

Periacetabular Osteotomy in the Athletic Middle-Aged Patient: An Outcomes Study on Patients Aged 45 Years and Older



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BACKGROUND

- SYMPTOMATIC ACETABULAR HIP DYSPLASIA CAN BE A DIFFICULT CONDITION TO TREAT IN AN OLDER POPULATION
- 30 YR DATA FOR THE GANZ PAO WAS PUBLISHED IN 2017 DEMONSTRATING 29% NONARTHROPLASTY SURVIVORSHIP WITH INCREASED AGE (>40) ASSOCIATED WITH POORER OUTCOMES/FAILURE.
- IMPLEMENTATION OF AGE CUTOFFS FOR BONY HIP PRESERVATION LEAVE THE AGING, PAINFUL DYSPLASTIC HIP POPULATION WITH ONLY RECONSTRUCTIVE OPTIONS FOR SURGICAL TREATMENT.
- “TOO OLD FOR HIP PRESERVATION; TOO YOUNG FOR TOTAL HIP ARTHROPLASTY”



GOALS

Report on	Report on successful outcomes of patients 45 years and older who underwent staged hip arthroscopy and the CU PAO.
Challenge	Challenge the notion of a hip preservation “cut-off” age
Present	Present bony hip preservation as a viable option for appropriately selected surgical candidates over the age of 45.

METHODS

- PATIENTS WITH A MINIMUM AGE OF 45 YEARS WHO UNDERWENT STAGED HIP ARTHROSCOPY AND THE CU PAO WITH A MINIMUM OF 1-YEAR FOLLOW-UP BETWEEN 2015-2021 WERE INCLUDED.
- PRE- AND POSTOPERATIVE PATIENT-REPORTED OUTCOME SCORES
 - INTERNATIONAL HIP OUTCOME TOOL (IHOT-12)
 - NON-ARTHRITIC HIP SCORE (NAHS)
- PRE AND POSTOPERATIVE RADIOGRAPHIC MEASUREMENTS
 - LATERAL CENTER EDGE ANGLE (LCEA: OGATA)
 - TÖNNIS (OR SOURCIL)
 - NECK AXIS DISTANCE (NAD)

PATIENT CHARACTERISTICS

- THIRTY-SEVEN PATIENTS (42 HIPS) WERE INCLUDED WITH A MEAN AGE OF 49 YEARS (RANGE, 45-61 YEARS) AND MEAN FOLLOW-UP OF 2.0 YEARS (RANGE, 1.0-7.0 YEARS).
- FEMALES ACCOUNTED FOR 40 OF THE 42 HIPS (95%).
- PREOPERATIVE TEGNER SCORE AVERAGED 6.1 (RANGE, 4-9).

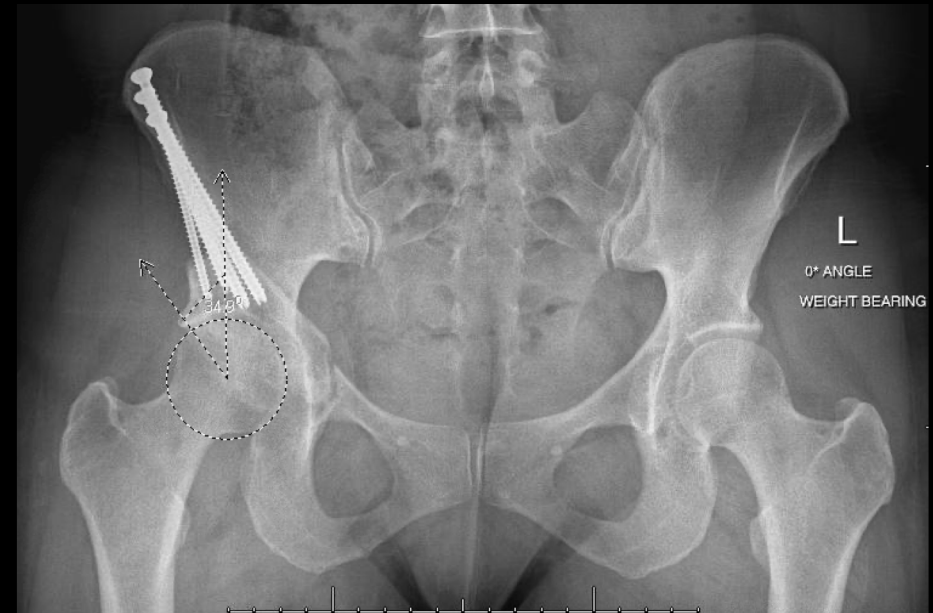
	N (42)	Mean	SD
Age at surgery (PAO)		49.7	4.0
BMI		22.9	2.8
Beighton score (0-9)		2.9	2.4
Duration of pain at initial presentation (years)		6.8	7.7
Tegner score		6.1	1.2

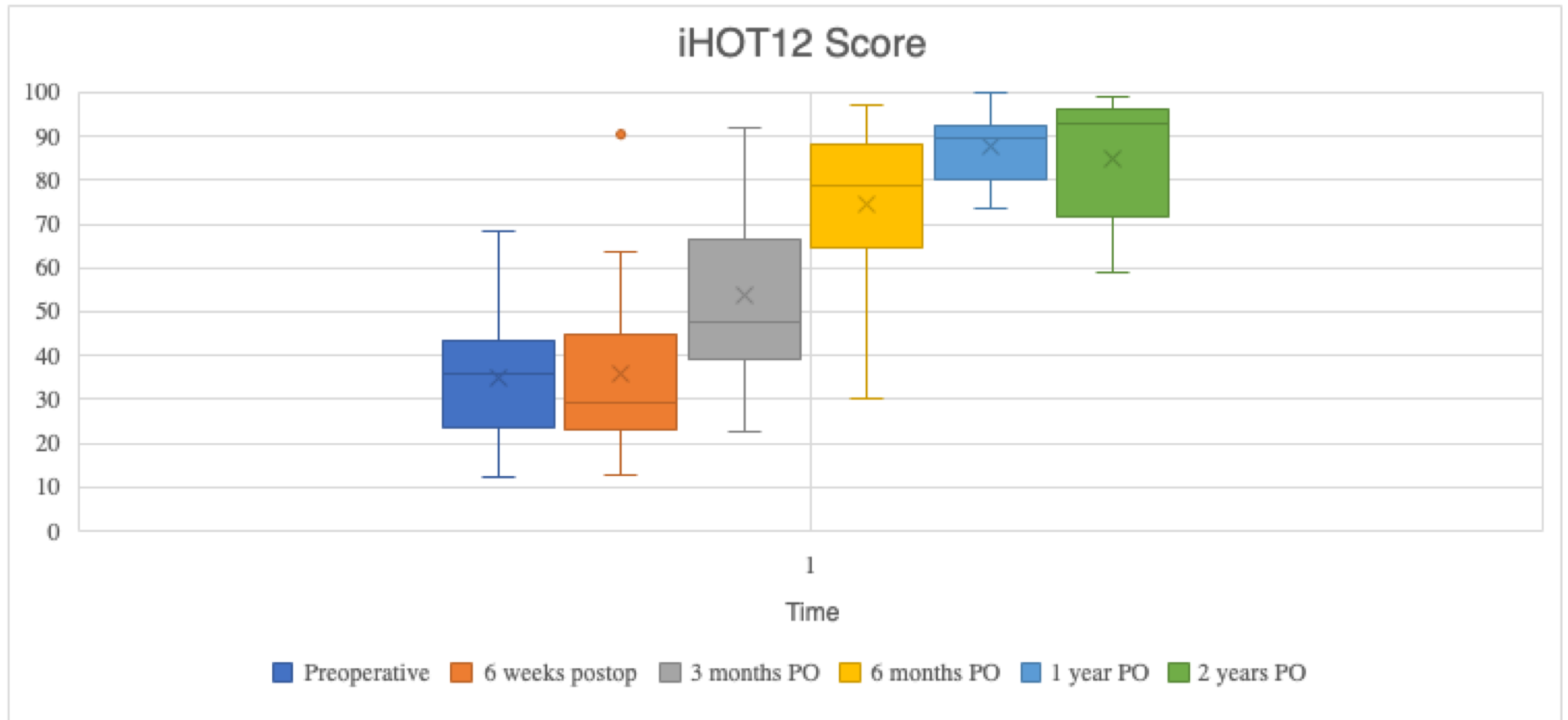
PREOPERATIVE PATIENT CHARACTERISTICS

N (42)	Mean	SD
Preoperative internal rotation (90° flexion) (deg)	28.6	16.2
Preoperative flexion (deg)	108.7	8.3
Preoperative lateral center edge angle (LCEA) (deg)	20.1	4.5
Preoperative Tönnis angle (deg)	11.9	4.2
Preoperative lateral joint space (mm)	4.9	0.9
Preoperative medial joint space (mm)	4.5	0.7
Preoperative neck axis distance (mm)	18.3	4.9
Preoperative acetabular equatorial version (deg)	23.9	5.1
Preoperative femoral torsion (deg)	20.4	9.0

RESULTS (RADIOGRAPHIC)

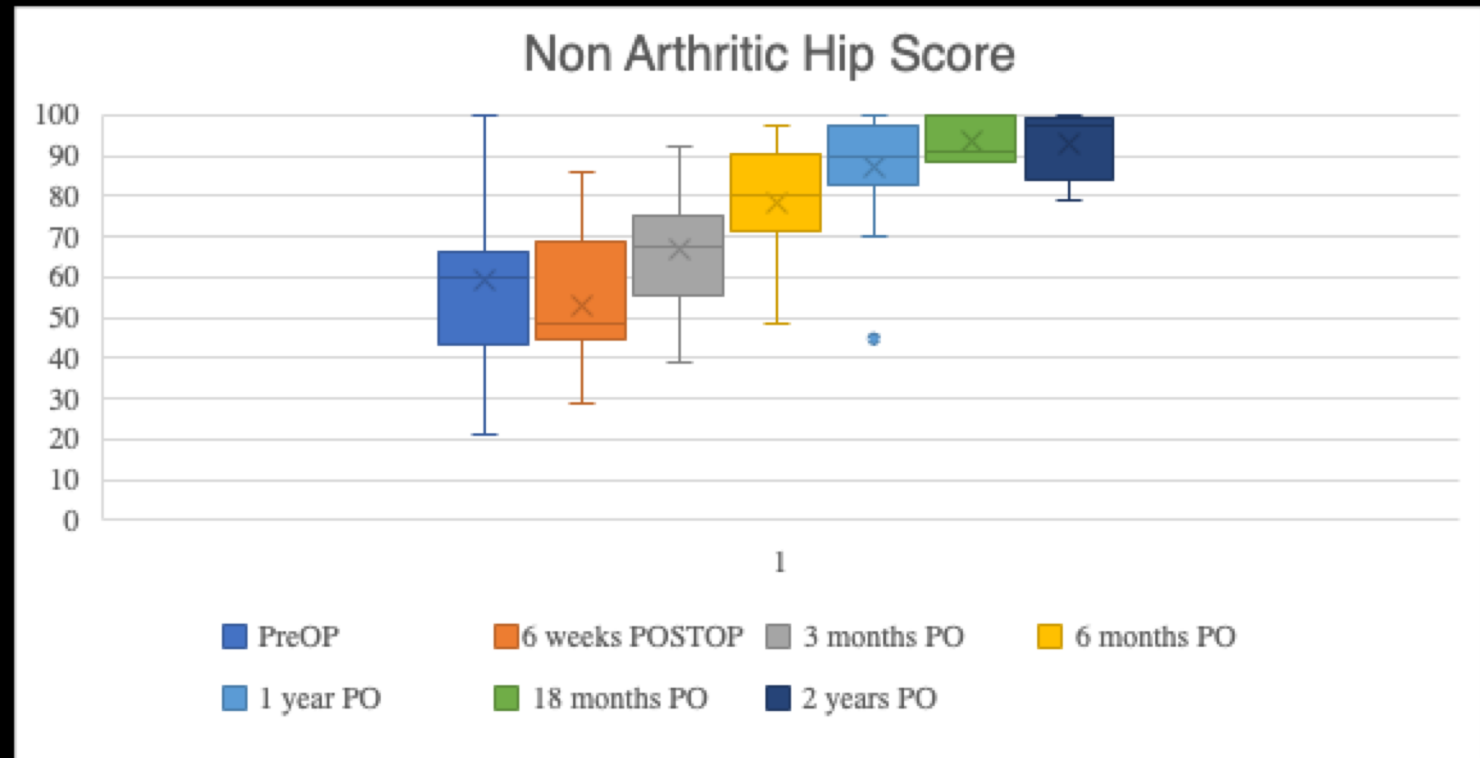
N (42)	Mean	SD
Preoperative lateral center edge angle (LCEA)	20.1	4.5
Postoperative LCEA	33.0	7.0
Preoperative Tönnis angle	11.9	4.2
Postoperative Tönnis angle	-0.8	11





iHOT12 reached significant improvement ($p < 0.01$) at 3 months.

NAHS
REACHED
SIGNIFICANT
IMPROVEMENT
($P < 0.0001$) AT
3 MONTHS.





RESULTS

iHOT-12 scores significantly increased from a mean of 36.2 ± 14.7 preoperatively to 87.5 ± 10.8 at latest follow-up ($p < 0.0001$).

NAHS scores significantly increased from 64.9 ± 25.0 preoperatively to 90.3 ± 8.9 at latest follow-up ($p = 0.006$)

iHOT-12 MCID 10.7; NAHS MCID 12.0 achieved at 3 months postoperatively and persisted through latest follow-up (1-7 years).

One patient underwent conversion to THA during the study period



DISCUSSION

- PATIENTS OVER THE AGE OF 45 UNDERGOING THE CU PAO EXPERIENCED SIGNIFICANTLY IMPROVED PATIENT-REPORTED OUTCOMES AT MID-TERM FOLLOW-UP, DEMONSTRATING THAT OLDER COHORTS CAN BENEFIT FROM PAO SURGERY.
- MCID FOR BOTH IHOT12 AND NAHS WERE ACHIEVED AT 3 MONTHS POSTOPERATIVELY AND PERSISTED THROUGH LATEST FOLLOW-UP.
- ADDITIONALLY, ALL PATIENTS DEMONSTRATED RADIOGRAPHIC ANATOMIC CORRECTION FOLLOWING BONY SURGERY AS MEASURED BY DIFFERENCE IN LCEA AND TÖNNIS ANGLE.
- SINGLE CONVERSION IN COHORT

SUMMARY

- PATIENTS OLDER THAN 45 YEARS OF AGE CAN BENEFIT FROM PAO HIP PRESERVATION SURGERY.
- RECONSIDER AGE CUTOFF FOR THE OLDER PATIENT WITH PHYSIOLOGICALLY APPROPRIATE JOINT AND HIGH FUNCTIONAL DEMAND FOR WHOM ARTHROPLASTY MAY NOT BE AN IDEAL SURGICAL OPTION.
- DILIGENT PATIENT SELECTION AND EXPECTATION MANAGEMENT.
- HIP PRESERVATION SURGERY REQUIRES A HIP WORTH PRESERVING.



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