Direct Anterior Approach Is Associated with Superior Early Mobilization after Total Hip Arthroplasty for Femoral Neck Fracture

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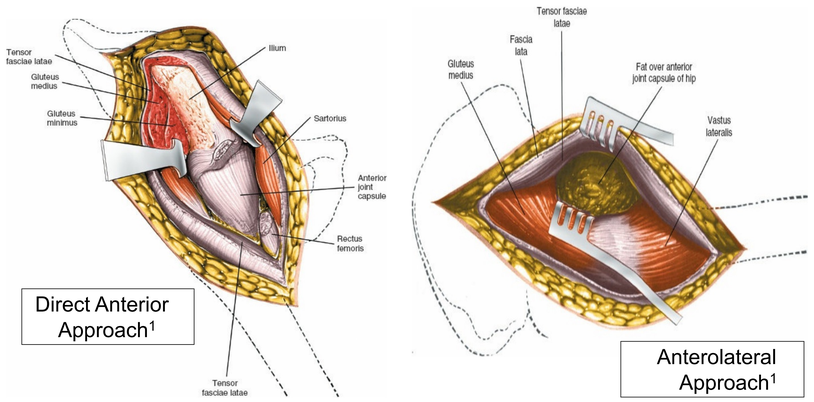
Introduction

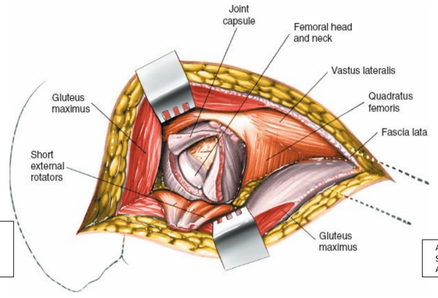
- In the United States and worldwide, the number of hip fractures has been rising.
- Projected to reach 4.5 million annually by 2050.
- Total hip arthroplasty (THA) has become increasingly utilized for management of FNFs with 8-14% managed with THA.
- Patient population is frail and more likely to demonstrate differences in clinical outcomes if any exist.

Objective: To comparatively assess the impact of surgical approach on the perioperative recovery and complication profile following THA in the setting of femoral neck fractures.



Direct Anterior Approach[1]

Anterolateral Approach[1]



Posterolateral Approach[1]

Approach Diagrams from Hoppenfield, Stanley, Surgical Exposures in Orthopedics Anatomic Approach, LWW, 2016

Results

Baseline Demographics	Direct Anterior Approach (N = 79)	Anterolateral or Posterolateral Approach (N = 169)	P value
Age (y)	75.3	76.8	0.5
Height (m)	1.6	1.7	0.4
Weight (kg)	66.6	68.2	0.9
BMI	24.5	24.6	0.5
CCI	4.1	4.6	0.03
Sex			
Male	23 (29%)	57 (34%)	0.6
Female	56 (71%)	112 (66%)	
Follow-up (months)	28.5	36.1	0.003

Table 1: Baseline Demographics

Primary Outcomes	Direct Anterior Approach (N = 79)	Anterolateral or Posterolateral Approach (N = 169)	P value
Distance ambulated (ft)	74.2	34.7	0.009
Time to ambulation (hr)	29.7	31.1	0.4
Estimated Blood Loss	267.1	309	0.9
Transfusion			0.09
(+)	13 (16%)	15 (9%)	
(-)	66 (84%)	154 (91%)	
Δ Hemoglobin (g/dL)	2.2	1.9	0.04
Δ Hematocrit (g/dL)	6.6	5.6	0.04
Length of stay (days)	4	5	0.3
Disposition			
Home	49 (62%)	71 (42%)	0.004
Other	30 (38%)	98 (58%)	

Table 2: Primary Outcomes

Secondary Outcomes	Direct Anterior Approach (N = 79)	Anterolateral or Posterolateral Approach (N = 169)	P value
Revision	6 (8%)	9 (5%)	0.4
Infection	1 (1%)	4 (2%)	1
Postoperative Fracture	2 (3%)	3 (2%)	0.7
Dislocation	1 (1%)	3 (2%)	1
90-day Readmission	1 (1%)	6 (4%)	0.4

Table 3: Secondary Outcomes

Methods

- 248 patients between 2017 to 2022 who received THA for FNF were retrospectively identified.
- The cohort included 79 patients who underwent THA through the direct anterior approach (DAA) and 169 through other approaches (OA).
- Primary outcomes such as time to mobilization, distance of initial mobilization, blood loss, transfusion rate, discharge disposition, and length of stay (LOS) were compared using appropriate statistical analysis.
- Secondary outcomes including postoperative complications were also examined.

Discussion

- Our study suggests that in patients with FNF, THA via the DAA is associated with increased distance ambulated during initial physical therapy assessment and higher rate of discharge home compared with patients in the OA group.
- Patients in the DAA group experienced a larger postoperative day 1 drop in hemoglobin and hematocrit compared to the OA group reflecting the clinically relevant trend towards increased transfusion rate seen in the DAA group.
- Multivariate analysis adjusting for the difference in CCI between the cohort continued to show superior ambulation in the DAA cohort.

Future Directions

- Ninety follow-up assessing whether any primary or secondary postoperative outcome differences continued to exist.
- Prospective study evaluating the role of surgical approach in the setting of FNF and THA.

References

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