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Too Much Arthritis for Hip Arthroscopy, Not Enough For THA What to do?

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Faculty Disclosure Information

- Nothing to disclosure... or
- AAOS: Board or committee member
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BACKGROUND

- Arthroscopic hip preservation and total hip arthroplasty (THA) have both been shown to have excellent outcomes for non-arthritic and arthritic patients, respectively.
- Patients with mild or moderate arthritis are likely to have increasing arthroscopic failure risk.
- Patients with mild or moderate arthritis are frequently told by THA physician they “don’t have enough” arthritis for THA.
- The “in-between” case of mild to moderate hip arthritis is controversial in that patients have too much arthritis for an arthroscopy and not enough arthritis for arthroplasty.



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PURPOSE

- To evaluate intra- and inter-observer agreement of surgical treatment decisions based on hip/pelvis plain radiographs between adult reconstruction- and sports medicine-fellowship trained orthopedic surgeons.



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METHODS

- Hip/pelvis radiographs of 12 subjects of varying ages and levels of osteoarthritis were evaluated by arthroscopic hip preservation and adult reconstruction surgeons.
- Participants were to assume that all subjects had attempted non-surgical treatment without success, and desired surgery.
- Each surgeon selected imaging features (e.g. Tonnis grade) and surgical treatment (arthroscopy, total hip arthroplasty). Participants were told the patient's sex and age.
- Surgeon responses were analyzed in sub-groups identified by patients with minimal arthritis (Tonnis 0/1) and advanced arthritis (Tonnis 2/3).
- Agreement was evaluated via the kappa coefficient.



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METHODS



Laterality: Left
Age: 51
Sex: Male

Which of the following features does the patient have on imaging?

- ☐ Cam morphology
- ☐ Pincer morphology
- ☐ Borderline/mild dysplasia
- ☐ Dysplasia
- ☐ Osteoarthritis (Tonnis grade 0)
- ☐ Osteoarthritis (Tonnis grade 1)
- ☐ Osteoarthritis (Tonnis grade 2)
- ☐ Osteoarthritis (Tonnis grade 3)

Which of the following is the most appropriate treatment?

- ☐ Continue non-operative management with PT and NSAIDs
- ☐ Continue non-operative management with corticosteroid injection
- ☐ Operative management via hip arthroscopy for FAI
- ☐ Operative management via total hip arthroplasty
- ☐ Operative management via PAO surgery for hip dysplasia

Figure 1: Example of patient scenario in survey.



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RESULTS

- Nineteen surgeons (8 adult reconstruction, 11 sports medicine) participated in the survey.
- There were no significant differences between Adult Reconstruction and Sports Medicine surgeons in age, years in post-fellowship practice or number of total hip surgeries per year.

	Sports Medicine (n=11)	Reconstruction (n=8)	P-value
Age (years)	46 (39-62)	44 (36-66)	0.59
Years in post-fellowship practice	13.2 (8-30)	11.9 (4-35)	0.76
Number of arthroscopy or total hip arthroplasty surgeries per year	297 (150-500)	314 (200-500)	0.76

RESULTS

In the six patients with minimal arthritis (Tonnis 0, Tonnis 1):

- Moderate agreement for the identification of Tonnis 0 (kappa =0.54).
- Fair agreement for the identification of Tonnis 1 (kappa=0.26).
- Sports surgeons recommended hip arthroscopy more than THA surgeons (32.5% vs 9.5%, $p < 0.01$).
- Moderate agreement for the recommendation of hip scope (kappa =0.44).
- No difference in recommendation for THA between surgeon groups (28% vs. 29%, $p = 0.99$).
- Fair agreement for the recommendation of THA (kappa=0.32).

In the six patients with advanced arthritis (Tonnis 2, Tonnis 3):

- Fair agreement for the identification of Tonnis 2 (kappa =0.3).
- Moderate agreement for the identification of Tonnis 3 arthritis (kappa=0.43).
- No difference in recommendation for arthroscopy between surgeon groups (6% vs 7%, $p = 0.99$).
- No difference in recommendation for THA between surgeon groups (70% vs. 83%, $p = 0.7$).
- Very good agreement for recommendation against arthroscopy (kappa =0.83).
- Good agreement for the recommendation of THA (kappa=0.72).

Value of Kappa	Strength of Agreement
<0.20	Poor
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Good
>0.80	Very Good

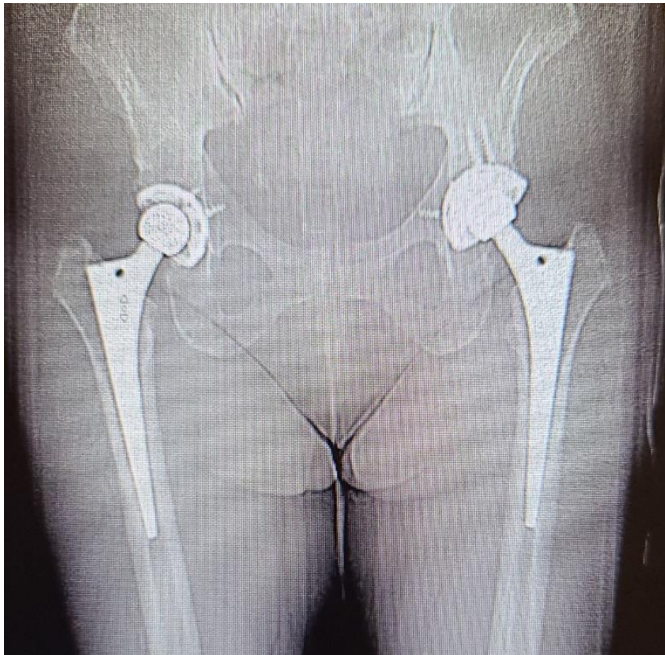
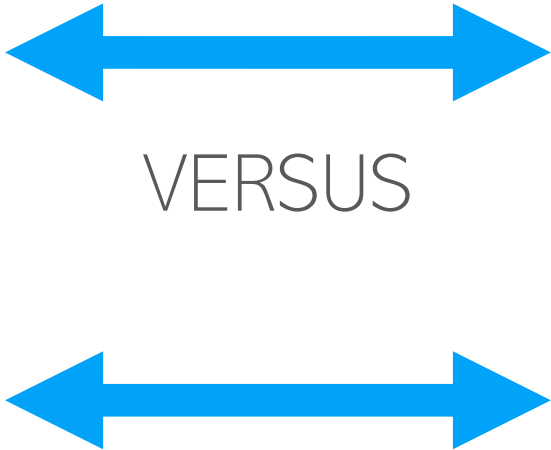


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RESULTS



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CONCLUSIONS

- The primary outcome of this study was moderate agreement between arthroscopic hip preservation and adult reconstruction surgeons in selecting either hip arthroscopy or arthroplasty for “in-between” patients with mild to moderate hip arthritis.
- While the study has a small number of participants, radiographic characterization and surgical treatment choices need improved consensus for optimal patient care.



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