY Chiu 曲广运
16:10-16:20	Pearls for improvement of function after primary TKA -10 year follow up of parallel cutting bone balancing techniques 提高初次TKA疗效的技巧-平行截骨平衡技术10年随访	Tzai-Chiu Yu 于载九
16:20-16:30	Tibial rotation for Asian TKA patient 亚洲病人的胫骨旋转角度	Thanainit Chotanaphuti
16:30-16:40	How to predict the external rotation angle of the femur cut according to the preoperative X-ray? 如何根据术前X片预测股骨外旋截骨角度?	Jianbing Ma 马建兵
16:40-16:50	A Case control study comparing mechanically aligned and kinematically aligned total knee arthroplasty in Chinese-radiographic accuracy and patient-reported outcomes 一项关于华人全膝关节置换机械对线与运动对线的影像学精度与病人报告的结果的病例对照研究	Chun Hoi Yan 忻振凯
16:50-17:00	Intra -op Tibial Size morphology in Indian population and comparison with standard implants available in 250 patients 250个印度人胫骨形态学尺寸与标准胫骨假体匹配比较的研究	Chandeep Singh
17:00-17:10	What factor decides the posterior slope angle of the tibia articular surface?A new TKA system for Asia patients 什么因素决定了胫骨平台的后倾角? 一种新的专为亚洲人设计的膝关节系统	Ryuji Nagamine
17:10-17:20	How to make designed TKA bone cut based on preoperative 3D CT:A study of 480 southern Chinese patients. 如何利用术前3D CT在TKA术中实现精准截骨: 480例南方中国人病例研究	Lin Guo 郭林
17:20-17:30	Simultaneous management of severe gonarthrosis and ipsilateral tibia stress fracture by modulated TKA:A new classification and mid-term follow-up 合并同侧应力骨折的OA的一期TKA:一种新分型方法和中期随访	Hui Li 李辉
17:30-17:40	Determining the distal femoral valgus angle of TKA in Chinese based on three-dimensional model—200 knees analysis 通过三维模型确定中国人TKA股骨外翻截骨角度—200膝分析	Huiwu Li 李慧武
Paper Session 投稿发言		
17:40-17:50	Mismatch between femur and tibia coronal alignment in the knee joint: classification of five lower limb types according to the mechanical alignment of the femur and tibia 膝关节股骨与胫骨冠状位对线的不匹配情况: 基于股骨和胫骨的五种下肢机械对线分类	Yu-Hsien Lin
17:50-18:00	One-Stage Total Knee Arthroplasty for Osteoarthritis Combining with Fracture Nonunion and Malunion around Knee Joint 膝关节周围骨折后骨不连和愈合不良导致骨性关节炎的一期置换	Chun-Chieh Chen
18:00-18:30	Discussion: Yunsu Chen, Chuan He, Li Sun, Huiwu Li, Lin Guo, Eryou Feng 讨论嘉宾: 陈云苏, 何川, 孙立, 李慧武, 郭林, 冯尔宥	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomB  
11月10日 会场B

Satellite meeting & Lunch 卫星会 & 午餐		
12:00-13:00	Fondaparinux, What does first selective factor Xa inhibitor mean to VTE prophylaxis in Orthopaedic Surgery.	
Precision Treatment for Adult DDH patients 成人DDH精准治疗 Chairman of Session: Guoqiang Zhang 张国强		
Moderator 主持人	Takuya Otani Guoqiang Zhang 张国强	
13:20-13:30	Opening speech 开幕演讲	Yan Wang 王岩
13:30-13:40	Long term results of hip resurfacing arthroplasty. A minimum 15 years follow-up 髋关节表面置换术长期随访结果	Myung Chul Yoo
13:40-13:50	Clinical results of the short stem in DDH patients 先髋患者应用短柄的临床经验	Takuya Otani
13:50-14:00	Periprosthetic femoral fracture as cause of early revision after short stem hip arthroplasty 髋关节置换术使用短柄术后假体周围骨折成为早期失败翻修的原因	Seung-Jae LIM
14:00-14:10	Gait analysis and LLD of patients with high dislocated DDH 高脱位 patients, 步态分析及双下肢不等长问题	Weidong Xu 徐卫东
14:10-14:20	Hip preservation for DDH: more than periacetabular osteotomy DDH的保髋治疗:不止是髋臼周围截骨	Xiaodong Chen 陈晓东
14:20-14:30	CT based navigation for THA in patients with DDH. 先天性髋关节发育不良患者CT导航下的全髋关节置换术	Nobuhiko Sugano
14:30-14:40	Design Rationale and Biomechanical Analysis of a DDH Hip Stem 先天性髋关节发育不良假体柄的设计与生物力学分析	Cheng-Kung Cheng 郑诚功
14:40-14:50	THA for adult DDH patients 成人DDH患者的THA	Seung-Beom Han

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomB  
11月10日 会场B

Paper Session 投稿发言		
Moderator 主持人	Li Sun Pingyue Li 孙立 李凭跃	
14:50-14:55	Midterm Results of Conversion from Failed Bipolar Hemiarthroplasty to Total Hip Arthroplasty 双头头失败后全髋关节置换术中期随访结果	Chang Yong Hu
14:55-15:00	Total Hip Arthroplasty of Complicated DDH via Direct Anterior Approach: initial experience of 15 Cases Classified Crowe III-IV From Chongqing, China. 直接前路全髋关节置换术: 中国重庆15例Crowe III-IV先髋的初步经验	Yuan Zhang 张媛
15:00-15:05	Total Hip Arthroplasty in patients of Hereditary Multiple Exostoses : A Minimum 5-year Follow-up Study 遗传性多发性外生骨疣行全髋关节置换术5年随访结果	Jae Youn Yoon
15:05-15:10	Direct Leverage for Reducing the Femoral Head in Total Hip Arthroplasty Without Femoral Shortening Osteotomy for Crowe Type 3 to 4 Dysplasia of the Hip 直接翘拨技术在Crowe 3-4型DDH行THA并未行粗隆下载骨技术中关节复位的应用	Huiwu Li 李慧武
15:10-15:15	The Midterm Results of Total Hip Arthroplasty with Modified Trochanteric Osteotomy in Crowe Type IV Developmental Dysplasia Crowe IV先髋行全髋关节置换术联合改良转子截骨术的中期随访结果	Taek Rim Yoon
15:15-15:20	The technique reconstructing the regular morphology of proximal femoral medullary cavity in treatment of the severe deformity of proximal femur in primary total hip replacement 严重股骨近端畸形全髋关节置换术中股骨近端髓腔重建技术	Chen Zhu 朱晨
15:20-15:25	Do the Reasons for Ceramic-on-ceramic Revisions Differ between Forte- and Delta-bearing in Total Hip Arthroplasty? 全髋关节置换中陶对陶界面使用三代陶瓷与四代陶瓷翻修的原因是否相同?	Sang-Min Kim
15:25-15:30	The early experience of impaction bone grafting and a cement cup for acetabular reconstruction in China 打压植骨技术与水泥臼杯在髋臼重建中的早期应用经验	Xinzhan Mao 毛新展
15:30-15:35	Osteolysis after Primary THA using First-Generation XLPE: Analysis using 3-Dimensional CT scan at follow-up of Fifteen years 利用三维CT扫描对初次全髋关节置换使用第一代交联聚乙烯发生骨溶解的15年随访	Shin-Yoon Kim
15:35-16:00	Discussion 讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomB  
11月10日 会场B

Precision Treatment for AVN Patients 股骨头坏死精准治疗 Chairman of Session: Chuan He 何川		
Moderator 主持人	Nobuhiko Sugano Xiaodong Chen 陈晓东	
16:00-16:15	Non-Traumatic Osteonecrosis of Femoral Head-A Challenge to early diagnosis,prevention&management 非创伤性股骨头坏死：对早期诊断、预防和治疗挑战	Anup Khare
16:15-16:30	Joint registry of osteonecrosis of the femoral head in Japan. 日本股骨头坏死关节登记系统	Nobuhiko Sugano
16:30-16:45	The impact of femoral anatomy on survival outcomes of femoral stem in primary THA 在初次THA中股骨解剖形态对股骨柄生存率的影响	Youn-Soo Park
16:45-17:00	Long term outcomes after metal-on-metal total hip arthroplasty with a 28-mm head in treatment of osteonecrosis of femoral head 在股骨头坏死病人行金-金全髋置换术中使用28mm直径股骨头的长期疗效	Young-Ho Kim
17:00-17:15	AVN of femoral head "Salvage or Replacement" 股骨头坏死“保头还是置换”	Seung-Beom Han
17:15-17:25	Modified femoral neck osteotomy through surgical hip dislocation for AVN 经外科脱位改良股骨颈底部旋转截骨治疗股骨头坏死	Xiaodong Chen 陈晓东
17:25-17:35	Stepped treatment of osteonecrosis of femoral head 股骨头坏死的阶梯治疗	Jirong Shen 沈计荣
17:35-17:45	Discussion : Yuanchen Ma, Haobo Wu, Yunchao Shao, Yuanqing Mao, Chen Zhu, Fei Wang 讨论：马元琛、吴浩波、邵云潮、毛远青、朱晨、王飞	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomB  
11月10日 会场B

Paper Session 投稿发言		
Moderator 主持人	Anup Khare Wenwei Qian 钱文伟	
17:45-17:50	Highly Cross Linked Polyethylene in Total Hip Arthroplasty in Patients Younger than 50 Years with Osteonecrosis of the Femor A Minimum of 10 Years of Follow Up 高交联聚乙烯在小于50岁股骨头坏死病人全髋置换中的表现：一项最短随访10年的研究	Byung-woo Min
17:50-17:55	Ceramic bearings in THA: What can we learn from registries? THA中的陶瓷内衬：我们能从登记系统中学到什么？	Martin Zimmermann
18:00-18:05	Minimally invasive small incision direct anterior total hip arthroplasty in the lateral decubitus position: complications and early outcome 侧卧位微创小切口直接前路全髋置换：并发症和早期结果	Chen Zhu 朱晨
18:05-18:10	The application of direct anterior approach(DAA) in bilateral total hip arthroplasty 在双侧全髋置换术中直接前路的应用	Wulian Wang 王武炼
18:10-18:15	The Efficacy of Multiple Drilling and Alendronate Compared with Multiple Drilling Alone in the Treatment of Osteonecrosis of the Femoral Head 多孔减压加阿仑膦酸与单纯多孔减压治疗股骨头坏死的疗效对比	Chengta Wu 吴政達
18:15-18:20	Radiological analysis of cystic lesion in osteonecrosis of the femoral head 股骨头坏死骨腔隙缺损的放射学分析	Fuqiang Gao 高富强
18:20-18:30	Discussion : Hui Zhao, Xinzhan Mao, Pingyue Li, Xiaorui Cao, Jinliang Wang, Haibin Wang 讨论：赵辉、毛新展、李凭跃、曹晓瑞、王金良、王海彬	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Rehabilitation & Perioperative Management 康复及围手术期管理 Chairman of Session: Hui Zhao 赵辉		
Moderator 主持人	Antonia Chen Qirong Qian 钱齐荣	
9:00-9:10	Fast Track Arthroplasty Practice in Huaxi Hospital 中国华西医院快速康复关节外科实践	Shen Bin 沈彬
9:10-9:20	Fast Track Arthroplasty Practice in Peking Union Medical College Hospital 中国北京协和医院快速康复关节外科实践	Jin Lin 林进
9:20-9:30	Fast Track Arthroplasty Practice in Second Affiliated Hospital of Zhejiang University School of Medicine 中国浙大二院快速康复关节外科实践	Lidong Wu 吴立东
9:30-9:40	Preoperative patient optimization 关节置换患者围手术期管理优化	Antonia Chen
9:40-9:50	No transfusion, no Foley'catheter for postoperative TKA ; Do it enough for day surgery? TKA术后不输血及不导尿：是否可以日间手术？	Thanainit Chotanaphuti
9:50-10:00	International rehabilitation best practice experience for arthroplasty 关节置换手术康复最佳国际实践	Greg Li 李刚
10:00-10:10	Robotic-arm assisted surgery how it could help us improve outcomes 机器手臂辅助关节手术如何改善临床结果	Dermot Collopy
10:10-10:20	Tea Break 茶歇	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Paper Session 投稿发言		
10:20-10:30	The application of thrombelastogram in the risk stratification for thromboembolism prophylaxis after joint arthroplasty 血栓弹力图在关节置换术后血栓栓塞预防危险分层中的应用	Qiujian Zheng 郑秋坚
10:30-10:40	The role of thromboelastography in monitoring the changes of coagulation function in the ERAS of arthroplasty 血栓弹性图在监测快速通道关节置换术凝血功能变化中的作用	Ning Hu 胡宁
10:40-10:50	Perioperative sleep disturbance in total hip and knee arthroplasty managed with enhanced recovery protocol-- a preliminary report 增强康复方案管理全髋关节和膝关节置换术围手术期睡眠障碍：初步报告	Yunchao Shao 邵云潮
10:50-10:55	Effect of combination using of tranexamic acid for reducing blood loss after aged total knee arthroplasty 联合应用氨甲环酸降低老年全膝关节置换术后失血量	Kuo Sun 孙廓
10:55-11:00	Effect of early intensive rehabilitation after total knee replacement surgery of RA male patient. A case study. 一例男性类风湿性关节炎患者TKA术后早期积极康复的临床结果报道	HsienYeh Chou 周賢燁
11:00-11:05	Efficacy and safety of knee standardized home exercise program comparing supervised physiotherapy to improve mobility and quality of life after Total knee arthroplasty 膝关节标准化家庭锻炼计划的有效性和安全性	Tianyang Xu 徐天阳
11:05-11:10	The safety and efficacy of cocktail therapy in total knee arthroplasty 鸡尾酒疗法在全膝关节置换术中的安全性和有效性	Jingtao Sun 孙京涛
11:10-11:15	Efficacy and safety of tranexamic acid in geriatric hip fracture with hemiarthroplasty: a prospective cohort study 半髋关节置换术治疗老年人髋部骨折中使用氨甲环酸的疗效和安全性：一项前瞻队列研究	Qinsheng Hu 胡钦胜
11:15-11:20	Effect of tourniquet on perioperative period of total joint replacement 止血带对全关节置换术围手术期的影响	Wenbo Ye 叶博闻
11:20-11:25	Direct anterior minimally invasive Total Hip Arthroplasty: the role of an 'Enhanced Recovery' pathway 直接前路微创全髋关节置换术：'增强恢复'的作用	Wenbo Wang 王文波
11:25-11:30	State-of-the-Art evidence-based review of aspirin for thromboprophylaxis in modern elective total hip and knee arthroplasty 择期全髋关节和膝关节置换术中阿司匹林用于血栓预防的最新证据回顾	Zhimin Ying 应志敏
11:30-12:00	Discussion: Qing Jiang , Qunhua Jin, Xiaobin Tian, Wei Huang, Jianlin Zuo 讨论： 蒋青, 金群华, 田晓滨, 黄伟, 左建林	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Satellite meeting & Lunch 卫星会 & 午餐		
12:00-12:30	Xarelto® Tailored Protection for Your Patients 抗凝从未如此高效简便	 拜耳
12:30-13:00	MOBIO全膝关节置换系统：畅爽运动，无需妥协——b-ONE宽岳骨科卫星会	 宽岳骨科
ASIA-AORECON Symposium ASIA-AORECON 研讨会 Chairman of Session: Michael Huo		
Moderator 主持人	Michael Huo Yixin Zhou 周一新	
13:30-13:45	Technology and Joint Replacement: the robots are coming 关节置换技术：机器人时代来临	Cory Calendine
13:45-13:55	Arthroplasty option for femur neck fracture 股骨颈骨折的关节置换手术	Youn-Soo Park
13:55-14:05	Global Trends of Periprosthetic Fractures of the Lower Extremities 下肢假体周围骨折的全球趋势	Nicolaas C. Budhiparama
14:05-14:15	Revision knee Arthroplasty for periprosthetic fractures 膝关节假体周围骨折的翻修手术	S.K.S.Marya
14:15-14:25	Supra Condylar Periprosthetic fractures treatment options – Revision vs fixation 假体周围髌上骨折治疗方案：翻修与固定	Chandeep Singh
14:25-14:35	Overview of peri-prosthetic femur fracture, THR 髌关节置换中的股骨假体周围骨折	Michael Huo
14:35-14:45	Stem selection and augmentation of bone stock in the management of Vancouver B2 and B3 periprosthetic femoral fractures 温哥华B2和B3股骨假体周围骨折的处理：股骨柄选择和骨量重建	SeungJae Lim
14:45-14:55	Conversion to long stem is really necessary in treatment of Vancouver B2 and B3 periprosthetic femoral fractures? 温哥华B2和B3股骨假体周围骨折时是否需要转换为长柄?	Young-Ho Kim
14:55-15:05	Type B peri prosthetic fractures after THA THA术后假体周围骨折Vancouver B型的处理	Yixin Zhou 周一新
15:05-15:15	Is it necessary to achieve neutral mechanical alignments after total knee arthroplasty? TKA重建中立位对线是否必要?	Chun Hoi Yan 忻振凯
15:15-15:25	Intercondylar distal femoral fracture after posterior stabilized Total Knee Replacement (PS TKR) a neglected intraoperative complication 后稳定型膝关节置换术后股骨远端髌间骨折	Chin-Hsiang Chang 張智翔

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Paper Session 投稿发言		
15:25-15:30	Mid-term outcome of converted hip arthroplasty with middle-long stem for early failed DHS 早期失败的DHS转换为中长柄髌关节置换术的中期结果	Hsinting Wu 吴信廷
15:30-15:35	Comparison of SuperPATH and traditional modified Hardinge approach for hip arthroplasty in femoral neck fracture patients older than 80 years 80岁以上股骨颈骨折患者行髌关节置换术使用SuperPATH入路与传统改良Hardinge方法的比较	Gangyong Huang 黄钢勇
15:35-15:40	Thoughts on the treatment of periprosthetic fractures in patients with osteoporosis 骨质疏松症患者假体周围骨折的思考	Chongjun Guo 郭崇军
15:40-15:45	Traits and Treatment of Stable Periprosthetic Femoral Fracture 稳定性假体周围股骨骨折的特点及治疗	Jinliang Wang 王金良
15:45-15:50	Short - term clinical efficacy study of unicompartmental knee arthroplasty aided by 3D printing osteotomy guide plate 3D打印截骨导板辅助单髌关节置换术的短期临床疗效研究	Yu Nie 聂宇
15:50-16:00	Discussion 讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Solutions for Infected TJA 关节置换感染解决方案 Chairman of Session: Xiaogang Zhang 张晓岗		
Moderator 主持人	Xianlong Zhang Mel S. Lee 张先龙 李炫昇	
16:00-16:10	Diagnosis of periprosthetic joint infection 假体周围感染的诊断	Antonia Chen
16:10-16:20	Comparison of Metagenomics Next-Generation Sequencing and Culture Methods for Diagnosing Periprosthetic Joint Infection 假体周围感染的病原诊断:宏基因组二代测序与微生物培养的比较研究	Wenming Zhang 张文明
16:20-16:30	Molecular diagnosis of PJI 假体周围感染的分子诊断	Mel S. Lee
16:30-16:40	Prosthetic joint infection - prevention strategies 人工关节感染预防策略	S.K.S.Marya
16:40-16:50	How to improve the success of DAIR 如何提高DAIR的成功率	Weidong Xu 徐卫东
16:50-17:00	Single-stage revision for Prosthetic joint infection 一期翻修治疗假体周围感染	Li Cao 曹力
17:00-17:10	VMA antibiotic loading protocol of articulating cement Spacer for PJI VMA抗生素方案用于PJI的关节型间隔物	Xianlong Zhang 张先龙
17:10-17:20	The strategy of 2 stage revision for Prosthetic joint infection 二期翻修治疗假体周围感染的策略"	Yonggang Zhou 周勇刚
17:20-17:30	Treatment of infected total hip arthroplasty 全髋关节置换术后感染的治疗	Takuya Otani
17:30-17:40	Questions and Discussion 提问与讨论	

Annual Meeting Scientific Program  
学术日程

Nov.10th BallroomC  
11月10日 会场C

Paper Session 投稿发言		
Moderator 主持人	Xiaogang Zhang Antonia Chen 张晓岗	
17:45-17:50	Plasma fibrinogen exhibits better performance than D-dimer in the diagnosis of periprosthetic joint infection: A multicenter retrospective study 血浆纤维蛋白原在假体周围关节感染诊断中的表现优于D-二聚体:一项多中心回顾性研究	Rui Li 李睿
17:50-17:55	Predictive value of NLR, PLR and LMR in the assessment of acute osteoarthritis and acute infection after total joint arthroplasty NLR、PLR、LMR在关节置换术后急性感染及骨关节炎急性期评估中的预测价值	Guanglei Zhao 赵广雷
17:55-18:00	Antibiotics-loaded articulating femoral head cement spacer for the treatment of advanced pyogenic arthritis in adult hip 活动型股骨头抗生素骨水泥占位器治疗成人晚期化脓性髋关节炎	Yoon-Je Cho
18:00-18:05	Predictors of Treatment Failure After 2-Stage Reimplantation for Infected Total Knee Arthroplasty: A 2- to 10-Year Follow-Up 二期翻修治疗全膝关节置换术后感染失败因素分析	FengChih Kuo 郭峰志
18:05-18:10	Single-stage revision with direct intra-articular antibiotic infusion for culture-negative periprosthetic joint infection-- A comparative study 一期翻修联合关节腔内抗生素注射治疗培养阴性的假体周围感染——临床对比研究	Baochao Ji 纪保超
18:10-18:15	Outcome of irrigation and debridement with liner exchange, followed by IV and local antibiotics delivery in the treatment of PJI within 3 months since the primary TKA or THA: an average of 56.3 m of follow-up. 初次髋、膝关节置换术后3月内初心假体周围感染: 清创, 单纯更换内衬联合静脉及局部使用抗生素的临床效果	Wenbo Mu 穆文博
18:15-18:30	Questions and Discussion 提问与讨论	



## Abstracts in Paper Session

Paper 1	Highly Cross Linked Polyethylene in Total Hip Arthroplasty in Patients Younger than 50 Years with Osteonecrosis of the Femor A Minimum of 10 Years of Follow Up	41
Paper 2	Ceramic bearings in THA: What can we learn from registries?	42
Paper 3	Total Hip Arthroplasty in patients of Hereditary Multiple Exostoses : A Minimum 5-year Follow-up Study	43
Paper 4	Thoughts on the treatment of periprosthetic fractures in patients with osteoporosis	44
Paper 5	Midterm Results of Conversion from Failed Bipolar Hemiarthroplasty to Total Hip Arthroplasty	45
Paper 6	Minimally invasive small incision direct anterior total hip arthroplasty in the lateral decubitus position: complications and early outcome	46
Paper 7	Comparison of SuperPATH and traditional modified Hardinge approach for hip arthroplasty in femoral neck fracture patients older than 80 years	47
Paper 8	The application of direct anterior approach(DAA) in bilateral total hip arthroplasty	48
Paper 9	The technique reconstructing the regular morphology of proximal femoral medullary cavity in treatment of the severe deformity of proximal femur in primary total hip replacement	49
Paper 10	Total Hip Arthroplasty of Complicated DDH via Direct Anterior Approach: initial experience of 15 Cases Classified Crowe III-IV From Chongqing , China.	50
Paper 11	The Efficacy of Multiple Drilling and Alendronate Compared with Multiple Drilling Alone in the Treatment of Osteonecrosis of the Femoral Head	51
Paper 12	Antibiotics-loaded articulating femoral head cement spacer for the treatment of advanced pyogenic arthritis in adult hip	52
Paper 13	The Midterm Results of Total Hip Arthroplasty with Modified Trochanteric Osteotomy in Crowe Type IV Developmental Dysplasia	53

## Abstracts in Paper Session

Paper 14	Direct Leverage for Reducing the Femoral Head in Total Hip Arthroplasty Without Femoral Shortening Osteotomy for Crowe Type 3 to 4 Dysplasia of the Hip	54
Paper 15	The early experience of impaction bone grafting and a cement cup for acetabular reconstruction in China	55
Paper 16	Mid-term outcome of converted hip arthroplasty with middle-long stem for early failed DHS	56
Paper 17	Traits and Treatment of Stable Periprosthetic Femoral Fracture	57
Paper 18	Do the Reasons for Ceramic-on-ceramic Revisions Differ between Forte- and Delta-bearing in Total Hip Arthroplasty?	58
Paper 19	Osteolysis after Primary THA using First-Generation XLPE: Analysis using 3-Dimensional CT scan at follow-up of Fifteen years	59
Paper 20	Femoral stem survivorship in Dorr type A femurs following total hip arthroplasty using a cementless tapered wedge stem: A matched comparative study with type B femurs	60
Paper 21	Mismatch between femur and tibia coronal alignment in the knee joint: classification of five lower limb types according to the mechanical alignment of the femur and tibia	61
Paper 22	Complications with medial opening wedge high tibial osteotomy	61
Paper 23	Comparison of early outcomes between HTO and UKA for medial tibiofemoral osteoarthritis	63
Paper 24	Modified kinematically aligned total knee arthroplasty	64
Paper 25	Better Total Knee Arthroplasty Selection for Asian Patients: Quadriceps-Sparing TKA	65
Paper 26	Simultaneous management of severe gonarthrosis and ipsilateral tibia stress fracture by modulated total knee arthroplasty: a new classification and mid-term follow-up	66

## Abstracts in Paper Session

Paper 27	One-Stage Total Knee Arthroplasty for Osteoarthritis Combining with Fracture Nonunion and Malunion around Knee Joint	67
Paper 28	A Novel Technique of Tibial Expansion Osteotomy in Type II Valgus Deformity via Total Knee Arthroplasty	68
Paper 29	Application of hinged knee prosthesis in total knee arthroplasty for patients with severe valgus knee	69
Paper 30	Floating Bearing TKA Shows High Failure Rate at Midterm Follow Up	70
Paper 31	Comparing the Outcome of Circumferential Patellar Denervation in Unresurfaced Simultaneous Bilateral Total Knee Arthroplasty	71
Paper 32	Does Patient-Specific Instrumentation improve Surface Kinematics in Patients After Minimally-Invasive Total Knee Arthroplasty During Isolated Knee Exercises?	72
Paper 33	Short - term clinical efficacy study of unicompartmental knee arthroplasty aided by 3D printing osteotomy guide plate	73
Paper 34	Mid-Term Outcome of Patient Specific Instrumentation in Total Knee Arthroplasty	74
Paper 35	The role of thromboelastography in monitoring the changes of coagulation function in the ERAS of arthroplasty	75
Paper 36	State-of-the-Art evidence-based review of aspirin for thromboprophylaxis in modern elective total hip and kneearthroplasty	76
Paper 37	The application of thrombelastogram in the risk stratification for thromboembolism prophylaxis after joint arthroplasty	77
Paper 38	Effect of combination using of tranexamic acid for reducing blood loss after aged total knee arthroplasty	78
Paper 39	Efficacy and safety of knee standardized home exercise program comparing supervised physiotherapy to improve mobility and quality of life after Total knee arthroplasty	79

## Abstracts in Paper Session

Paper 40	The safety and efficacy of cocktail therapy in total knee arthroplasty	80
Paper 41	Efficacy and safety of tranexamic acid in geriatric hip fracture with hemiarthroplasty: a prospective cohort study	81
Paper 42	Effect of tourniquet on perioperative period of total joint replacement	82
Paper 43	Perioperative sleep disturbance in total hip and knee arthroplasty managed with enhanced recovery protocol-- a preliminary report	83
Paper 44	Direct anterior minimally invasive Total Hip Arthroplasty: the role of an 'Enhanced Recovery' pathway	84
Paper 45	Effect of early intensive rehabilitation after total knee replacement surgery of RA male patient. A case study	85
Paper 46	Predictors of Treatment Failure After 2-Stage Reimplantation for Infected Total Knee Arthroplasty: A 2- to 10-Year Follow-Up	86
Paper 47	Predictive value of NLR, PLR and LMR in the assessment of acute osteoarthritis and acute infection after total joint arthroplasty	87
Paper 48	Single-stage revision with direct intra-articular antibiotic infusion for culture-negative periprosthetic joint infection --- A comparative study	88
Paper 49	Plasma fibrinogen exhibits better performance than D-dimer in the diagnosis of periprosthetic joint infection: A multicenter retrospective study	89
Paper 50	Outcome of irrigation and debridement with liner exchange, followed by IV and local antibiotics delivery in the treatment of PJI within 3 months since the primary TKA or THA: an average of 56.3 m of follow-up.	90
Paper 51	Radiological analysis of cystic lesion in osteonecrosis of the femoral head	91

**Highly Cross Linked Polyethylene in Total Hip Arthroplasty in Patients Younger than 50 Years with Osteonecrosis of the Femur A Minimum of 10 Years of Follow Up**Byung-woo Min, Kyung-Jae Lee, Hyungjoo Kim  
Keimyung University, Dongsan Medical Center**Background:**

Polyethylene wear and subsequent periprosthetic osteolysis remains a major concern of total hip arthroplasty (THA) failure in young, active patients with osteonecrosis of the femoral head (ONFH). The literature is lacking regarding the long-term performance of highly cross-linked polyethylene (HXLPE) in these patients. The purpose of this study was to evaluate long-term results for cementless THA using metal-on-HXLPE bearing couplings in patients younger than 50 years with ONFH.

**Method:**

We retrospectively evaluated the clinical and radiographic results of a consecutive series of 85 THAs (in 67 patients) performed with HXLPE liners (Durasul) in patients younger than 50 years who had ONFH. All procedures were performed at a single institution by a single surgeon using the same type of implants. The minimum duration of follow-up was 10 years (mean, 13.5 years; range, 10–17.3 years). Wear was measured using computer software. Osteolysis was evaluated with the use of radiography and computed tomography.

**Results:**

The mean Harris hip score was 49.3 points (range, 26–68 points) before surgery, which improved to 93.6 points (range, 87–98 points) after surgery. Neither femoral nor acetabular components displayed mechanical loosening, and no components had been revised by the final follow-up evaluation. Radiographs and computed tomography scans did not demonstrate osteolysis. The mean liner wear was 0.037 mm/y (range, 0–0.099 mm/y). With the data available, univariate regression analysis did not demonstrate that age, sex, weight, activity level, underlying cause of osteonecrosis, liner thickness, or cup inclination had any influence on liner penetration.

**Conclusions:**

Although the long-term effects of HXLPE particles remain unknown, the implant survivorship rate and wear rate in our study are promising and support the continued use of metal-on-HXLPE bearing couplings in these high-risk patients because they do not produce any of the issues associated with hard-on-hard couplings.

**Ceramic bearings in THA: What can we learn from registries?**Martin Zimmermann, Alan A. Porporati  
CeramTec GmbH**Background:**

National or regional registries are a well-accepted source of information regarding the survival rates of various implant systems used in orthopaedics. Recently, a new class of materials has been implemented in some registries to better evaluate the latest generation of ceramics made of composite materials.

The aim of this paper is to evaluate three aspects related to BIOLOX<sup>®</sup>-delta ceramic bearings in THA: the fracture incidence, the clinical survival rate and the potential effect of bearing materials on reported revisions for PJI.

**Method:**

In this study, several regional and national joint replacement registries have been analyzed regarding ceramic component fracture rates and compared with the manufacturer database. The clinical survival rates have been extracted for various bearing couples, including mixed ceramics. Nine local, regional and national joint replacement registers have been analyzed regarding bearing influence on revisions for PJI with a total of 827'306 procedures involved.

**Results:**

The fracture rate of composite ceramic heads and inserts reported by the registries was found to be of the same order of magnitude of that recorded by the manufacturer database: 0.001% and 0.021%, respectively.

The clinical survival rates observed with mixed ceramics are always better than the conventional alumina ceramics.

It could be demonstrated that MoM bearings have a hazard ratio of 1.3-2.3 compared to MoP bearings, confirming the consensus that this bearing has an increased risk of PJI. In contrary, the hazard ratio was reduced to 0.4 when ceramic components were used compared to MoP. The bearing type was therefore identified as an independent risk factor for revision for PJI.

**Conclusions:**

In comparison with earlier-generation ceramics, fractures of composite ceramics have become an extremely rare event in THA and the survival rates have been improved.

It is suggested that the bearing type can influence the revision rate due to PJI.

**Total Hip Arthroplasty in patients of Hereditary Multiple Exostoses : A Minimum 5-year Follow-up Study**

Jae Youn Yoon<sup>1</sup>, Hee Joong Kim<sup>1</sup>, Jeong Joon Yoo<sup>1</sup>,  
Youn-Soo Park<sup>2</sup>, Seung-Jae Lim<sup>2</sup>, Chan-Woo Park<sup>2</sup>  
1. Seoul National University Hospital  
2. Samsung Medical Center

**Background:**

Hereditary multiple Exostoses(HME) is an autosomal dominant disorder resulting abnormal bone growth in metaphysis. Lesions in proximal femur may bring about hip dysplasia and subsequent degenerative arthritis. We evaluated the result of THA in patients of HME after a minimum follow-up of 5 years.

**Methods:**

We retrospectively reviewed the patients who underwent THA due to HME between December 1995 and May 2011 at two different institutions. 8 patients(10 hips) met the requirement of minimum 5-year follow-up. There were 5 female and 3 male, with a mean age of 53 years at surgery. Mean duration of follow-up was 10.2 years(range; 6-20 years). Clinical evaluations include Harris Hip Score(HHS) and a questionnaire regarding pain and functional abilities of the patient. Radiologic evaluations include heterotopic ossification(HO), liner wear, radiolucent line, osteolysis, implant loosening and the ratio between mediolateral diameter of metaphysis and femoral stem.

**Results:**

The mean HHS improved from 42 preoperatively to 94.1 postoperatively. There were no remarkable early complications except HO in 3 patients. Radiographically, polyethylene liner wear and osteolysis was observed at 19.2 year follow-up of 1 patient who underwent bilateral THA. Stem radiolucent line was seen in 4 patients(5 hips) at 7.2 year follow-up, but no radiolucent lines exceeded 2mm in width. Metaphyseal fill ratio did not have any statistical significance with other parameters.

**Conclusions:**

Due to its rarity, there have only been few case-reports regarding personal experience of THAs in HME. To our knowledge, we are the first to report the minimum 5 year results of THA in patients of HME with relatively larger scale. Our data showed encouraging clinical outcomes and mid to long-term implant survival rate. When properly prepared, THA may be a reasonable option for patients of HME

**Thoughts on the treatment of periprosthetic fractures in patients with osteoporosis**

Chongjun Guo, Dongsheng Niu  
Ningxia Hui Autonomous Region People's Hospital

**Methods:**

There were 3 cases of preoperative severe osteoporosis in our hospital in the past 2 years. The patient had previous fractures due to femoral trochanteric fracture, non-union of the fracture, limited hip joint activity, large age, poor quality of life, and preoperative bone density. Severe osteoporosis, preoperative preparation of prosthesis selection, preparation of steel plate and femoral long stem WANGER prosthesis, 1 case of periprosthetic fracture, distal end of prosthesis, 1 case Distal fracture of the middle prosthesis, 1 case of proximal to distal fracture of the prosthesis, emergency treatment was performed during operation, and the Johnson & Johnson Wanger femoral stem prosthesis was fixed, the femoral plate was fixed, and at least 3 screws were fixed at both ends of the fracture.

**Results:**

Three patients were treated with anti-osteoporosis drugs and bone healing drugs at 2 weeks postoperatively. They were reviewed regularly after surgery. After 3 months, there was osteophyte growth at the end of the bone. The body is stable and the hip function is significantly improved compared with preoperative.

**Midterm Results of Conversion from Failed Bipolar Hemiarthroplasty to Total Hip Arthroplasty**

Chang Yong Hu, Taek-Rim Yoon,  
Kyung-Soon Park  
Chonnam National University  
of Hwasun Hospital

**Background:**

Conversion total hip arthroplasty (THA) after failed bipolar hemiarthroplasty (HA) is known to offer both symptomatic and functional improvement. This study evaluates the midterm functional outcome and complications, especially dislocation associated with femoral head diameter, after conversion THA.

**Materials and Methods:**

Forty eight hips with the conversion of bipolar HA to THA were followed up for an average 6.2 years (range 2.0–11.5 years). Twenty one hips had conversion surgery to THA using metal-on-metal articulation (28 or 32 mm head). Nine hips used ceramic-on-ceramic (28–40 mm) and eighteen hips used large head metal-on-metal bearing (>40 mm). Outcome was evaluated using Harris Hip Score (HHS) and Western Ontario McMaster Universities Osteoarthritis Index (WOMAC) score. The radiographs were analyzed for evidence of osteolysis and/or loosening. The complications were evaluated, especially dislocation with different femoral head diameter.

**Results:**

Average HHS significantly improved from 42 preoperatively to 86 postoperatively and the average WOMAC score also significantly improved from 47 to 22 postoperatively. Radiological evaluation showed all the femoral components were stable. There was one acetabular component loosening, which required revision 9 years after conversion to THA. One dislocation and one recurrent dislocation were recorded in isolated acetabular revision hip; whereas one dislocation, one recurrent dislocation, and one trochanteric nonunion occurred in the hips with revision of both components. All dislocations occurred in hips with a femoral head size of 28 mm. The cup and femoral head interval length was the most significant factor contributing to dislocation.

**Conclusions:**

Conversion THA after failed bipolar HA offers a reliable pain relief and functional improvement. To prevent dislocation, it is highly recommended to use a larger diameter femoral head, especially where the cup size is big.

**Minimally invasive small incision direct anterior total hip arthroplasty in the lateral decubitus position: complications and early outcome**

Chen Zhu, Xifu Shang, Rong Kong, Dewan Yu,  
Kerong Wu, Linlin Zhang, Daijie Fu,  
Ziyang Gan, Zhe Ni, Xiaoqi Zhang  
the First Affiliated Hospital of University  
of Science and Technology of China,  
Anhui Provincial Hospital

**Background:**

To analyze the feasibility, perioperative complications and early outcomes of minimally invasive small incision in direct anterior approach total hip arthroplasty (THA) in lateral decubitus position.

**Methods:**

212 patients (228 hips) received minimally invasive small incision (8 cm in length) direct anterior approach THA in modified lateral decubitus position. Sixteen cases underwent bilateral hip arthroplasty separately. Twenty-eight patients (28 hips) were set as the complicated case group. The rest 184 patients (200 hips) had no previous hip surgeries, severe deformity and limited motion of the hip, were set as the standard group, and were divided into the first 100 cases group and the second 100 cases group in sequence. The difference between the standard and complicated case group were analyzed. Also we compared the difference between the first 100 cases and the second 100 cases. Perioperative complications, postoperative function and radiological evaluation were recorded and statistically analyzed.

**Results:**

All the patients were followed-up for 13 to 25 months. Intraoperative and postoperative complications happened in 9 and 34 patients respectively. The anterior dislocation occurred in 2 cases. The standard group showed significant superior outcomes when compared with complicated case group in the surgical time ( $P=0.027$ ), blood loss ( $P=0.000$ ), postoperative Harris hip score ( $P=0.024$ ) and the rate of surgical complication ( $P=0.000$ ). The complication rate tended to decrease in the second 100 cases when compared with that in the first 100 cases ( $P=0.037$ ). Meanwhile, the second 100 cases showed significant excellent outcomes when compared with the first 100 cases in the mean surgical time ( $P=0.002$ ) and blood loss ( $P=0.018$ ).

**Conclusions:**

It suggests that there is a learning curve with the minimally invasive small incision direct anterior approach THA in lateral decubitus position. The risk of intraoperative femoral fractures is slightly high, especially for cases with osteoporosis, stiffness and limited range of movement.

**Comparison of SuperPATH and traditional modified Hardinge approach for hip arthroplasty in femoral neck fracture patients older than 80 years**

Gangyong Huang, Yibin Wei, Jun Xia,  
Siqun Wang, Jianguo Wu, Feiyan Chen,  
Jie Chen, Jingsheng Shi, Guanglei Zaho  
Department of orthopaedics,  
Huashan Hospital Fudan University, Shanghai

**Objective:**

To compare the safety and clinical outcomes of hip arthroplasty by SuperPATH and modified Hardinge approach in femoral neck fracture patients older than 80 years. **Methods** From August 2013 to October 2015, 44 eligible femoral neck fracture patients older than 80 years were collected who underwent hip arthroplasty by either SuperPATH or modified Hardinge approach. 40 patients of hemiarthroplasty were analysed after excluding the 4 heterogenic total hip cases with 20 cases in SuperPATH group (Male/Female=3/17; averaged 83.0±2.9 years) and 20 cases in modified Hardinge group (Male/Female=4/16; averaged 82.8±2.7 years). The assessment included surgery time, blood loss, pain, complications, Harris score and satisfactory rate.

**Results:**

The average follow-up time was 7.8±1.6 months in SuperPATH group and 8.1±1.7 months in modified Hardinge group with all cases longer than 6 months. No patients in either group had complication of dislocation or nerve injury. No patient died in the follow-up period. For surgical time, those in SuperPATH group averaged 67.4±9.5 min and 71.9±5.1 min in modified Hardinge group ( $P > 0.05$ ), while the incision closure time of SuperPATH (12.9 ±2.7 min) was much shorter than that of modified Hardinge group (25.0 ±3.8 min). The decline of hemoglobin in the 1st postoperative day and 5th postoperative day from preoperative level in SuperPATH group were 12.6±3.7 g/L and 15.2±3.8 g/L which were significantly more than 16.9±4.5g/L and 21.0±5.3 g/L in modified Hardinge group comparatively. The patients in SuperPATH group suffered less pain within 6 weeks while similar pain in 3 and 6 months with those in the other group, got better Harris score (70.4±4.8) than the modified Hardinge group (61.9±7.1) in 3 months but similar in 6 months.

**Conclusion:**

SuperPATH hip arthroplasty showed less trauma, less complications and better rehabilitation than traditional modified Hardinge approach in femoral neck fracture patients older than 80 years.

**The application of direct anterior approach(DAA) in bilateral total hip arthroplasty**

Wulian Wang, Yiyuan Zhang, Lili Xiao, Wentao Lin  
The Fuzhou Second Hospital Affiliated To Xiamen University

**Objective:**

To observe the effectiveness and the perioperative safety of simultaneous bilateral total hip arthroplasty (THA) with direct anterior approach (DAA) in the treatment of bilateral hip diseases.

**Methods:**

A retrospective study was conducted in 84 cases (168 hips) of simultaneous bilateral total hip arthroplasty (the simultaneous group) and 120 cases (240 hips) of staged bilateral total hip arthroplasty (the staged group) with DAA in our hospital from June 2013 to June 2018. The operation time, total blood loss, blood transfusion volume, Harris score, hospitalization days, total cost and postoperative complications were observed between the two groups.

**Results:**

There were no significant differences in gender, age, etiology, Harris score, total blood loss, blood transfusion, postoperative drainage volume, postoperative complications between the two groups ( $P > 0.05$ ). In the simultaneous group, the operation time was (101.9 ± 21.0) minutes, the hospitalization time was (16.1 ± 0.9) days, and the total cost was (60.0 ± 12,000) yuan. In the staged group, the operation time was (160.0 ± 33.5) minutes, the hospitalization time was (32.9 ± 2.2) days, and the total cost was (92 ± 28,000) yuan. The above difference between the two groups was statistically significant ( $t = 3.386, 4.387, 3.779, P < 0.05$ ).

**Conclusion:**

DAA with simultaneous bilateral hip arthroplasty is not only safe and effective, but also can reduce the operation time, hospital stay and hospital costs.

**The technique reconstructing the regular morphology of proximal femoral medullary cavity in treatment of the severe deformity of proximal femur in primary total hip replacement**Chen Zhu, Xifu Shang, Rong Kong, Ruixiang Ma, Qianming Li, Ming Chen, Huajun Zhou, Zhengliang Luo, Xiaofeng Ji, Peng Cheng  
The First Affiliated Hospital of University of Science and Technology of China, Anhui Provincial Hospital**Background:**

To respectively analyze the early outcomes, efficacy and complications of the technique reconstructing the regular morphology of proximal femoral medullary cavity in treatment of the severe deformity of proximal femur in primary total hip replacement (THA).

**Methods:**

From January 2015 to January 2017, 30 patients were treated with extended greater trochanteric osteotomy with distal advancement of the trochanter remodeling in the proximal femur anatomic structure in the THA. 5 cases were bilateral hip arthroplasty separately. The anatomy of the proximal femur is most markedly changed. The dysplasia of proximal femoral medullary cavity, the rotation or angulation deformities of proximal femur, the shift-up of femoral greater trochanter, and the leg length discrepancy were popular in every patients by the preoperative radiographic evaluation. Meanwhile, the functional measure of hip joints, leg length discrepancy and postoperative complications and change of X ray photograph were evaluated and compared in every patients. Results All patients experienced substantial improvement in walking ability and relief of pain at the last follow-up. Trendelenburg test was positive in 35 hips preoperatively, and only in 3 postoperatively. 35 cases with displaced fragments were achieved bony union. The mean Harris hip scores increased from preoperatively  $38.18 \pm 5.24$  points to  $82.87 \pm 4.45$  points three month postoperatively ( $t = -15.768$ ,  $P = 0.000$ ). The average preoperative leg length discrepancy in patients for all the patients was  $4.21 \pm 2.92$  cm preoperatively longer than  $0.73 \pm 0.32$  cm postoperatively ( $t = 4.487$ ,  $P = 0.002$ ).

**Conclusion:**

The technique reconstructing regular morphology of proximal femoral medullary cavity remodeling the proximal femur anatomic structure in treatment of the severe deformity of proximal femur in the THA can improve better abductor strength, restore normal anatomy, recovery limb length, provide primary fixation and rotational stability, and decrease the likelihood of nonunion.

**Total Hip Arthroplasty of Complicated DDH via Direct Anterior Approach: initial experience of 15 Cases Classified Crowe III-IV From Chongqing, China.**Yuan Zhang, Xia Zhang, Min Wang, Yue Zhou  
Department of Orthopedics, Xinqiao Hospital, Third Military Medical University, Chongqing, China, 400037.**Background:**

The residents in southwest China largely suffer from severe DDH due to multiple factors. This study aims to explore the possibility and rationality in treating complicated DDH patients with DAA.

**Methods:**

11 female and 4 male local residents were admitted since June 2015 to June 2017. The severity of the disease: 12 cases in CROWE type III and 3 cases in type IV. All DAA were conducted following a standard protocol, as well as particular procedures including capsulectomy, release of ITB and adductor, medialization of the acetabular, and use of modular prosthesis (S-rom, Depuy). 21 Patients received a posterolateral THA was adopted as the control group.

**Results:**

For patients in Crowe type III and type IV, the average operating time was 85.6 min and 93.1 min, as compared to 71.0 min and 84.9 min in the control. The mean blood loss was 275 ml and 416 ml, as compared to 210 ml and 350 ml in the control.

No postoperative infection, hematoma, wound problem, prosthetic loosening, peri-prosthetic fracture were observed during average follow-up period of 11.3 months.

The improvement of Harris score were found to be significantly higher at the 3rd month and 6th month postoperatively, with a mean increment of 22.3 and in Crowe type III and 36.9 in type IV (versus 16.7 and 28.5 in the control). The percentage of the patients whose muscle strength over scale IV in hip flexor and abductor was found in 100% (15/15) and 86.7% of the patients (13/15) [versus 85.7% (18/21) and 66.7% (14/21) in the control]. DAA is not helpful in promoting the early correction of the pelvic and lumbar inclinations.

**Conclusion:**

Although high demand for surgical technique, DAA is still an option even superior for complicated DDH.

**The Efficacy of Multiple Drilling and Alendronate Compared with Multiple Drilling Alone in the Treatment of Osteonecrosis of the Femoral Head**

Cheng-Ta Wu<sup>1</sup>, Kuo-Chin Huang<sup>2</sup>,  
Kuo-Ti Peng<sup>2</sup>, Mel S. Lee<sup>1</sup>  
1. Kaohsiung Chang Gung Memorial hospital  
2. Chang Gung Memorial Hospital, ChiaYi branch

**Objective:**

Osteonecrosis of the femoral head (ONFH) is a debilitating disease. The purpose of the study was to investigate whether a combined therapy of multiple drilling and alendronate would achieve better outcomes than multiple drilling alone.

**Methods:**

From 2001 to 2005, we treated 58 hips in 45 patients with pre-collapsed or early-collapsed (< 2mm) ONFH by multiple drilling. Of them, 19 patients took oral alendronate with variable periods after the surgery. All 58 hips were followed for a mean of 8.4 years (2 - 14), of which 23 were ARCO stage II and 3 stage III in the combined treatment group, 26 stage II and 6 stage III in the multiple drilling alone group.

**Results:**

50 % (13/26) of hips in the combined treatment group successfully preserved the joints without any additional surgeries, compared with 25 % (8/32) of hips in the drilling alone group (p = 0.049). The mean time of patients undergoing additional surgeries in the combined treatment group was 40.3 months (8 to 145 months), compared with that of 22.8 months (2 to 120 months) for the patients in the drilling alone group (p = 0.01). 10-year survivorship was significantly better for the combined treatment group than the drilling alone group when either clinical failure or radiological failure was used as the end point (p = 0.004, p = 0.016, respectively). The adjusted Cox regression model showed that alendronate administration independently decreased the risk of clinical and radiological failure, while advanced ARCO stage was an independent risk factor for both clinical and radiological failure.

**Conclusion:**

The study suggested that multiple drilling combined with oral alendronate increase the clinical and radiological success rates, especially in the precollapse stage. Alendronate may be an effective adjuvant treatment in delaying the progression of collapse and preventing early mechanical failure after decompression.

**Antibiotics-loaded articulating femoral head cement spacer for the treatment of advanced pyogenic arthritis in adult hip**

Yoon-Je Cho<sup>1</sup>, Dhruvil Patel<sup>3</sup>, Young Soo Chun<sup>2</sup>,  
Hu Liang<sup>1</sup>, Kee Hyung Rhyu<sup>1</sup>  
1. Kyung Hee University Hospital  
2. Kyung Hee University Hospital at Gangdong,  
Seoul, Korea  
3. Navrang Hospital, Vadodara, India

**Background:**

The aim of this study was to present a treatment for end-stage pyogenic arthritis of the hip using a novel cement spacer. This spacer caused less damage to the proximal femoral bone and made the conversion to Total Hip Arthroplasty (THA) more convenient while maintaining the advantages of current cement spacers loaded with antibiotics.

**Methods:**

We retrospectively reviewed 10 consecutive cases of hip pyogenic arthritis with joint destruction. These cases occurred from September 2009 to June 2015. In these cases, we used an antibiotic-loaded, cement spacer that was formed in the shape of the femoral head. This spacer rested on multiple screws that were inserted in the remaining neck of the femur. Once the infection subsided, a conversion to THA was performed in all cases. Evaluation included clinical and radiological outcomes and the development of complications.

**Results:**

The mean interval between spacer insertion and conversion to THA was 101.6 days (range: 59-187 days). The mean follow-up period from initial spacer insertion was 44.9 months (range: 15 – 95 months). All cases underwent non-cemented THA following the resolution of the initial infection. The mean Harris Hip score at the initial visit, before conversion to THA and on final follow-up were 58.8, 71.0 and 92.5, respectively. No case had any spacer-related complications, recurrence of infection, or dislocation.

**Conclusion:**

The treatment of advanced pyogenic arthritis with this novel femoral head spacer technique significantly reduced pain, preserved proximal femoral bone and soft tissue tension, controlled infection, improved function, and allowed for easier conversion to THA.

**The Midterm Results of Total Hip Arthroplasty with Modified Trochanteric Osteotomy in Crowe Type IV Developmental Dysplasia**

Taek Rim Yoon, Jing Yao Kim,  
Chang Yong Hu, Kyung Soon Park  
Chonnam National University Hospital,  
Gwangju, Korea

**Methods:**

This study explored mid-term clinical results of total hip arthroplasty (THA) with modified trochanteric osteotomy in Crowe type IV developmental dysplasia of the hip (DDH). We conducted a retrospective analysis of 26 patients (29 hips) with Crowe Type IV who underwent THA between April 2005 and September 2015. Mean follow-up was 5.1 years. Mean Harris hip score improved from 30.9±9 to 92.3±5.3 significantly ( $p<0.05$ ). The mean leg length discrepancy (LLD) was 48.6±11.0 mm (range, 32.0-70.0) preoperatively. The final LLD was 7.2±5.5 mm (range, 1.9-14.2). Mean leg lengthening after surgery was 40.7±14.4 mm (range, 24.0-66.2). The average duration of trochanteric bony union was 3.2±0.8 months (range, 1.7-4.5).

**Results:**

There were no infection, GT nonunion or stem loosening in all cases, but 4 cases showed aseptic loosening of the acetabular component and underwent acetabular revision. We had 2 cases dislocation postoperatively, but all cases were treated by closed reduction, without recurrent dislocation.

**Conclusion:**

Performing THA with modified trochanteric osteotomy is an effective treatment for Crowe type IV developmental dysplasia of the hip and can rebuild the complex biomechanics and biology of hip dysplasia without increasing the complication if the surgery is performed by experienced surgeon.

**Direct Leverage for Reducing the Femoral Head in Total Hip Arthroplasty Without Femoral Shortening Osteotomy for Crowe Type 3 to 4 Dysplasia of the Hip**

Huiwu Li<sup>1</sup>, Yao Yuan<sup>2</sup>, Jiawei Xu<sup>1</sup>,  
Yongyun Chang<sup>1</sup>, Kerong Dai<sup>1</sup>, Zhenan Zhu<sup>1</sup>  
1. Shanghai Ninth People's hospital,  
Shanghai JiaoTong University school of Medicine  
2. Yuyao People's hospital of Zhejiang Province

**Background:**

A number of methods for reduction in high hip dislocation in total hip arthroplasty (THA) are time-consuming and laborious, and require great surgical skills. This study aimed to introduce a new reduction technique to achieve rapid, safe, and easy reduction in high hip dislocation.

**Methods:**

We retrospectively reviewed 74 THA patients (82 hips; 44 women, 30 men) with severe hip dysplasia who underwent direct leverage using a Hohmann retractor into the anatomical acetabulum without femoral shortening osteotomy between September 2007 and January 2014. Forty-nine hips were classified as Crowe III and 33 hips were classified as Crowe IV. The mean follow-up period was 5.1 years (range 2-8).

**Results:**

Mean Harris Hip Score increased from 42.1 (range 24-71) before surgery to 89.9 (range 76-100) at final follow-up examination. The legs were lengthened by a mean of 3.0 cm (range 1.1-5.5) and 2.5 cm (range 1.1-3.5) in Crowe III hips and 3.6 cm (range 1.9-5.5) in Crowe IV hips postoperatively. The average leg-length discrepancy at the final follow-up examination was 0.4 cm (standard deviation 0.5 cm). One greater trochanteric fracture occurred during the hip reduction process. One patient developed femoral nerve palsies and recovered completely at 3 weeks postoperatively.

**Conclusion:**

Direct leverage using the Hohmann retractor for the reduction in high hip dislocation in THA without femoral shortening osteotomy is simple, safe, and effective.

**The early experience of impaction bone grafting and a cement cup for acetabular reconstruction in China**

Xinzhan Mao<sup>1</sup>, HongXing Li<sup>1</sup>, XiaoXin Wu<sup>1</sup>, GuangPing Cai<sup>1</sup>,  
WanChun Wang<sup>1</sup>, WeiHong Zhu<sup>1</sup>, TianLong Huang<sup>1</sup>, Crawford Ross<sup>2</sup>  
1. Second XiangYa Hospital of Central South University  
2. Prince Charles Hospital, Brisbane

**Background:**

Acetabular reconstructions in total hip replacements (THRs) with severe acetabular defects are still challenging. Many methods of reconstructing acetabular defect have been described and each method has the advantages and disadvantages. Although impaction bone grafting (IBG) and a cement cup is a now mature technique in acetabular reconstruction which has achieved satisfying long-term outcome, to our knowledge, little Chinese experience about this technique has been reported in the international journals.

**Purposes:**

This study evaluates the short-term outcome of IBG and cement cups in acetabular reconstruction in both primary and revision THRs and shares our early Chinese experience of this technique. In addition, we review the indications and results of this technique compared with other techniques in literature.

**Patients and Methods:**

Between May 2013 and December 2015, acetabular reconstructions using IBG and cement cups were performed in 9 revision THRs (9 patients), 12 primary THRs (10 patients). The mean Harris hip score (HHS), AP view of the pelvic and lateral view of the affected hip and the complications about 1 week, 3 months, 1 year and annually after the operation were obtained to evaluate clinical and radiological failure during the follow-up.

**Results:**

All the patients have been followed up and 21 hips have followed up an average of 23.4(8-37) months. No revision, re-revision, radiographic loosening or cup migration was detected at the final follow-up. The mean HHS improved from 45.5(32-58) points preoperatively to 85.9(78-92) points at the final evaluation. No postoperative dislocation, sciatic nerve injury or other complications happened in this study.

**Conclusions:**

IBG and a cement cup with or without meshes is a reliable technique which can restore bone defect, reestablish the stability of hips and cause fewer complications in most of the acetabular reconstructions.

**Level of Evidence:**

4(according to Oxford CEBM Levels of Evidence)

**Mid-term outcome of converted hip arthroplasty with middle-long stem for early failed DHS**

Hsinting Wu<sup>1</sup>, Fuchun Chang<sup>1</sup>, Tsanwen Huang<sup>1</sup>,  
Kuochin Huang<sup>1</sup>, Hsinnung Shih<sup>2</sup>  
1. Chang Gung Memorial Hospital, Chiayi, Taiwan  
2. Chang Gung Memorial Hospital, Linkou, Taiwan

**Background:**

Pertrochanteric fracture occurred frequently in elderly population. Open reduction and internal fixation is the gold standard for these patients. However, fixation is frequently associated with a failure especially in osteoporotic patients. Conversion hip arthroplasty is a salvage procedure in patients with fixation failure. The purpose of our study was to investigate the mid-term outcome for patients with early failure of DHS fixation.

**Methods:**

This is a single-institutional retrospective study. There are 18 patients operated for hip arthroplasty with middle-long stem following early failed DHS from January 2006 to June 2011 in a single hospital. Inclusion criteria were (1) early failed DHS fixation following ORIF for pertrochanteric fracture, and (2) duration of follow-up was more than 60 months. Radiographic and clinical assessment was evaluated.

**Results:**

Three patient had complications related to the procedure. These included one patient who had intra-operative periprosthetic fracture, 1 postoperative periprosthetic fracture, and 1 dislocation. With regard to Merle d'Aubigné and Postel clinical score, pain score was  $5.1 \pm 0.7$ , mobility score was  $5.2 \pm 0.8$ , and Ability to walk score was  $5.2 \pm 0.4$  at last follow-up.

**Conclusions:**

In patients with early failed DHS, conversion hip arthroplasty with middle-long stem seems to be a reasonable treatment option.

## Traits and Treatment of Stable Periprosthetic Femoral Fracture

jinliang wang,Xuan Wei,Shuchun Song  
Zhengzhou Orthopaedic Hospital

### Objective:

To retrospectively analyze the clinical traits and treatment strategies for prosthetic fracture of stable stem class.

### Methods:

Post-operation patients who underwent total hip arthroplasty or hemi-arthroplasty from October 2006 to June 2015 were enrolled in this study, including 20 cases(20 stems) with stable stem,8 males,12 females,2 stems for cement ,18 for cementless,13 for total hips,7 for hemi-arthroplasty,age between 62 years and 87 years with average 72.3 years, and peri-acetabular fracture were excluded from this study.For the patients,five underwent conservative treatments,and 15 underwent open reduction and internal fixation including 7 single plates fixation,4 wire fixation,1 plate with wire fixation,3 plate with allograft. Harris score and complications were recorded in the last follow-up.

### Results:

The results were as follows, one ununion in five conservative,and for the operated patients,three death in one year including two lung infection in two months and five months post-operatively,one death for heart dysfunction. The rest twelve patients were followed for 4.3 years on average with Harris scores 78.3 (50-90),including one ununion case and all the other 11 patients got union,the time needs for union was 3.9 months(3-9 months).

### Conclusion:

Stable stem of periprosthetic fracture had high mortality than needed more care peri-operatively.A reasonable selection of fixation was responsible for good function.

## Do the Reasons for Ceramic-on-ceramic Revisions Differ between Forte-and Delta-bearing in Total Hip Arthroplasty?

Sang-Min Kim<sup>1</sup>,Kee Hyung Rhyu<sup>2</sup>,Jeong Joon Yoo<sup>3</sup>,Kwang-Jun Oh<sup>4</sup>,  
Seung-Jae Lim<sup>5</sup>,Je Hyun Yoo<sup>6</sup>,Soc Hyun Kweon<sup>7</sup>,  
Kyung-Jae Lee<sup>8</sup>,Seung-Beom Han<sup>9</sup>  
1.Korea University College of Medicine, Guro Hospital  
2.Kyung-Hee University Hospital  
3.Seoul National University Hospital  
4.Incheon Sungmin Hospital  
5.Samsung Medical Center  
6.Hallym University Sacred Heart Hospital  
7.Wonkwang University Hospital  
8.Dongsan Medical Center  
9.Korea University Anam Hospital

### Introduction:

Despite widespread use of ceramic-on-ceramic (CoC) in total hip arthroplasty (THA) during the past decades, little is known about why revisions are performed in hips with this contemporary bearing. The purposes of this study were to evaluate whether the reasons for CoC revision differ between forte and delta bearing couples.

### Materials & Methods:

We retrospectively reviewed 2045 patients (2194 hips) who underwent first revision THA during the same interval (1997-2015), in which 146 hips of CoC bearing were revised. There were 92 hips of third-generation (Forte) bearing and 54 hips of forth-generation (Delta) bearing. Average age was 58.0 years (range, 23 – 91 years) with male ratio of 54.8% (80/146). Postoperative mean follow-up period was 6.3 years (range, 2.0 – 16.8 years).

### Results:

Overall incidence of revision of CoC bearing was 6.7% (146/2194). The reasons for revision differed according to the bearing generation. When ceramic fracture, noise, incorrect ceramic insertion, progressive osteolysis, and unexplained pain were defined as directly related or potentially related to ceramic use, 41.3% (38 out of 92) of Forte bearing were considered to be revised due to bearing problem, but only 7.4% (4 out of 54) of Delta bearing were considered to be revised due to bearing problem. The most common etiology of revision was ceramic fracture in Forte bearing and periprosthetic infection in Delta bearing.

### Conclusion:

The reasons to first revision differed between Forte and Delta CoC bearing THAs. Main reasons to revision were directly related to bearing problem in Forte-THA whereas reasons to revision were not specific to bearing in Delta-THA.

**Osteolysis after Primary THA using First-Generation XLPE: Analysis using 3-Dimensional CT scan at follow-up of Fifteen years**

Shin-Yoon Kim<sup>1</sup>, Seung-Hoon Baek<sup>1</sup>,  
Jong-Min Lee<sup>2</sup>, Yeon Soo Lee<sup>2</sup>,  
Kwang-Hwan Kim<sup>1</sup>  
1. Kyungpook National University  
2. Catholic University of Daegu

**Background:**

We evaluated (1) wear rate, (2) prevalence and volume of osteolysis using 3D-CT scan, (3) other bearing-related complications, (4) HHS and survivorship free from revision at 15 years after THA using first-generation XLPE (1G XLPE).

**Methods:**

One-hundred sixty THAs were evaluated regarding bearing-related complication, HHS and survivorship. Among them, 112 hips underwent 3D-CT to analyze wear rate and osteolysis. All THAs were performed by single surgeon using cup of identical design, a 28-mm metal head and 1G XLPE (10 Mrad). Average age and follow-up was 57 and 15.2 years, respectively. Clinical evaluation included HHS and radiographic analysis was performed regarding stem alignment, cup anteversion and inclination angle, component stability, wear rate and osteolysis. Wear was measured using digital software. The prevalence and volume of osteolysis were also evaluated. Complications included XLPE dissociation/rim fracture, dislocation, periprosthetic fracture, infection, HO and any revision. Survivorship free from revision at 15 years was estimated.

**Results:**

Average inclination and anteversion angle of cups were 40.7° and 20.6°. Mean stem alignment was 0.1° valgus. Average bedding-in and annual wear rate was 0.085 mm and 0.025 mm/yr. Eleven hips (10%) demonstrated osteolysis. Of 160 THAs, 5 hips (3%) dislocated. Overall, bearing-related complications occurred in 16 hips (10%). Other complications included postoperative periprosthetic fracture in 4 (3%), infection and HO in 3 hips, respectively. Seven THAs (4%) were revised; recurrent dislocation in 5 and PJI in 2 hips. Average HHS at last follow-up improved from 47.7 preoperatively to 91.2 points ( $p < 0.001$ ). Estimated survivorship free from revision at 15 years was 95.6 %.

**Conclusion:**

THA using 1G XLPE demonstrated low wear rate as well as low incidence of osteolysis at average follow-up of fifteen years. Longer-term studies will be necessary to determine if XLPE will continue to demonstrate this improved osteolysis characteristics.

**Femoral stem survivorship in Dorr type A femurs following total hip arthroplasty using a cementless tapered wedge stem: A matched comparative study with type B femurs**

Chan-Woo Park, Sung-Hak Oh,  
Seung-Jae Lim, Youn-Soo Park  
Samsung Medical Center,  
Sungkyunkwan University  
School of Medicine, Seoul, Korea

**Introduction:**

There is a lack of understanding on relationship between femoral geometry and outcomes of total hip arthroplasty (THA) using a cementless tapered wedge stem. We investigated clinical and radiographic outcomes of THA using a cementless tapered wedge stem in patients with Dorr type A proximal femoral bone morphology, and compared with those of type B femurs at a minimum follow-up of 5 years.

**Methods:**

We analyzed 1089 hips (876 patients) that underwent THA using an identical cementless tapered wedge stem. We divided all femurs into 3 types (Dorr type A, B and C). Type A and B femurs were statistically matched with age, gender, body mass index and diagnosis by using the propensity score matching. Clinical, radiographic outcomes and stem survivorship were compared between the matched two groups. The mean follow-up was 84 months (range, 60-133 months).

**Results:**

A total of 611 femurs (56%) were classified as type A, 427 femurs (39%) as type B, and 51 femurs (5%) as type C. More radiolucent lines around femoral stems were found in type A femurs (7.8%) than in type B femurs (2.5%) ( $P < 0.001$ ). Patients with radiolucency experienced more thigh pain (31%) and groin pain (17%), and showed worse Harris hip score (86.2 points) compared to those with no radiolucency (93.0 points) ( $P < 0.001$ ). The stem survivorship of type A femur (97.8%) was lower than that of type B femur (99.5%) ( $P = 0.041$ ). The reasons for stem revision in type A femurs were periprosthetic fracture in 67%, aseptic loosening in 22 %, and deep infection in 11%.

**Conclusions:**

This study showed a higher rate of complications following THAs using a cementless tapered wedge stem in Dorr type A femurs than those performed in type B femurs. The most common reason for revision surgery for patients with type A femurs was periprosthetic femoral fractures.

**Mismatch between femur and tibia coronal alignment in the knee joint: classification of five lower limb types according to the mechanical alignment of the femur and tibia**

Yu-Hsien Lin<sup>1</sup>, Feng-Shuo Chang<sup>1</sup>, Kun-Hui Chen<sup>1</sup>,  
Kui-Chou Huang<sup>2</sup>, Kuo-Chih Su<sup>3</sup>  
1. Orthopedic Department, Taichung Veterans General Hospital  
2. Department of Orthopedic Surgery, Asia University Hospital  
3. Department of Medical Research, Taichung Veterans General Hospital.

**Background:**

Reasons for dissatisfaction with total knee arthroplasty (TKA) include unequal flexion or extension gap, soft tissue imbalance, and patella maltracking, which often occur in patients with a mismatch between femoral and tibial coronal bony alignment in knee joint or an extremely varus or valgus alignment. However, lower limb coronal alignment classification is based on only hip–knee–ankle angle (HKA) leading to oversight regarding a mismatch between femoral and tibial coronal alignment.

**Methods:**

214 normal triplefilms were reviewed retrospectively. HKA, mechanical lateral distal femoral angle (mLDFA), mechanical medial proximal tibial angle (mMPTA), angle between femoral anatomical axis and mechanical axis (AA-MA), and knee alignment angle (KAA) were measured. Subjects were categorized into one of five types based on the mechanical alignment of femur and tibia.

**Results:**

The mean HKA, mLDFA and mMPTA of all subjects were 1.2°, 87.3° and 85.8°, respectively. All subjects were classified into one of the five types with significant differences. About 61% of subjects showed neutral alignment, of which nearly 40% were type 2 (valgus of the femur and varus of the tibia with oblique joint line) and 60% exhibited neutral alignment with a neutral femur and tibia (type 1). In varus and valgus types, mismatch between mechanical angle of femur and tibia was common. Varus alignment, including types 3 (varus of the tibia) and 4 (varus of both the tibia and femur) alignment, was found in 30% of subjects. Valgus alignment (valgus of the femur) accounted for 8.9% of subjects.

**Conclusions:**

Mismatch between mechanical alignment of femur and tibia was common in varus and valgus alignment types. Joint line obliquity was also observed in 40% of neutral alignment population. This classification provides a quick and simple interpretation of femoral and tibial coronal alignment and more detailed guidance for preoperative planning for TKA than the traditional varus–neutral–valgus classification.

**Complications with medial opening wedge high tibial osteotomy**

Haijun Xu<sup>1</sup>, Junwen Wang<sup>1</sup>, Wusheng Kan<sup>1</sup>, Ye Huang<sup>2</sup>  
1. Puai Hospital of Tongji Medical College,  
Huazhong University of Science and Technology  
2. Beijing Jishuitan Hospital

High tibial osteotomy (HTO) is a well-established treatment option for patients with osteoarthritis of the medial compartment of the knee. Complication rates following opening wedge high tibial osteotomy (OWHTO) is an issue that has not been comprehensively addressed in current literature. This article will discuss some of these complications and present an overview of the current literature. Given the nature of the procedure significant potential complications exist, including neurovascular complications, compartment syndrome, fractures, infection, thromboembolic disease, delayed union and nonunion, under correction and recurrence of deformity, changing of the slope, and even finally converts to total knee arthroplasty. A number of techniques have been described, with the ultimate goal of obtaining appropriate alignment to provide pain relief and functional improvement over a long-term period. Careful surgical technique is necessary to achieve these goals with a minimal risk of complication. This article will discuss some of these complications and present an overview of the current literature. It will examine current thoughts on aetiology, techniques to try to avoid, and methods of treatment of these complications.

**Comparison of early outcomes between HTO and UKA for medial tibiofemoral osteoarthritis**

Xiaoling Fu, Rulin Deng, Ming Yin, Xigao Cheng  
Department of orthopaedics,  
the second affiliated  
hospital of NanChang University

**Background:**

Both unicompartmental knee arthroplasty (UKA) and high tibial osteotomy (HTO) are effective procedure for medial tibiofemoral osteoarthritis. However, which treatment is more beneficial is still controversial. The purpose of this study is to compare early clinical outcomes between them.

**Methods:**

Thirty-five patients were divided into the HTO (n=18) and UKA (n=17) groups. Clinical outcomes, including complications, range of motion (ROM), VAS score, HSS score were evaluated preoperatively, one week, 1, 3, 6 and 12 months postoperatively.

**Results:**

All patients were followed-up. ROM was better in HTO one week and 1 month postoperatively, but no significant differences 3, 6 and 12 months postoperatively. VAS and HSS score were better in UKA group at one week, 1 and 3 months postoperatively, but no difference at 6 and 12 months. One patient suffered from poor wound healing in UKA group, and two patients in HTO group. Three patients suffered from ecchymosis in HTO group, but none in UKA group.

**Conclusions:**

Good clinical outcomes were obtained in UKA and HTO group, UKA resulted in significantly better VAS and HSS score before 3 months postoperatively, fewer postoperative complications, but lower ROM before 1 month postoperatively.

**Modified kinematically aligned total knee arthroplasty**

Ku-chou Huang<sup>1</sup>, Yu-Hsien Lin<sup>2</sup>  
1. 亞洲大學附屬醫院 (Asia University Hospital)  
2. 臺中榮民總醫院 (Taichung Veterans General Hospital)

There is universal agreement that mechanically aligned TKA improves the quality of life of patients with end stage knee arthritis. However, international arthroplasty registries in the United Kingdom, Canada, and New Zealand have shown that 20% to 25% of patients with mechanically aligned TKA are dissatisfied. A recent study of normal limbs with weight-bearing radiographs showed that 32% of men and 17% of women had constitutional varus knees with a natural mechanical alignment larger than 3°. So routinely cut the knee perpendicular to the mechanical axis may cause unbalance flexion and extension gap, and need excessive soft tissue release to balance the knee which may cause unexplained pain postoperatively, and poor range of motion because the change of the alignment of the original knee. Accordingly, kinematically aligned TKA was implemented in 2006 as an alternative alignment strategy with the goal of reducing the prevalence of unexplained pain, stiffness, and instability and improving the rate of recovery, kinematics, and contact forces. Although the early functional results show promising and we still concern about varus position of tibial component may compromise the long term survival of the implant. In severe osteoarthritis cases, it's also difficult to estimate the bone loss in the femur and tibial condyle. We report our clinical results of modified kinematic aligned total knee arthroplasty. Surgical technique and tip will be also mentioned.

**Better Total Knee Arthroplasty Selection for Asian Patients: Quadriceps-Sparing TKA**Yansong Qi<sup>1,2</sup>, Yongsheng Xu<sup>1</sup>, Jiakuo Yu<sup>2</sup>  
1.Inner Mongolia People's Hospital  
2.Peking University Third Hospital**Background:**

The conventional total knee arthroplasty (TKA) is the most successful surgical procedure for relieving pain and improving poor function in patients of advanced arthritis. Recently, various minimally invasive surgery (MIS) TKA techniques have shown less postoperative pain, shorter hospital stays and quicker recovery postoperatively. Quadriceps-Sparing TKA is different from other minimally invasive approaches and only a few short-term follow-up studies have been published.

**Methods:**

We retrospectively reviewed the lower limb and the component alignments in 58 patients who received primary TKA between May 2010 and August 2012 (conventional TKA:28 knees; MIS-QS TKA:30 knees, respectively).

The hip-knee-ankle(HKA) angle of the lower limbs and the coronal components alignment were evaluated on full-length weight bearing radiographs preoperative and postoperative, and the sagittal components alignment were evaluated on lateral radiographs postoperative. All the measurements included HKA angle, coronal femoral component angle(CFCA), coronal tibial component angle(CTCA), sagittal femoral component angle(SFCA) and sagittal tibial component angle(STCA). The average ages, BMI values and gender proportion of the conventional and QS groups were no significant difference. The mean follow-up time was 74.8 months.

**Results:**

Loss rate is 14.3% and 20% in the MIS-QS TKA and the conventional TKA groups, respectively. Average preoperative HKA was  $7.2 \pm 6.0^\circ$  and  $6.9 \pm 6.8^\circ$ , respectively. There were no statistically significant differences in terms of preoperative HKA. Average postoperative HKA was  $2.8 \pm 2.9^\circ$  and  $2.6 \pm 3.9^\circ$  in the conventional and QS groups, respectively. There were no significant differences between the two groups with regard to the postoperative CFCA, CTCA, SFCA, and STCA values.

**Conclusions:**

MIS-QS TKA does not increase lower limb and the component malalignment in comparison with conventional TKA on mid- to long-term follow-up, it's a better surgical option for Asian patients.

**Keywords** Total Knee Arthroplasty; Minimally Invasive; Quadriceps Sparing; Conventional; Component Alignment

**Simultaneous management of severe gonarthrosis and ipsilateral tibia stress fracture by modulated total knee arthroplasty: a new classification and mid-term follow-up**Hui Li, Jianbing Ma  
Xi'an Hong Hui Hospital**Background:**

Management options are ill-defined for severe gonarthrosis and ipsilateral tibia stress fracture because of lack of proper classification. A new classification was proposed in this study.

**Methods:**

From Aug 2011 to Jan 2016, a total of 18 cases of knee arthritis combined with ipsilateral tibia stress fracture were included. The stress fracture was firstly classified into extra-articular and intra-articular fracture type. The intra-articular fracture type was then classified into segmental and marginal type. Extra-articular fractures were then subdivided into stable, unstable type. TKA with or without a long stem was applied to address these disorders. KSS scoring and radiograph were used to evaluate the treatment effect at regular intervals.

**Results:**

According to the new criteria 8 cases were classified as intra-articular marginal fracture, excision of fracture fragment followed by TKA was performed for this type. 1 patient was classified as intra-articular segmental fracture and modulated TKA with a long stem and metal augments were chosen to address this type disorder. 6 patients were classified as extra-articular stable fracture and TKA with a long stem were applied to treat these conditions. 3 patients were classified as extra-articular unstable fracture and TKA with a long stem combined internal fixation were chosen to address gonarthrosis and stress fracture simultaneously. At mean 12.3 months (from 8 to 21 months) follow-up, average Knee Society Score improved from 23.62 to 80.87; and average functional score improved from 18.75 to 67.75. All extra-articular fractures had united at the last follow-up with no complications of infection, joint instability, and patellar problems.

**Conclusion:**

This new classification provides excellent feasibility and facilitates clinical decision-making. Under the instruction of this classification, modulated TKA with or without internal fixation can be used successfully to treat severe gonarthrosis with proximal tibia stress fracture.

**One-Stage Total Knee Arthroplasty for Osteoarthritis Combining with Fracture Nonunion and Malunion around Knee Joint**Chun-Chieh Chen, Chin-Hsiang Chang, Hsin-Nung Shih  
Chang Gung Memorial Hospital at Linkou, Taiwan**Background:**

Femoral and tibial fracture is common in orthopedic practice. Nonunion and malunion may lead to lower limb deformity and patient's discomfort. The purpose of this work is to review our experience and study the feasibility and clinical results of one stage total knee arthroplasty (TKA) for the patient with osteoarthritis combining fracture nonunion and malunion around knee joint.

**Methods:**

From 2011 to 2014, we retrospectively retrieved data from the medical records to find out the patients who underwent one stage TKA for end-stage degenerative arthritis combining fracture nonunion and malunion around the knee joint. There were nine male and ten female, with an average age of 66 years. Eight of them had tibial deformities, and eleven had femoral deformities. The average angles of the femoral deformities were 13.5° in the coronal plane and 26° in the sagittal plane. Tibial deformities of 15° in the coronal plane and 28.5° in the sagittal plane were noted.

**Results:**

All patients were followed up for an average of 60.8 months. The average Hospital for Special Surgery (HSS) knee score was from 19.8 pre-operatively to 89.6 points at the time of the last follow-up; the range of knee motion improve from 43.7° preoperatively to 100.3° postoperatively. No complications such as infection, deep vein thrombosis, ligament instability, or component loosening were observed.

**Conclusions:**

One-stage TKA is a technically difficult but effective treatment for patients with osteoarthritis and fractures nonunion and malunion around the knee joint. It requires no additional incision for the corrective osteotomy or osteosynthesis, enables earlier rehabilitation, and minimizes complications of the osteotomy or osteosynthesis site. One-stage TKA restores limb alignment and facilitates fracture healing, with excellent outcome.

**A Novel Technique of Tibial Expansion Osteotomy in Type II Valgus Deformity via Total Knee Arthroplasty**Yuan Zhang, Xingwang Cheng, Zhibing Wang, Xia Zhang  
Department of Orthopedics, Xinqiao Hospital,  
Third Military Medical University, Chongqing, China, 400037.**Background:**

This study aimed to explore a new surgical technique for achieving gap balance by tightening the medial collateral ligament (MCL) in total knee arthroplasty (TKA) in patients with type II valgus deformity.

**Methods:**

Eighteen patients with type II valgus deformity were enrolled between November 2016 and May 2017. Following lateral soft tissue release, eight knees in seven patients had residual medial laxity. Sagittal splitting was performed 10–15 mm from the medial edge of the medial plateau in these patients and then expanded into a crack with an osteotome. The MCL was tightened by compressing the cancellous bone into the crack and broadening the medial plateau. Bone grafting was added gradually to achieve soft tissue balance in extension. Clinical scores and radiographic evaluations were performed pre- and postoperatively, with a mean follow-up of 7 months (range, 4–10 months).

**Results:**

The average preoperative mechanical axis was 15.4° (range, 11°–23°), and the average postoperative mechanical axis was 0.6° (range, 0°–2°). The postoperative Knee Society Score was 92.1 points (range, 88–95 points), while the Knee Function Score was 91.3 points (80–100 points). The average medial laxity was 4.9 mm, and the mean broadened width of the medial plateau was 14.9 mm. No complication from the technique occurred.

**Conclusion:**

This new surgical technique has demonstrated excellent early clinical results and could be an alternative choice for type II valgus knee arthroplasty.

**Application of hinged knee prosthesis in total knee arthroplasty for patients with severe valgus knee**Yakang Wang  
西安市红会医院**Objective:**

To investigate the feasibility, safety and efficacy of Endo-model hinge knee prosthesis in total knee arthroplasty for severe valgus knee.

**Methods:**

10 cases, 7 females and 3 males, 8 cases were unilateral, and 2 patients with rheumatoid arthritis were taken bilateral knee replacement, severe valgus knee deformity were taken total knee arthroplasty with hinge knee joint prosthesis. All patients were followed up in outpatient department after 1, 3, 6, 12, 24, 36 months. Femur-tibia angle(FTA), Knee Society score ( KSS ) , range of motion was applied to evaluate the functional recovery.

**Results:**

The postoperative follow-up was at 1,3,6,12,24,36 month, postoperative pain significantly reduced, knee deformity correction, stability and function all is good, straighten all reached 180 °, active flexion can reach 95~125°, average 110 °. KSS knee score was improved from 34.25 points before operation to 86.73 points after operation, lower limb deformity and joint function become good. Postoperative X-ray showed good alignment, average FTA 6.62 °, prosthesis position is good, bearing prosthesis reliable. The measurement of the alignment deviation is less than 2 °, the average 1.3 °.

**Conclusion:**

Endo-model rotational hinge knee prosthesis was used to severe valgus knee effect is satisfactory. The function of knee joint was significantly improved after operation. However, the indications need to be strictly mastered, and long-term follow-up is still required.

**Floating Bearing TKA Shows High Failure Rate at Midterm Follow Up**Jae-Hyuk Choi, Ki-Mo Jang, Woo-Young Jang,  
Seok-Ha Hong, Jae-Kyun Jung, Seung-Beom Han  
Korea University Anam Hospital**Background:**

The mobile bearing TKA was developed to overcome disadvantages of fixed-bearing TKA. However, the first generation MB TKAs were failed to improve clinical outcomes and longevity compared to fixed - bearing TKA. The purpose of this study was to evaluate the two different type of mobile-bearing TKAs with respect to clinical outcomes and complications at mid-term follow up.

**Method:**

We retrospectively evaluated 230 patients who underwent navigation-assisted mobile bearing total knee arthroplasty from 2003 to 2012 for advanced osteoarthritis and osteonecrosis. CR and PS TKR groups consisted of 129 and 101 knees, respectively. Mean follow-up time was 86 months (48 to 163). Clinical outcomes were evaluated preoperatively and the last follow-up, including HSS knee score and ROM. Radiographic assessments were performed, including loosening of prosthesis and mechanical alignment of the lower limb.

**Results:**

At a mean follow-up of 86 months (48 to 163), the mean HSS knee scores improved significantly from 62.5 points to 90.7 points ( $p < 0.001$ ). The mean ROM improved significantly from 119.4 to 126.9 ( $p < 0.001$ ). There was no statistically significant differences in between floating platform group and rotating platform group regarding HSS Knee scores (90.5 vs 90.9  $p=0.713$ ) and ROM (127.4 vs 128.7  $P=0.354$ ).

Nine knees (3.9%) had mechanical complications required revision, eight in between floating platform group and one in rotating platform group. (FP vs RP: 6.2 % vs 1 %,  $P=0.041$ ). The reason for revision was aseptic loosening in six, bearing breakage in two, and an instability in one.

**Conclusion:**

We found higher mechanical failure rate of the floating bearing TKA over the rotating-platform TKA at mid-term follow-up. There was no statistically significant difference between the two groups with respect to clinical outcomes.

**Comparing the Outcome of Circumferential Patellar Denervation in Unresurfaced Simultaneous Bilateral Total Knee Arthroplasty**

Hendy Hidayat<sup>2,1</sup>, Nicolaas Budhiparama<sup>2</sup>,  
Nadia Nastasha Ifran<sup>2</sup>, Kiki Novito<sup>2</sup>,  
Imelda Lumban Gaol<sup>2</sup>, Rob Nelissen<sup>3</sup>  
1. Medistra Hospital;  
2. Nicolaas Institute;  
3. Leiden University

**Background:**

Anterior knee pain (AKP) has been one of the factors for patient's dissatisfaction after Total Knee Arthroplasty (TKA) with prevalence between 4-49%. Patellar denervation with electrocautery has been used as a strategy to prevent AKP. Several studies have indicated that patellar denervation can reduce the incidence of AKP, while others have found no significant effect. While most studies were conducted on unilateral TKA, our study was done on simultaneous bilateral TKA in Southeast Asia population. This study aims to investigate whether there is any difference in pain relief and functional outcomes between intra-operative circumferential cauterized and non-cauterized patella on unresurfaced simultaneous bilateral TKA. We hypothesized that there will be no significant difference in the outcome between the two groups.

**Methods:**

Forty-three patients (86 knees) were included in this study. Surgery was performed by a single experienced surgeon with cruciate retaining prosthesis and fixed bearing insert. Circumferential patellar cauterization was performed on right knee regardless of severity of the arthritis. Left patella was treated with debridement and osteophytes excision only without cauterization. Evaluations were done with minimum of 1-year follow up by assessing ROM, VAS, KOOS score, Oxford Knee Score (OKS), and Kujala Anterior Knee Pain Score (AKP).

**Results:**

No differences found in clinical preoperative characteristics and radiologic severity (Kellgren-Lawrence grading) between the groups. Mean ROM, VAS, KOOS, OKS, AKP were significantly improved between before and after surgery on both groups. However, no significant differences were found between the two groups.

**Conclusions:**

No differences were found in ROM, pain, and functional score outcomes between circumferential cauterized and non-cauterized patella in unresurfaced simultaneous bilateral TKA at minimum of 1 years follow up. Long-term evaluation with alignment needs to be done to show any postoperative difference results between cauterized and non-cauterized patella.

**Does Patient-Specific Instrumentation Improve Surface Kinematics in Patients After Minimally-Invasive Total Knee Arthroplasty During Isolated Knee Exercises?**

Kao-Shang Shih<sup>1</sup>, Yang-Chieh Fu<sup>2</sup>, Hsuan-Lun Lu<sup>2</sup>,  
Song-Ying Li<sup>2</sup>, Cheng-Chung Lin<sup>3</sup>, and Tung-Wu Lu<sup>2, 4</sup>  
<sup>1</sup>Department of Orthopedics,  
Shin Kong Wu Ho-Su Memorial Hospital,  
Taiwan, R.O.C. <sup>2</sup>Institute of Biomedical Engineering,  
National Taiwan University, Taiwan,  
R.O.C. <sup>3</sup>Department of Electrical Engineering,  
Fu-Jen Catholic University, Taiwan,  
R.O.C. <sup>4</sup>Department of Orthopaedic Surgery,  
School of Medicine,  
National Taiwan University, Taiwan, R.O.C.

Patient-specific instrumentation for TKA (PSI-TKA) has thus been developed to accurately restore the knee axis in minimally invasive surgery TKA (MIS-TKA). However, the efficacy of this new approach in restoring joint contact patterns has not been determined. The current study thus aimed to compare in vivo the surface kinematics of MIS-TKA and PSI-TKA during isolated knee exercise using 3D fluoroscopy technology. Ten patients with MIS-TKA (posterior stabilized design) and ten with PSI-TKA participated with informed written consent. Each subject performed quiet standing to define joint neutral positions and then isolated knee flexion and extension at seated posture while under the surveillance of a bi-plane fluoroscopy system. Kinematics the TKA for each subject were obtained by registering to the fluoroscopy image at each image frame via a validated 2D-to-3D registration method. During isolated knee flexion/extension, MIS-TKA and PSI-TKA showed similar general patterns of the contact point trajectories but with different magnitudes for the medial and lateral compartments. Compared to MIS-TKA, PSI-TKA showed anterior translations of about 5 mm in the medial compartment and posterior translations of about 5 mm in the lateral compartment both throughout the knee flexion range. Compared to MIS-TKA, patients with PSI-TKA showed more posterior contact trajectories in the lateral compartment while less anterior in the medial, which may be related to a more accurate restoration of the knee rotation axis with PSI-TKA. In conclusion, the PSI-TKA may have a better long-term performance because of a better reconstruction of the knee contact patterns.

**Short - term clinical efficacy study of unicompartmental knee arthroplasty aided by 3D printing osteotomy guide plate**Yu Nie  
Fuyang people's hospital**Abstract:**

**Objective** To evaluate the short-term clinical efficacy of 3D printing osteotomy guide plate in unicompartmental knee arthroplasty (UKA).

**Methods:**

A retrospective analysis of data from 23 patients (24 knees) who underwent UKA aided by 3D printing osteotomy guide plate from January to April 2017 was analyzed retrospectively. The operative time and the amount of bleeding were recorded. The knee joint activity after one month, the improvement of knee joint score of American Special Surgery Hospital (HSS), and the occurrence of postoperative complications were evaluated.

**Results:**

The operation time was  $76.2 \pm 17.1$  min and the bleeding volume was  $305.5 \pm 108.4$ ml. The degree of preoperative knee movement was  $111.1 \pm 7.2^\circ$ , and the postoperative knee movement was  $121.3 \pm 6.9^\circ$ , the difference was statistically significant ( $P < 0.05$ ). Preoperative HSS score was  $66.1 \pm 4.5$  points, postoperative HSS score of  $83.4 \pm 4.6$  points, the difference was statistically significant ( $P < 0.05$ ).

**Conclusion:**

The short - term clinical efficacy of UKA aided by 3D printing osteotomy guide plate were satisfactory. Surgical operation is simple and accurate, shortening UKA learning curve.

**Mid-Term Outcome of Patient Specific Instrumentation in Total Knee Arthroplasty**Jerry Yongqiang Chen, Pak Lin Chin, Hee Nee Pang,  
Darren Tay, Shi-Lu Chia, Ngai Nung Lo, Seng Jin Yeo  
Singapore General Hospital**Background:**

Patient Specific Instrumentation (PSI) may represent the next promising evolution in the surgical technique for total knee arthroplasty (TKA). However, there is a paucity of literature reporting mid-term outcomes of PSI surgery. This study aims to compare the results of PSI surgery with conventional TKA.

**Methods:**

Power analysis was done prior to the conduct of this study to determine the required sample size. Sixty patients diagnosed with osteoarthritis of the knee at a tertiary hospital were prospectively recruited and divided into two groups: 1) PSI surgery, based on pre-operative magnetic resonance imaging scans; 2) Conventional TKA. A senior surgeon, who was well versed in both techniques, performed all the surgeries using posterior stabilized implants. The patients were followed up for five years using Knee Society Function Score (KSFS), Knee Society Knee Score (KSKS), Oxford Knee Score (OKS), Physical Component Score (PCS) and Mental Component Score (MCS) of Short-Form 36.

**Results:**

One patient in the PSI group had his surgery cancelled as he developed pulmonary embolism prior to his surgery. There was no difference in patients' age, gender and Body Mass Index between the two groups (all  $p > 0.05$ ). The duration of surgery was  $58 \pm 7$  minutes for both groups ( $p = 0.754$ ). There were no superficial or deep infections in either group and none of the patients required revision surgery. The KSFS, KSKS, OKS and MCS at five years follow up were comparable between the two groups (all  $p > 0.05$ ). The PCS in the PSI group was  $5 \pm 2$  points worse at five years after surgery compared to the Conventional group ( $p = 0.025$ ).

**Conclusions:**

This study represents the longest clinical follow up available for PSI surgery. The authors conclude that PSI surgery does not confer better mid-term outcomes when compared to conventional TKA.

**The role of thromboelastography in monitoring the changes of coagulation function in the ERAS of arthroplasty**

Ning Hu, Wei Huang, Xi Liang, Leilei Qin, Jianye Yang,  
Feilong Li, SiZheng Zhu, JiaWei Wang  
The First Affiliated Hospital  
of Chongqing Medical University

**Objective:**

To study the role of TEG in dynamic monitoring of coagulation function in the perioperative period of arthroplasty for ERAS. Changes in the coagulation function after surgical trauma often lead to bleeding or deep vein thrombosis. Thromboelastograph (TEG) is a new test for evaluation of hemostasis, which has been widely used in various fields of the clinic. Whether it can monitor the perioperative coagulation function of patients and guide clinical prevention of bleeding or deep vein thrombosis is still inconclusive in the Enhanced Recovery after Surgery (ERAS) of arthroplasty.

**Methods:**

We retrospectively reviewed our institutional database for 110 patients who underwent primary total hip or knee arthroplasty from January 2017 to January 2018. TEG, conventional coagulation tests and blood routine were performed pre-operatively and on post-operative days 1, 3, 5 and 7. We analyzed trend of coagulation function and compared the correlations.

**Results:**

The hip and knee joint groups had a high consistency in the trend of coagulation function ( $P < 0.05$ ). Compared with preoperative, there are shorter R values and increased CI values on the postoperative day 1, 3, 5, and the difference was statistically significant ( $P < 0.005$ ). The changes of R values and increased CI values were highly consistent with platelet count. Preoperative MA values were in the normal range, and the MA values of day 1, 3, 5 were decreased. The changes of MA values were highly consistent with platelet count. There were statistical differences ( $P < 0.05$ ) in CI, R, MA, and platelet counts between bleeding group (20 cases) and the non-bleeding group (90 cases).

**Conclusions:**

TEG was an effective way to monitor the changes of perioperative coagulation function in patients with ERAS undergoing revision hip arthroplasty. Individualized anticoagulation can be developed with TEG.

**State-of-the-Art evidence-based review of aspirin for thromboprophylaxis in modern elective total hip and knee arthroplasty**

ZHIMIN YING, HAOBO WU, BIN HU, SHIGUI YAN  
SECOND AFFILIATED HOSPITAL  
OF ZHEJINAG UNIVERSITY

**Objective:**

There is uncertainty regarding the optimal means of thromboprophylaxis following total hip and knee arthroplasty (THA, TKA). This systematic evidence-based review presents the evidence for acetylsalicylic acid (aspirin) as a thromboprophylactic agent in THA and TKA and compares it with other chemoprophylactic agents.

**Methods:**

A search of literature published between January 2004 and September 2017 was performed in the database including NHS, TRIP, Cochrane, MEDLINE and EMBASE in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.

**Results:**

A total of 14 studies were eligible for inclusion including 5 level I evidence studies and 9 level III evidence studies; Evidence from one good quality randomized controlled trial (RCT) showed no difference

in rates of venous thromboembolism (VTE) in patients given aspirin or low molecular weight heparin (LMWH) following TKA. There was insufficient evidence from trials with moderate to severe risk of bias being present to suggest aspirin is more or less effective than LMWH, warfarin or dabigatran for the prevention of VTE in TKA or THA. Compared with aspirin, rates of asymptomatic deep vein thrombosis (DVT) in TKA may be reduced with rivaroxaban but insufficient evidence exists to demonstrate an effect on incidence of symptomatic DVT. Compared with aspirin there is evidence of more wound complications following THA and TKA with dabigatran and in TKA with rivaroxaban.

**Conclusions:**

The results suggest aspirin may be a suitable alternative to other thromboprophylactic agents following THA and TKA. Further investigation is required to fully evaluate the safety and efficacy of aspirin.

**The application of thrombelastogram in the risk stratification for thromboembolism prophylaxis after joint arthroplasty**Qiu Jian Zheng, Zhantao Deng  
Guangdong General Hospital**Background:**

Venous thromboembolism (VTE) is a well-recognized complication after arthroplasty and the selection of a prophylaxis regimen is a balance between efficacy and safety. This study was aimed to investigate the use of thrombelastogram (TEG) in the risk stratification protocol for VTE prophylaxis in arthroplasty.

**Methods:**

This was a prospective study of patients undergoing knee or hip arthroplasty. Exclusion criteria included a current deep vein thrombosis, history of pulmonary embolism, and planned multiple surgeries. Patients were random allocated into either "routine" or "selective" thromboembolism prophylaxis groups. In "routine" group, patients received rivaroxaban for 4 weeks. In "selective" group, hypercoagulability was assessed by TEG. Only those in hypercoagulability received thromboembolism therapy as "routine" group while others only use physical methods.

**Results:**

A total of 197 patients were enrolled (99, 50.2% "routine"; 98, 49.8% "selective"). In selective cohort, only 29 (29.6%) patients were hypercoagulability and received thromboembolism therapy. The rate of symptomatic VTE within 6 months postoperatively was 2.0% (n=2) in the selective vs 3.0% (n=3) in the routine cohort (P=1.000). The rate of major bleeding events (3.1% vs 10.1%, P=0.047) and blood transfusion (10.2% vs 35.4%, P<0.01) were significantly lower in selective vs routine cohort. The rate of wound healing, infection and ecchymosis were similar in the two cohort.

**Conclusions:**

The application of thrombelastogram as risk stratification for selective thromboembolism achieved a low overall incidence of symptomatic VTE while allowing the avoidance of aggressive anticoagulation in 70% patients.

**Effect of combination using of tranexamic acid for reducing blood loss after aged total knee arthroplasty**Kuo Sun  
The Second Affiliated Hospital of Nanchang University**Objective:**

The aim of this study was to evaluate the effect of combination of intravenous and topical tranexamic acid in patients who undergo primary total knee arthroplasty.

**Methods:**

60 patients from Jan. 2013 to Jun. 2016 who were scheduled to undergo primary total knee arthroplasty were randomized divided into two groups: the intravenous tranexamic group (intravenous group, n=30) and the combination group (n=30). All the patients had blood routine examination, coagulation routine examination and the color Doppler flow imaging of the lower limbs. The intravenous group were intravenously given 1g TA 10 minutes before the surgery, while the combination group were given 1 g TA before operation, medullary cavity hemostatic 10 seconds was filled with TA gauze and then given in the articular cavity after operation, followed by temporary drainage tube closure for 6h after operation. The two groups of patients with total blood loss, postoperative 24 hours and 72 hours Hb, APTT, PT, D-dimer and thrombosis events occur rate were observed and recorded.

**Results:**

The total blood loss and drainage volume in combination group were significantly less than those in intravenous group (P<0.05); the postoperative 24 hours and 72 hours hemoglobin values of combination group were significantly higher than those of intravenous group (P<0.05); the differences of other indexes had no statistical significance (P>0.05). All the cases did not have severe complications.

**Conclusion:**

This study showed that combination of intravenous and topical TA in TKA can effectively decrease total blood loss and number of blood transfusions required without increasing the risk of deep vein thrombosis or/and pulmonary embolism.

**Efficacy and safety of knee standardized home exercise program comparing supervised physiotherapy to improve mobility and quality of life after Total knee arthroplasty**Tianyang Xu, Guodong Li  
Tenth People's Hospital  
of Tongji University**Objects:**

In the present study, we introduced a knee flexion enhanced standardized home exercise program assisted by a low stool and evaluate efficiency of this method in the management of rehabilitation after TKA.

**Methods:**

Patients were recruited from July 2014 and December 2015, and randomized into two groups, a knee flexion enhanced standardized home exercise program group (group KFEH) and commonly-used supervised physiotherapy group (group SPT). Outcomes were evaluated by observing the joint function with the Knee Society score (KSS), Visual Analogue Scale (VAS), the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score, and ROM assessment at selected time points (pre-operation and 1 week, 1 month, 3 month, 6 month and 1 year following post-operation).

**Results:**

At last, we observed pain and functional improvements in both groups. Noninferiority was shown 12 months postoperatively for clinical outcomes except group KFEH had better ROM range at 1 month ( $P < 0.01$ ). The absolute value of WOMAC and KSS were slight better in group KFEH without significant difference, and there was no difference about VAS between two groups as well as complication incidence rate. Additionally, home program would save patients' times and decrease economic burden. Patients would save 14 times postoperative rehabilitation in outhospital service, and cut down at least 782 RMB in total.

**Conclusion:**

Taking the rehabilitation and economical efficiency, we recommend knee flexion Enhanced home exercise program for TKA rehabilitation management.

**The safety and efficacy of cocktail therapy in total knee arthroplasty**Jingtao Sun, Songtao Cai, Xuan Wei, Shaohua Wang  
郑州市骨科医院**Objective:**

To investigate the safety and efficacy of cocktail therapy in total knee arthroplasty.

**Methods:**

120 cases of primary total knee arthroplasty in our hospital in June -2013 May 2012 were randomly divided into 60 cases in the experimental group and 60 in the control group. Before operation, the cocktail of the knee joint was injected with cocktail 30ml, in the experimental group, the cocktail of the knee joint was injected into the posterior articular capsule of the knee joint. A cocktail 20ml was injected around the incision of the knee before the closure of the incision, and the control group was injected with physiological saline 30 ml in the posterior articular capsule of the knee joint. The two groups of the same analgesic treatment were given after the operation. The knee joint activity of third, seventh, fourteenth days after the operation and the VAS score were counted respectively.

**Results:**

The knee joint activity of the experimental group was significantly higher than that of the control group at third, seventh days ( $P < 0.05$ ). The knee joint activity of the experimental group was less than the control group ( $P > 0.05$ ) on the fourteenth day after the operation ( $P > 0.05$ ), but on the VAS score, the experimental group was significantly lower than the control group at third days after the operation, the difference was statistically significant ( $P < 0.05$ ). However, on the seventh, fourteenth day after operation, there was no significant difference in knee activity between the experimental group and the control group ( $P > 0.05$ ).

**Conclusion:**

The application of cocktail therapy in total knee replacement can obtain satisfactory degree of joint activity in the early stage after total knee replacement, reduce early joint pain and reduce the conflict of postoperative functional exercise, which is worthy of clinical application.

**Efficacy and safety of tranexamic acid in geriatric hip fracture with hemiarthroplasty: a prospective cohort study**Qinsheng Hu, Jinwei Xie, Bin Shen, Jing Yang,  
Zongke Zhou, Pengde Kang, Fuxing Pei  
West china hospital

## Background:

To examine the safety and efficacy of tranexamic acid (TXA) in geriatric hip fracture patients.

## Methods:

This prospective study of hip fracture patients undergoing hemiarthroplasty between January 2013 and September 2016 involved 289 patients who received 15 mg/kg TXA before surgery and 320 who received no TXA. All patients underwent a fast-track program. The primary outcome was transfusion requirement. Secondary outcomes included blood loss, hemoglobin (Hb) level, VTE and length of hospital stay (LOH). Multivariate logistic regression and meta-analysis of the literature were also performed to control for confounding factors.

## Results:

The transfusion rate was lower in TXA group (8.65% vs 24.06%, OR 0.299,  $p < 0.001$ ). Mean Hb level was higher in TXA group on postoperative day 1 ( $111.70 \pm 18.40$  vs  $107.29 \pm 18.70$  g/L,  $p = 0.008$ ) and 3 ( $108.16 \pm 17.25$  vs  $104.22 \pm 15.16$  g/L,  $p = 0.005$ ). A higher proportion of TXA patients began to ambulate within 24 h after surgery (37.02% vs 26.25%,  $p = 0.004$ ), and their LOH was shorter ( $11.82 \pm 4.39$  vs  $15.96 \pm 7.30$  days,  $p = 0.003$ ). TXA did not increase risk of DVT (OR 0.70, 95%CI 0.25 to 1.97). Logistic regression showed that, after adjusting for covariates, TXA was associated with 67% lower risk of transfusion (OR 0.327, 95%CI 0.197 to 0.544), and a similar result was obtained in meta-analysis of unadjusted data from the present study and the literature (OR 0.33, 95%CI 0.25 to 0.43).

## Conclusion:

TXA appears to be safe and effective for reducing blood loss and transfusion in geriatric hip fracture patients undergoing fast-track hemiarthroplasty.

**Effect of tourniquet on perioperative period of total joint replacement**Bowen Ye, Dapeng Han, Guilin Ouyang  
Shanghai Guanghua Hospital of Integrated  
Traditional Chinese and Western Medicine

## Background:

In the primary total knee arthroplasty, the use of tourniquet can make the surgical field relatively clean and reduce the operation time. Non-use of tourniquets is beneficial to hemostasis of wound surface, reducing ischemia reperfusion damage, avoiding tourniquet reaction, and reducing the probability of occurrence of venous thrombosis, articular hematoma and postoperative wound complications. At present, a number of studies have shown that whether lower limb tourniquets are used in total knee arthroplasty and their effects on postoperative course of disease are still controversial.

## Methods:

From 2016 to 2017, 62 consecutive patients who underwent routine total knee arthroplasty were randomly divided into two groups and were treated with or without a tourniquet. There were no significant differences in patient baseline characteristics between the two groups. We compared the two groups of patients in terms of postoperative bleeding, postoperative CRP and ESR. We also compared the operation time and length of stay.

## Results:

None of the patients showed poor wound healing, lower extremity deep venous thrombosis or other complications. The operation time was shorter in the tourniquet group than in the control group ( $P < 0.05$ ). The length of stay was longer in the tourniquet group than in the control group ( $P < 0.05$ ). There was no significant difference in the postoperative CRP and ESR between the two groups ( $P > 0.05$ ).

## Conclusions:

Tourniquet can reduce operation time of total knee replacement surgery, but is associated with greater blood loss.

**Perioperative sleep disturbance in total hip and knee arthroplasty managed with enhanced recovery protocol - a preliminary report**Yunchao Shao, Xia qing 夏庆,  
Wang xiaofeng 王晓峰, Wang yuzhu 王玉珠  
Zhongshan Hospital, Fudan University**Objective:**

Perioperative sleep disturbance is common in patients undergoing total joint arthroplasty. The aim of this study was to prospectively assess sleep quality before and after primary total joint replacement (TJA).

**Methods:**

A total of 30 patients completed questionnaires from preoperatively to 8 weeks afterwards who underwent total hip and knee replacement in one clinic team. Sleep quality was measured using the Chinese version of Pittsburg Sleep Quality Index (CPSQI) and Epworth Sleepiness Scale (CESS). Pain was measured via visual analog scale (VAS).

**Results:**

Sleep disturbance worsened from the preoperative baseline during the first 2 weeks postoperatively, as CPSQI scores significantly increased at 2 weeks ( $P=0.001$ ), which could be attributed to significant decreasing of sleep duration and efficiency. However, there were significant improvement in sleep quality at 8 weeks postoperatively as compared with preoperative CPSQI levels ( $3.29 \pm 1.29$  vs  $7.23 \pm 2.97$ ;  $P=0.008$ ), where average CPSQI score less than 5 is indicative of normal sleep. CESS scores were also decreased significantly from baseline to 4 and 8 weeks postoperatively, and correlation existed between sleep quality and CESS. Furthermore, VAS scores significantly decreased from baseline over all time points in whole postoperative period.

**Conclusions:**

Our findings indicate that transient sleep disturbance is common in the early postoperative period but with subsequently significant improvement by postoperatively 8 weeks compared to reported data with traditional management. Perioperative sleep disturbance in TJA managed with enhanced recovery protocol can be an accelerated sleep quality improvement process.

**Direct anterior minimally invasive Total Hip Arthroplasty: the role of an 'Enhanced Recovery' pathway**Wenbo Wang, Ning Liu, Haojun Wang, Tao Zhang  
First affiliated hospital of HMMU**Background:**

Total hip arthroplasty (THA) can markedly improve the quality of life of patients previously impaired by the arthritic process. Direct Anterior Minimally Invasive Surgery (DAMIS) is conducted for hip arthroplasty in anterior incision with new surgical instruments and traction table designed specifically. In this study, We assessed the difference in hospital based and early clinical outcomes between the DAMIS and the posterior approach in patients who undergo THA

**Methods:**

A total 176 patients met the inclusion criteria who underwent unilateral total hip arthroplasty from February 2017 to March 2018 in our department were included in this prospective study. The patients were randomly categorized into two groups, 85 cases (DAMIS group) were compared with 91 cases (PL group) who had undergone a traditional posterolateral approach. Demographic and perioperative data, including age, sex and BMI of the patients, the length of operation, blood loss, volume of drainage, complications after surgery, hospital stay, and Harris score in 6 weeks postoperatively were collected and calculated for statistical analysis.

**Results:**

Compared with PL group, significant differences in blood loss and length of hospital stay had been found in DAMIS group. Since more patients in the DAMIS group achieved a planned discharge target of three days post-operatively (68% vs 56%,  $p=0.007$ ). There was no significant difference in general conditions of patients, length of operation, volume of drainage and rate of complications. Importantly, in first 6 weeks post-op, the Harris score was markedly higher in DAMIS group (86.5 vs 80.2,  $P=0.032$ ).

**Conclusion:**

Proceeding from the view of enhanced recovery after surgery in early stage postoperatively, we conclude that there is advantage in clinical outcomes in patients undergoing THA by DAMIS.

**Effect of early intensive rehabilitation after total knee replacement surgery of RA male patient. A case study.**

hsienYeh chou<sup>1,2</sup>, ShihYing Cheng<sup>1,2</sup>,  
YuTu Ching<sup>1,2</sup>, RongTsan Hong<sup>1,2</sup>  
1.FUQING PINGAN ORTHOPAEDIC HOSPITAL  
2.JJOH Kaohsiung .Taiwan

**Background:**

Autoimmune disease are illness that occur when the tissue are mistakenly attacked by their own immune system. Rheumatoid arthritis (RA) is a long-term autoimmune disease that primarily affects multiple joints. It causes joint pain, loss of joint function, joint stiffness, and joint swelling, finally, joint deformity. Chronic inflammation of rheumatoid arthritis can cause permanent joint destruction, deformity and disability.

**Methods:**

This 70 y/o male presented with rheumatoid arthritis in multiple joint including bilateral wrists, fingers, hips, knees and even spinal joints. Progressive kyphotic deformity of spine, hip flexion, knee contracture and bilateral thigh muscle atrophy was noted. Due to his positive spirit and his strong willingness to take care of himself, he asked for surgical intervention as he wish to walk again. After the operation, he underwent an intensive rehabilitation program including posture change training, continuous passive motion (CPM), muscle strengthening, ambulation training three times a day for 1 week. This is what I reported for this case.

**Results:**

He had a good outcome in knee range of motion, legs function and ambulation.

**Conclusion:**

Early intensive rehabilitation can promote patient's lower extremities function after TKR.

**Predictors of Treatment Failure After 2-Stage Reimplantation for Infected Total Knee Arthroplasty: A 2- to 10-Year Follow-Up**

FengChih Kuo<sup>1</sup>, Yu-Der Lu<sup>1</sup>, Kerri Bell<sup>2</sup>, Jun-Wen Wang<sup>1</sup>,  
Jih-Yang Ko<sup>1</sup>, Ching-Jen Wang<sup>1</sup>, Mel S Lee<sup>1</sup>  
1. Kaohsiung Chang Gung Memorial Hospital  
2. Rothman Institute at Thomas Jefferson University Hospital

**Background:**

The aim of this study is to identify risk factors which may lead to treatment failure following 2-stage reimplantation for chronic infected total knee arthroplasty (TKA).

**Methods:**

We retrospectively reviewed 106 patients (108 knees) who underwent consecutive 2-stage revision for chronic PJI of the knee at our institution between January 2005 and December 2015. A total of 31 risk factors, including patient characteristics, comorbidities, surgical variables, and microbiology data, were collected. Kaplan-Meier survival and Cox regression analyses were used to calculate survival rates and adjusted hazard ratios (HRs) of treatment failure.

**Results:**

Within the cohort, 16 of the 108 2-stage reimplantations (14.8%) had treatment failure. The treatment success for 2-stage reimplantation was 91% (95% confidence interval [CI] 0.8-1.0) at 2 years and 84% (95% CI 0.8-0.9) at 5 and 10 years. Multivariate analysis provided the strongest predictors of treatment failure, including body mass index  $\geq 30$  kg/m<sup>2</sup> (adjusted HR 9.3, 95% CI 2.7-31.8,  $p < 0.001$ ), operative time  $> 4$  hours (adjusted HR 11.3, 95% CI 3.9-33.1,  $p < 0.001$ ), gout (adjusted HR 13.8, 95% CI 2.9-66.1,  $p = 0.001$ ), and the presence of Enterococcus species during resection arthroplasty (adjusted HR 14.1, 95% CI 2.6-76.3,  $p = 0.002$ ).

**Conclusion:**

Our study identified 4 potential risk factors that may predict treatment failure following 2-stage revision for chronic knee PJI. This finding may be useful when counseling patients regarding the treatment success and prognosis of 2-stage reimplantation for infected TKA.

**Predictive value of NLR, PLR and LMR in the assessment of acute osteoarthritis and acute infection after total joint arthroplasty**

Guanglei Zhao, Jin Wang, Jun Xia, Siqun Wang,  
Yibing Wei, Feiyan Chen, Gangyong Huang,  
Jie Chen, Jingsheng Shi  
Fudan University Huashan hospital

**Object:**

The purpose of this study was to the predictive value of NLR, PLR and LMR in patients with acute infection after total joint replacement.

**Method:**

During the period from January 2008 to December 2016, we collected 104 cases of clinical data from Huashan Hospital affiliated to Fudan University, including 26 acute infection patients after TJA, TJA without infection in 78 cases paired with those acute infection patients. Collect the corresponding clinical data and related data.

**Result:**

NLR, PLR and LMR returned to normal within 2 weeks after operation in control group and acute infection group after total joint replacement. Most of them returned to the preoperative level around the seventh day. In the acute infected group, NLR and PLR were significantly increased during the incubation period of infection or infection, LMR was significantly reduced, although 61.5% (16/26) of the patients had normal leukocyte levels.

**Conclusion:**

It was found that PLR and LMR returned to their normal levels within 2 weeks after arthroplasty. Compared with traditional CRP and ESR, PLR and LMR have certain clinical value in judging acute postoperative infection.

**Single-stage revision with direct intra-articular antibiotic infusion for culture-negative periprosthetic joint infection - A comparative study**

Baochao Ji, Xiaogang Zhang, Li Cao  
新疆医科大学第一附属医院

**Background:**

It is widely accepted that single-stage arthroplasty could achieve good results only if organisms could be isolated preoperatively. In this situation, we wondered if patients could be treated effectively for their culture-negative periprosthetic joint infection (PJI) with single-stage revision combined with direct intra-articular antibiotic infusion.

**Methods:**

A retrospective analysis between August 2009 and April 2016 included 51 patients with culture-negative PJI who underwent single-stage revision combined with direct intra-articular antibiotic infusion, including (1) 1 g vancomycin received intravenously every 12 hours for an average of 14 days (12 to 19 days); and (2) a direct intra-articular infusion of 0.5 g imipenem and 0.5 g vancomycin alternately used in the morning and afternoon, respectively. The infection control rate and clinic outcome in the culture-negative patients were compared with that of 192 culture-positive PJIs.

**Results:**

Of the 51 patients with culture-negative results, 46 patients (90.2%) had a satisfactory outcome and required no additional surgical or medical treatment for recurrence infection at an average of 53.2 months of follow-up (range, 24 to 72 months). No significant difference was observed between the culture-negative and culture-positive PJIs (90.2% versus 94.3%,  $p=0.297$ ). The mean Harris hip score (HHS) of the culture-negative group was 79 points, and no significant difference was found when compared with culture-positive cases (79 versus 81,  $p=0.359$ ). However, the culture-negative group showed an inferior mean Hospital for Special Surgery (HSS) knee score compared with the culture-positive group (76 versus 80,  $p=0.027$ ).

**Conclusions:**

Single-stage revision with direct intra-articular antibiotic infusion can be fairly effective in the treatment of culture-negative PJI and can achieve similar infection control rate to culture-positive patients, suggesting that the commonly held belief that culture-negative PJI is one of contraindication of single-stage revision may need to be reconsidered.

**Plasma fibrinogen exhibits better performance than D-dimer in the diagnosis of periprosthetic joint infection: A multicenter retrospective study**

Rui Li<sup>1</sup>, Hong-Yi Shao<sup>2</sup>, Li-Bo Hao<sup>1</sup>, Bao-Zhan Yu<sup>1</sup>,  
Peng-Fei Qu<sup>1</sup>, Yi-Xin Zhou<sup>2</sup>, Ji-Ying Chen<sup>1</sup>  
1. Chinese PLA General Hospital (301 Hospital)  
2. Beijing Jishuitan Hospital,  
Fourth Clinical College of Peking University

**Background:**

Identification of potential markers for a timely and accurate diagnosis of periprosthetic joint infection (PJI) is ongoing. Previous studies have focused on inflammatory markers and have rarely examined coagulation-related indicators. The purpose of this study was to evaluate the value of plasma fibrinogen, D-dimer as well as other blood markers for the diagnosis of PJI through a multicenter retrospective study.

**Methods:**

A total of 566 revision total hip or knee arthroplasty cases were enrolled in this study between January 2016 and December 2017, of which, 127 had coagulation-related comorbidities and were separately analyzed. The remaining 439 cases included 76 PJI and 363 non-PJI cases. The definition of PJI was based on the International Consensus Meeting (ICM) criteria. The diagnostic values of D-dimer, fibrinogen, the erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and white blood cell (WBC) count were analyzed using receiver operating characteristic (ROC) curves.

**Results:**

ROC curves showed that plasma fibrinogen had the highest area under the curve (AUC) of 0.852, followed by two classical markers, the ESR and CRP, which had AUCs of 0.810 and 0.808, respectively. D-dimer had an AUC of 0.657, which was the second lowest value, only slightly higher than that of the WBC count, 0.590. The optimal threshold for plasma D-dimer was 1.25 µg/ml, with a sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of 0.645, 0.650, 0.278 and 0.897, respectively. The optimal threshold for plasma fibrinogen was 4.01 g/l, which showed a good sensitivity, specificity, PPV and NPV of 0.763, 0.862, 0.537 and 0.946, respectively.

**Conclusions:**

Plasma D-dimer may have a very limited diagnostic value for PJI, while fibrinogen, another coagulation-related indicator, exhibits a promising performance. Plasma fibrinogen has good sensitivity and specificity for diagnosing PJI with values similar to those of classical markers including CRP and ESR.

**Outcome of irrigation and debridement with liner exchange, followed by IV and local antibiotics delivery in the treatment of PJI within 3 months since the primary TKA or THA: an average of 56.3 m of follow-up**

Wenbo Mu, Xu Boyong, Zhang Xiaogang,  
Guo Wentao, Ji Baochao, Cao Li  
First Affiliated Hospital  
of Xinjiang Medical University

**Background:**

Periprosthetic joint infection (PJI) is a common cause of failure in total knee and hip arthroplasty. Irrigation and debridement including liner exchange (I&D/L) is advocated to treat PJI within 3 weeks. The aim of this study is to present results of treating early-stage PJI with a standard protocol of I&D/L with retention of total knee and hip arthroplasty components, followed by IV and local antibiotics delivery.

**Methods:**

Forty-nine consecutive I&D/L patients (27 knees and 22 hips) were retrospectively evaluated with a mean follow-up of 56.3m (range, 24-96m). Inclusion criteria for I&D/L were as following: less than 3 months since the primary TKA or THA, no immunologic compromise, intact soft tissue sleeve, and well-fixed components. The I&D/L procedure consisted of aggressive debridement involving the removal of all necrotic, fibrous tissue and proliferative inflammatory synovialis; exchange of polyethylene insert (patients with knee infection); irrigation with 2 L normal saline, 200 ml hydrogen peroxide followed by soaking in 500ml 0.1 % aqueous betadine betadine for 15min; and 0.5 g of dry vancomycin powder poured in the surgical site. Postoperatively, all patients were treated with sensitive IV antibiotics and intra-articular injection with vancomycin. Infection was considered eradicated if the wound healed without persistent drainage, there was no residual pain or evidence of infection.

**Results:**

There were nine failures (18.4%) with a mean period of 3.8m (range, 1.5-10m) since the I&D/L procedure. As to the rest of the patients, the infection was eradicated with a satisfying outcome.

**Conclusion:**

The present protocol of I&D/L with IV and local antibiotics delivery for dealing with early-stage PJI, which is less than 3 months since the primary TKA or THA, is fairly effective.

**Radiological analysis of cystic lesion  
in osteonecrosis of the femoral head**

Fuqiang Gao, Zirong Li  
China-Japan Friendship Hospital

**Background:**

Cystic lesions are a common complication in osteonecrosis of the femoral head (ONFH). This study will discuss the cause of cystic lesion formation and the feature of cystic lesion distribution in ONFH. According to the feature of cystic lesion in ONFH, we will discuss the possible mechanisms of cystic lesions and their influence on collapse of the femoral head.

**Methods:**

We retrospectively gathered 102 ONFH patients (168 hips) from November in 2015 to August in 2016 on China-Japan Friendship Hospital. Three categories of patients' medical information were collected: demographic characteristics, bone cystic lesion location, and pathological finding on CT and MRI imaging (microfracture, collapse, crescent sign). On mid-coronal and mid-axial CT section, the femoral head was divided into four quadrants for locating the cystic lesion. And we classified the location relationship of cystic lesion and sclerosis rim as G1 type, G2 type, and G3 type on coronal CT section.

**Results:**

A significant difference was found between ONFH group with cystic lesion and ONFH group without cystic lesion in terms of microfracture ( $P < 0.001$ ), collapse ( $P < 0.001$ ), and crescent sign ( $P < 0.001$ ). Forty-four cystic lesions (70%) are located in anterior hip area and 19 cystic lesions (30%) are located in posterior hip area. There were 14, 24, and seven cystic lesions (31, 53, 16%) locating in lateral, central, and medial pillars of the femoral head. G2 type was the most common pattern of location relationship between cystic lesion and sclerosis rim.

**Conclusions:**

Cystic lesions are often found near sclerosis rim in ONFH. The femoral head with osteonecrosis complicating by cystic lesions is more likely to accompany microfracture, collapse, and crescent sign which indicate structural instability in the femoral head. Cystic lesion in ONFH plays an important role in aggravating the progression of femoral head collapse.



**Acknowledgments!**

The Arthroplasty Society in Asia gratefully acknowledges the following surgeons for their generous academic support to the 6th ASIA Annual Meeting Arthroplasty Society in Asia (ASIA2018)

**B**

Nicolaas C. Budhiparama

**C**

Hong Cai  
Cory L. Calendine  
Li Cao  
Xiaorui Cao  
Guanglei Cao  
Yonghan Cha  
Wei Chai  
Chin-Hsiang Chang  
Antonia Chen  
Jiyang Chen  
Xiaodong Chen  
Yunsu Chen  
Xiao Chen  
Jerry Yongqiang Chen  
Chun-Chieh Chen  
Cheng-Kung Cheng  
Liangliang Cheng  
Jingbo Cheng  
Peter KY Chiu  
Yoon-Je Cho  
Jae-Hyuk Choi  
Tae-Hyu Choi  
Thanainit Chotanaphuti  
HsienYeh Chou  
Dermod Collopy

**D**

Xiaoqian Dang  
Xiangtian Deng  
Lu Ding  
Huanwen Ding  
Ran Ding  
Xiaojie Dou  
Guman Duan

**F**

Caili Fan  
Sheng Fang  
Eryou Feng  
Xiaoling Fu  
Donglin Fu

**G**

Yu-Hang Gao  
Fuqiang Gao  
Guanghan Gao  
Matthias Gebauer  
Shuo Geng  
Boay Heong Goh  
Zhenpeng Guan  
Lin Guo  
Wanshou Guo  
Shengjie Guo  
Chongjun Guo

**H**

Kaken Habaxi  
Keisuke Hagio  
Yongtai Hai  
Seung-Beom Han  
Bin Han  
Peng Hao  
Linjie Hao  
Chuan He  
Hendy Hidayat  
Yihe Hu  
Ning Hu  
Qinsheng Hu  
Ning Hu  
Chang Yong Hu  
Wei Huang  
Yifan Huang  
Gangyong Huang  
Zida Huang  
Ku-chou Huang  
Xiaokang Huang  
Michael Huo  
Jungmo Hwang

**J**

Baochao Ji  
Xiaolin Jia  
Qing Jiang  
Yong Jiang  
Qunhua Jin  
Yi Jin

**K**

Anup Khare  
Young-Ho Kim  
Sang-Min Kim  
Shin-Yoon Kim  
Kwangkyoun Kim  
Jih-Yang Ko  
FengChih Kuo

**L**

Sang Jin Lee  
Mel S. Lee  
Greg Li  
Hui Li  
Huiwu Li  
Pingyue Li  
Wei Li  
Guodong Li  
Mengyuan Li  
Dongyao Li  
Xin Li  
Qingdian Li  
Yeran Li  
Jun Li  
Ke Li  
Hui Li  
Mengqing Li  
Baolin Li  
Huiwu Li  
Pingyue Li  
Rui Li  
Bojian Liang  
SeungJae Lim  
Jin Lin  
Jianhao Lin  
liqiong lin  
Xuchao Lin  
Yu-Hsien Lin  
Zhihong Liu  
Xianzhe Liu  
Ning Liu  
Adolph V. Lombardi  
Chia Shi Lu  
Xiaofei Luo

**M**

Jianbing Ma  
Yuanchen Ma  
Tao Ma  
Tong Ma  
Xinzhan Mao  
Yuanqing Mao  
Xinzhan Mao  
S.K.S.Marya  
Byung-woo Min  
Kyoung Ho Moon  
Jun-Ki Moon  
Wenbo Mu

**N**

Ryuji Nagamine  
Yu Nie

**O**

Takuya Otani

**P**

Youn Soo Park  
KwanKyu Park  
Chan-Woo Park  
Fuxing Pei  
Xiaochun Peng

**Q**

Yansong Qi  
Qirong Qian  
Wenwei Qian  
Junjie Qiao  
Jianghui Qin  
Yanguo Qin

**R**

Jie Ren  
Young Ho Roh

**S**

Xifu Shang  
Yunchao Shao  
Hongyi Shao  
Bin Shen  
Jirong Shen  
Hao Shen  
Jirong Shen  
Lei Shi  
Kao Shang Shih  
Chandeep Singh  
Pawel Skowronek  
Yang Song  
Lianbin Su  
Nobuhiko Sugano  
Li Sun  
Jingtao Sun  
Kuo Sun

**T**

Andrew Tang  
Xiaobin Tian  
Shaoqi Tian  
Mian Tian  
Yihui Tu

**W**

Junming Wan  
Jinliang Wang  
Yan Wang  
Fei Wang  
Haibin Wang  
You Wang  
Jian Wang  
Qi Wang  
Jindong Wang  
Zhiwei Wang  
Qiaojie Wang  
Kunzheng Wang  
Yakang Wang  
Wenbo Wang  
Fangxing Wang  
Jinliang Wang  
Zengrong Wang  
Chenggong Wang  
Guowei Wang  
Zhiyuan Wang  
Wulian Wang  
Wenbo Wang  
Liao Wang  
Fangxing Wang  
Chongyan Wang  
Xinguang Wang  
Dong Wang  
Haibing Wang  
Wenbo Wang  
Xisheng Weng  
Haishan Wu  
Haobo Wu  
Lidong Wu  
Yaoqing Wu  
Jian Wu  
Cheng-Ta Wu  
Xiangdong Wu  
Mingzhou Wu  
Hsinting Wu  
Haihe Wu

**X**

Lianbo Xiao  
Jianlin Xiao  
Weidong Xu  
Haijun Xu  
Guosong Xu  
Haijun Xu  
Meng Xu  
Tianyang Xu  
Zhiyang Xu  
Long Xue

**Y**

Chun Hoi Yan  
Shigui Yan  
Charlie Yang  
Weiming Yang  
Chen Yang  
Chunxi Yang  
Chen Yang  
Zhenjun Yao  
yongjie ye  
Jiajing Ye  
Bowen Ye  
Linhong Yi  
Zhimin Ying  
Myung Chul Yoo  
Jae Youn Yoon  
Taek Rim Yoon  
Tzai-Chiu Yu  
Bing Yue

**Z**

Yirong Zeng  
Jing zeng  
Guoqiang Zhang  
Wenming Zhang  
Xianlong Zhang  
Xiaogang Zhang  
Hua Zhang  
Haining Zhang  
Haoshaqiang Zhang  
Yuan Zhang  
Yiyuan Zhang  
Bo Zhang  
Jingwei Zhang  
Guoning Zhang  
Yangyang Zhang  
Yuan Zhang  
Wenming Zhang  
Yuan Zhang  
Hui Zhao  
Bin Zhao  
Guanglei Zhao  
Linli Zheng  
Qiuqian Zheng  
Yixin Zhou  
Yongang Zhou  
Zongke Zhou  
Caisheng Zhou  
Yu Zhou  
Chen Zhu  
Qi Zhu  
Chengdong Zhu  
Martin Zimmermann  
Jianlin Zuo

# 施乐辉全膝关节系统 如你所愿

JOURNEY<sup>II</sup>  
全膝关节系统

仿若新生



GENESIS<sup>II</sup>  
全膝系统

简约经典



LEGION<sup>o</sup>  
全膝关节系统

精准全面



多种垫片，灵活选择



Vanguard CR  
多种垫片选择  
灵活满足术中不同状况

匠心  
铸就经典

**stryker**

**LINK<sup>®</sup>**

**C.F.P.<sup>®</sup>**

保留股骨颈型非骨水泥型  
髋关节置换系统

2017 vol. 3  
**Mako Partial Knee,  
Total Hip and Total Knee**



**微创理念 赢在未来**

保留股骨颈设计  
专利的解剖型设计  
德国顶尖表面处理工艺



 **纳通医疗集团**  
NATON MEDICAL GROUP



# 稳妥更高效 院内优选

VTE↑



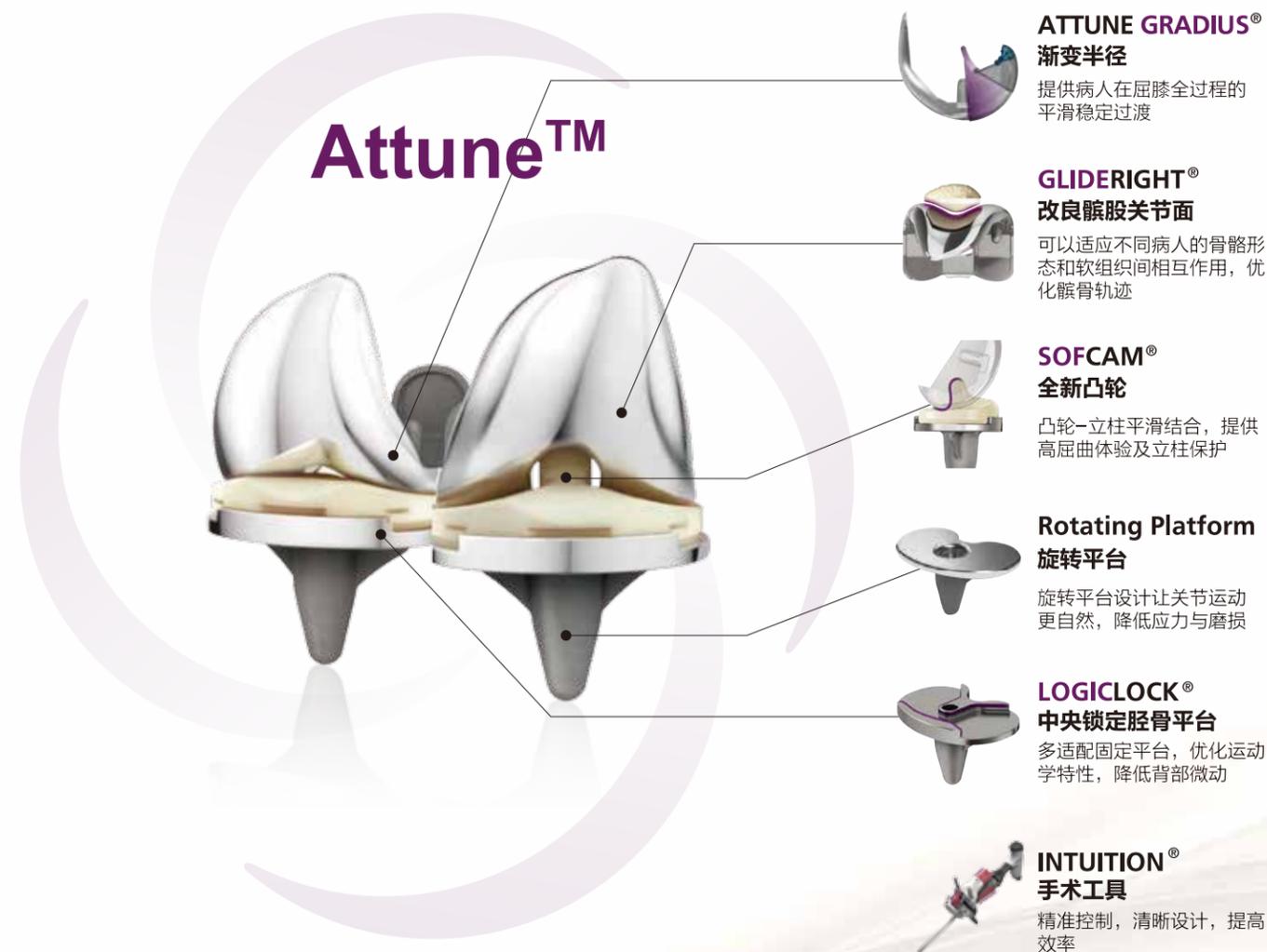
# Xa | Xa

CFDA/FDA双认证，品质值得信赖



## 心至悦，行至稳

Attune™全膝关节置换系统，继承Sigma与LCS系统的优异临床效果，在手术工具，假体设计，及聚乙烯垫片材质上进行了全面的改进，配合更适于国人的丰富假体尺寸，使术后膝关节功能与活动度恢复的同时获得屈曲全程的稳定。让医生更有信心，让病人更加满意。



# MOBIO™ 单半径膝关节

All in ONE 畅爽运动, 无需妥协



BalanSee™  
单半径股骨

中屈稳定, 平衡可见



Fretella™  
髌股关节面

船型髌股接触面



全开放式  
超浅髁间窝

减少31%截骨量



宽窄尺寸  
±2号差配

适应亚洲病人

b-ONE  
宽岳骨科



WEGO  
ORTHO  
威高骨科

STAR JOINT  
海星关节

# Alpha-Conserve

全HA骨保留股骨柄



*Less is more*

# WE-Motion

Knee System



*Guided Motion With Least Constraint*

Motion

## 贝朗蛇牌骨科关节一体化解决方案





# 拜瑞妥® 抗凝从未如此高效简便

高效

◆ 唯一较低分子肝素显著降低PE及死亡的抗凝药

安全性

◆ 无HIT风险，较低分子肝素不增加出血风险

简便

◆ 口服、一日一次、无需注射，轻松实现35天抗凝

信心

◆ 列入国家医保目录，全球使用患者超过4,200万<sup>a</sup>



拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司 拜耳医药有限公司

LOUMZ 0520173643