Failure after Operative Repair is Higher for Ballistic Femoral Neck Fractures than for Closed, Blunt-Injury Fractures: A Multicenter Retrospective Cohort Study

Supplemental Documents

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Shu HT, *et al. Trauma Surg Acute Care Open* 2024; 9:e001241. doi: 10.1136/tsaco-2023-001241

Supplemental Table 1

Patient Factors of those with a Minimum of 1-Year Follow-up or Who Have Met Failure Criteria

	Ballistic Femoral Neck Fractures	**Closed, Blunt Injury Femoral Neck Fractures**	**P-Value**
	N = 7	N = 20	
BMI	24.5 (20.4 – 30.7)	23.8 (22.0 – 25.7)	0.658
Age (Years)	29 (26 – 41)	37 (27 – 47)	0.272
Gender (Female)	1 (14%)	6 (30%)	0.414
Active tobacco use	5 (71%)	6 (30%)	0.055
Diabetes	0 (0%)	1 (5%)	0.547
Length of hospital stay (Days)	7 (7 – 12)	5 (3 – 9)	0.181
Follow-up (Months)	21 (13 – 32)	21 (13 – 31)	0.890

BMI = Body mass index.

*Failure criteria includes nonunion, avascular necrosis, conversion to total hip arthroplasty, or conversion to Girdlestone procedure.

Values are represented as median (interquartile range) or as the number of patients (percentage of the group) where appropriate.

P-values are from the Wilcoxon rank sum test or Chi-squared test.

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Supplemental Table 2

Fracture Characteristics and Surgical Factors of Patients with a Minimum of 1-Year Follow-up or Who Have Met Failure Criteria

	Ballistic Femoral Neck Fractures	**Closed, Blunt Injury Femoral Neck Fractures**	**P-Value**
	N = 7	N = 20	
Time from injury to surgery (Days)	1 (0 – 2)	1 (0 – 1)	0.283
Displaced fracture	6 (86%)	20 (100%)	0.085
AO Classification			
Subcapital[1] (31B1)	3 (43%)	6 (30%)	
Transcervical[1] (31B2)	4 (57%)	9 (45%)	
Basicervical[1] (31B3)	0 (0%)	4 (20%)	0.415
Unreported	0 (0%)	1 (5%)	
Implants			
Cannulated screw	2 (29%)	7 (35%)	
Dynamic hip screw	2 (29%)	10 (50%)	
Modern fixed angle construct*	1 (14%)	2 (10%)	
Blade plate	2 (29%)	1 (5)	0.351
Unreported	0 (0%)	0 (0%)	
Surgical approach for reduction			
Direct Anterior (Smith-Peterson)	6 (86%)	17 (85%)	
Anterolateral (Watson-Jones)	0 (0%)	3 (15%)	
Closed reduction	1 (14%)	0 (0%)	0.142
Fracture reduction quality†			
1 - Excellent	4 (57%)	14 (70%)	
2 - Good	2 (29%)	4 (20%)	
3 - Fair	0 (0%)	1 (5%)	

4 - Poor	0 (0%)	0 (0%)	0.729
Unreported	1 (14%)	1 (5%)	

[1]= per the AO/OTA (2018) fracture compendium

* Either the Femoral Neck System (DePuy Synthes, West Chester, PA) or Conquest FN (Smith & Nephew, Warford, England, UK).

† Fracture reduction was graded as excellent (<2mm of displacement and <5 degrees of angulation in any plane), good (2 to 5mm displaced and/or 5 to 10 degrees of angulation), fair (>5 to 10mm displaced and/or >10 to 20 degrees of angulation), and poor (>10mm displaced and/or >20 degrees of angulation) per Haidukewych et al. (2004).

Values are represented as median (interquartile range) or as the number of patients (percentage of the group).

P-values are from the Wilcoxon rank sum test or Chi-squared test.