

Advancements in Hip Surgery

Joint Preservation, Anterior Approach, and Robotics

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Advancements in Hip Surgery

Outline

Joint Preservation

Surgery to prevent or delay hip replacement

Most often, hip arthroscopy

Anterior Approach

Data mounts to support faster recovery and more accurate surgery

Robotics

Three dimensional planning coupled with robotic accuracy

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Joint Preservation

There are several conditions for which early intervention may prevent the need for hip replacement.

FAI, or femoral acetabular impingement is the most common

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FAI

Recent data continues to support the ideal that early intervention in FAI prevents or delays hip replacement.

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FAI

FAI is when, due to structural abnormalities in the hip, the femur bumps into the acetabulum too frequently and/or too forcefully

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FAI

May be due to a femoral abnormality
CAM deformity



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FAI

May be due to a cup, or acetabular deformity

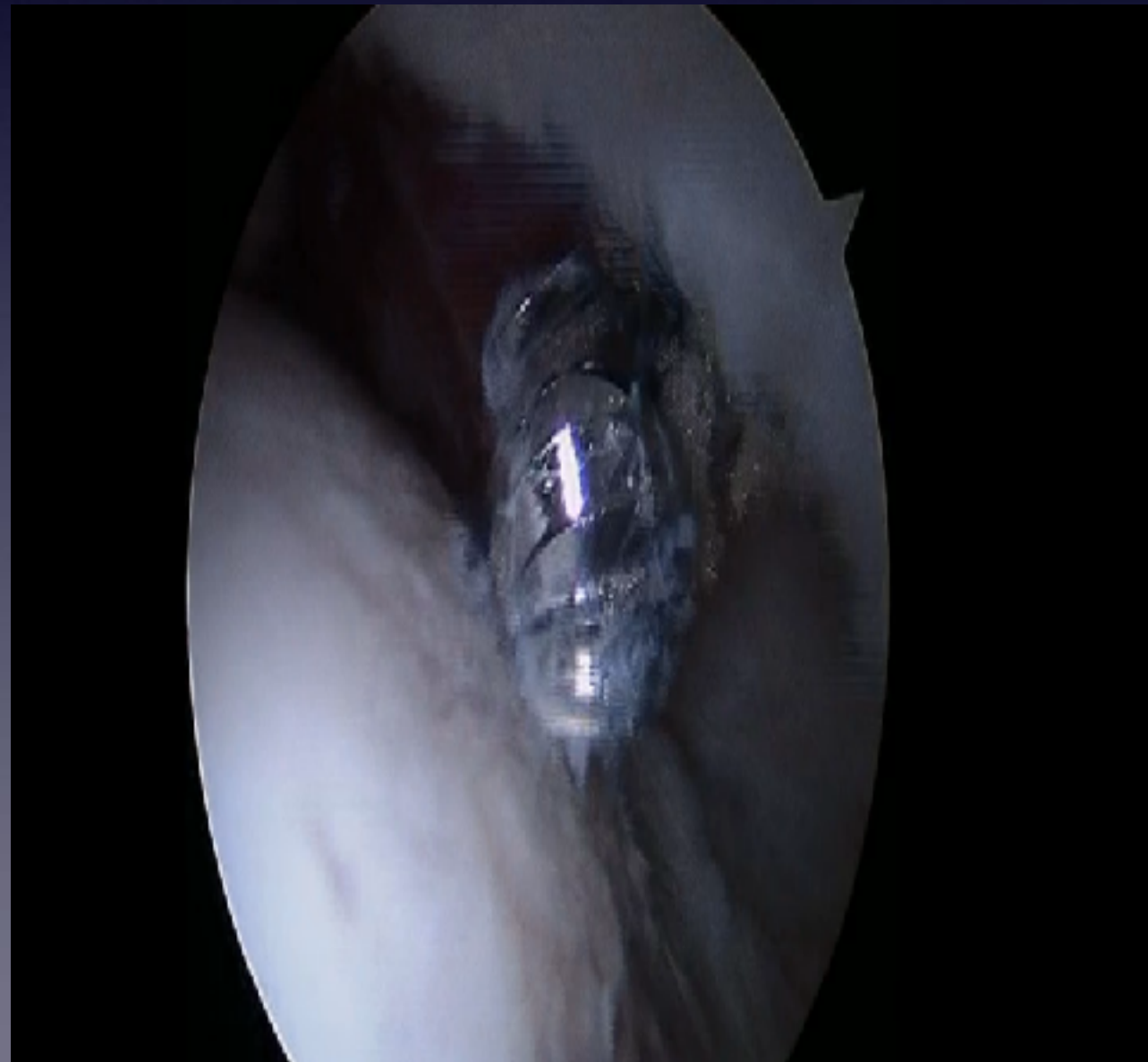
Pincer



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FAI

Is commonly associated with a labral tear



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The most common deformities that produce FAI can be corrected arthroscopically



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Correction of FAI is relatively new, first started in Switzerland in the 1990s, it became common in the US around 2000.

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Evidence continues to support the ideal that correction of FAI not only provides immediate improvement in symptoms, but also delays or reduces the risk of future hip replacement.

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Direct Anterior Approach

This technique used to perform hip replacement became increasingly popular several years ago
I now have done over 500 DA hips, and the results have been encouraging

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- Direct Anterior Approach
 - The patient lays flat on the table
 - The incision is in the front of the hip



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- Direct Anterior Approach
 - Accurate Xray guidance



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- We changed because of many reports documenting decreased recovery time

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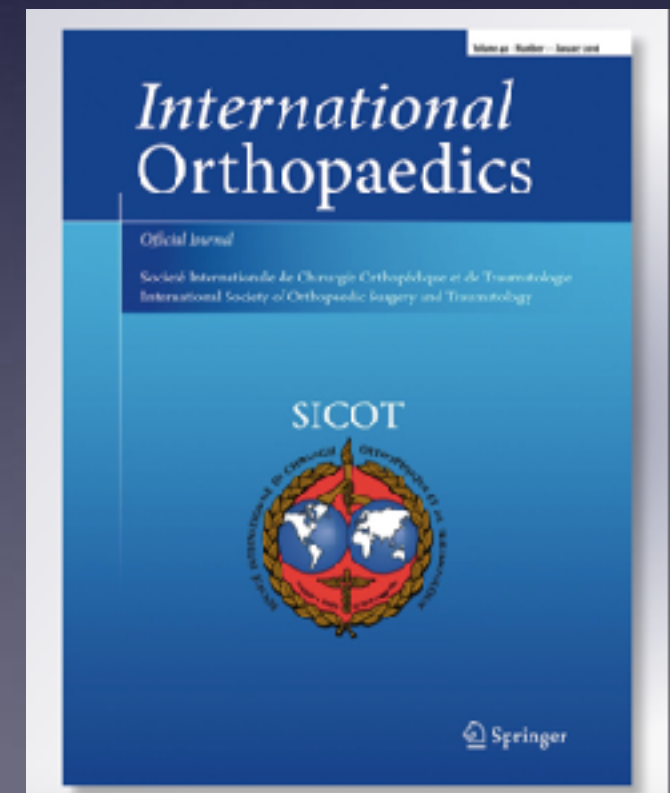
- We discovered marked improvements in the accuracy of component positioning

Variables	Intraoperative fluoroscopy	Postoperative standing AP X-ray	<i>t</i> value	<i>P</i> value
DAA				
Inclination	42.32±1.91	42.98±1.81	1.354	1.181
Anteversion	22.30±1.41	22.88±1.38	-1.618	0.111
PA				
Inclination	36.80±3.72	39.29±4.58	2.174	0.022
Anteversion	25.60±3.64	21.31±4.04	4.389	<0.001

DAA direct anterior approach, *PA* posterior approach

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- Dr. Weifeng Ji and I published an article recently in the International Orthopaedics Journal comparing the accuracy of the anterior approach vs the posterior approach based on the patient's intraoperative x-rays



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- Robotics, continued pursuit of accuracy
 - 3D planning
 - Registering the anatomy
 - How the robot works during surgery

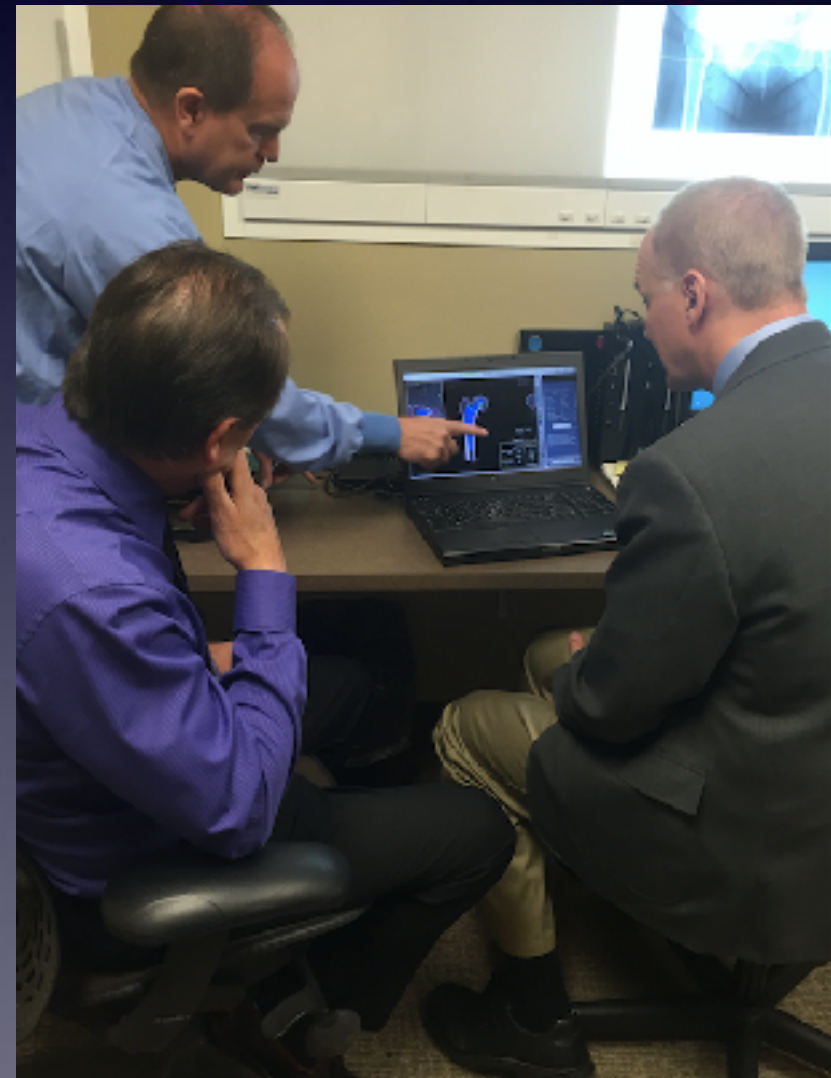
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- 3D planning
- CT scan



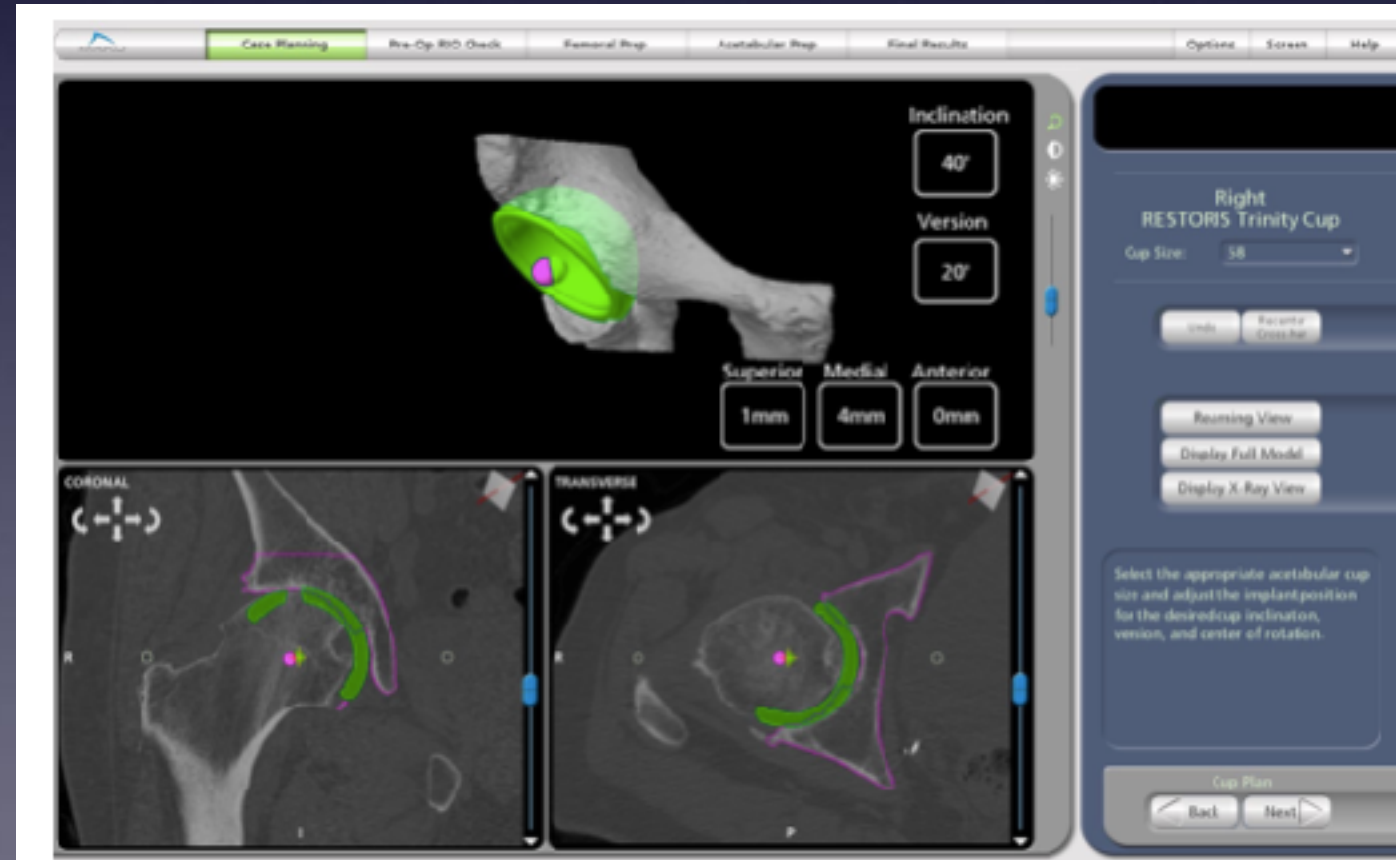
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- Computer aided design



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- Computer aided design



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- How the robot knows where the patients bones are located



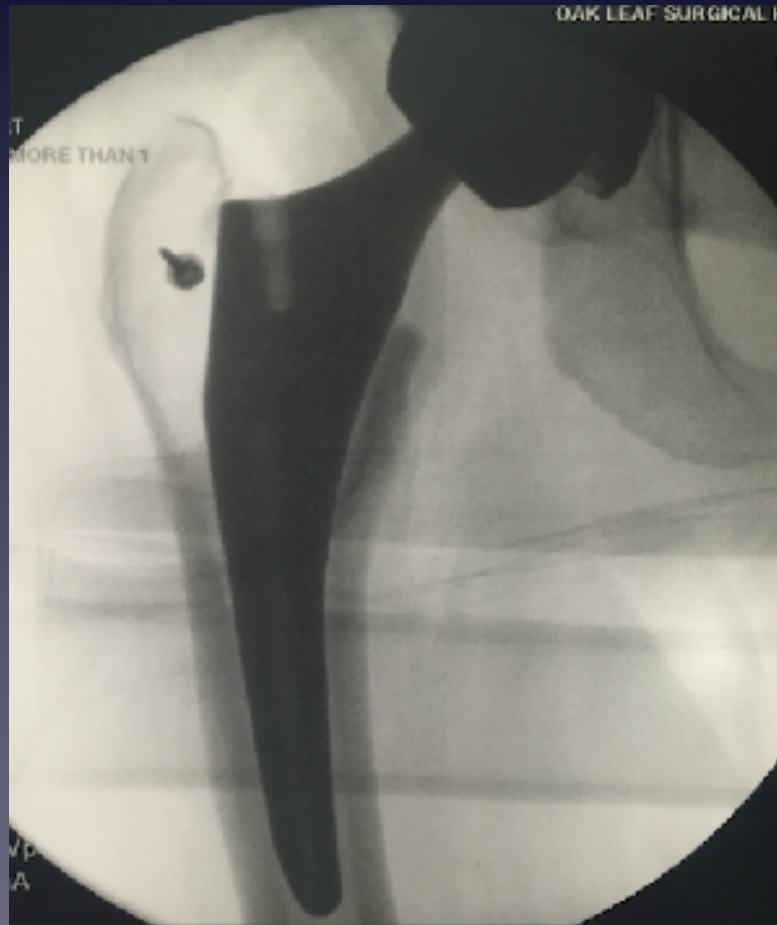
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- Registering the pelvis



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- Markers on the femur



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- The robot in action



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- Accurate results
- Xray of THA



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- Robotics as part of a rapid recovery
 - Multimodal pain control
 - Direct anterior approach
 - Rapid recovery anesthesia

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- These techniques produce real differences in patient care
 - Same day discharge
 - Bilateral hip replacements

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- Summary, techniques
 - Alternatives to hip replacement
 - Direct Anterior Hip Replacement
 - Robotic Hip replacement

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- Summary, Results
 - Relief without replacement
 - Faster Recovery after replacement
 - More accurate surgery

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- Thank you

