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Supplementary Table: Summary statistics of demographic, pre- and postoperative factors across four patient groups based on the presence of glenoid component shift and central peg osteolysis (CPO) at minimum 2 year follow-up. Glenoid component shift was defined as a change in component version or inclination of 3° or more from the immediate postoperative CT (CT2) to the minimum 2 year follow-up CT (CT3).

Factor	**CPO, Shift N=15**	**CPO, No Shift N=4**	**No CPO, Shift N=63**	**No CPO, No Shift N=70**
Age at Surgery (years):	61.4 ± 8.6	61.0 ± 9.1	63.0 ± 7.4	64.1 ± 7.3
Gender:				
Female	3 (7%)	0 (0%)	22 (48%)	21 (46%)
Male	12 (11%)	4 (4%)	41 (39%)	49 (46%)
Implant Type:				
Standard glenoid component (SG)	8 (8%)	2 (2%)	37 (39%)	48 (51%)
Augmented glenoid component (AG)	7 (12%)	2 (4%)	26 (46%)	22 (39%)
Walch Classification/Implant Type:				
A1 SG	1 (2%)	1 (2%)	16 (38%)	24 (57%)
A2 SG	2 (13%)	0 (0%)	3 (19%)	11 (69%)
B1 SG (n=6)/AG (n=1)	2 (29%)	0 (0%)	2 (29%)	3 (43%)
B2 SG	3 15%)	1 (5%)	12 (60%)	4 (20%)
B2 AG	2 (7%)	1 (3%)	14 (48%)	12 (41%)
B3 SG	0 (0%)	0 (0%)	4 (50%)	4 (50%)
B3 AG	5 (24%)	1 (5%)	8 (38%)	7 (33%)
C1 AG	0 (0%)	0 (0%)	1 (33%)	2 (67%)
C2 AG	0 (0%)	0 (0%)	2 (67%)	1 (33%)
D SG	0 (0%)	0 (0%)	1 (33%)	2 (67%)
Glenoid Version (°):				
-Preoperative (CT1)	-16.0±8.1	-13.9±6.5	-14.5±8.8	-10.8±9.0
-Immediate Postoperative (CT2)	-10.6 [-13.4,-5.7]	-8.2 [-12.3,-6.2]	-9.0 [-12.4,-5.0]	-8.1 [-11.6,-3.9]
-Postoperative Correction Relative to Vault (CT2 – Vault)	-4.9 [-6.9,2.1]	-2.6 [-5.3,-1.2]	-2.0 [-5.0,2.0]	-2.0 [-5.5,1.9]
-Postoperative Correction Relative to Pathology (CT2 – CT1)	1.1 [-1.2,12.4]	4.3 [-0.3,9.6]	4.9 [0.3,10.4]	1.7 [-2.1,6.9]
-Absolute Change, 2 year follow-up (CT3 – CT2)	2.9 [1.5,3.9]	1.5 [0.8,2.3]	2.9 [1.7,4.1]	1.0 [0.4,1.8]
Glenoid Inclination (°):				
-Preoperative (CT1)	3.4±4.6	3.5±5.3	5.1±4.6	5.0±5.2
-Immediate Postoperative (CT2)	5.9 [1.9,10.4]	8.2 [4.1,11.5]	5.4 [2.0,10.0]	6.0 [2.6,8.7]
-Postoperative Correction Relative to Vault (CT2 – Vault)	0.1 [-3.1,4.9]	2.6 [1.4,3.7]	-1.0 [-4.0,2.0]	0.3 [-2.4,2.9]
-Postoperative Correction Relative to Pathology (CT2 – CT1)	0.9 [-0.8,7.5]	4.5 [3.8,4.9]	-0.4 [-2.7,3.4]	1.2 [-2.5,3.9]
-Absolute Change, 2 year follow-up (CT3 – CT2)	6.0 [3.4,8.2]	2.1 [1.7,2.1]	3.6 [3.0,4.9]	1.2 [0.6,2.0]

Combined Absolute Version & Inclination Change, 2 year follow-up (CT3 – CT2) (°):	9.4 [5.7,12.2]	3.3 [2.5,4.4]	5.9 [5.0,8.2]	2.1 [1.4,3.4]
Joint Line Position (mm):				
-Preoperative Joint Line Relative to Vault (CT1 – Vault)	-3.7 [-6.0,-1.9]	-3.1 [-3.9,-2.4]	-1.8 [-3.2,-1.2]	-2.5 [-4.0,-1.3]
-Postoperative Correction Relative to Vault (CT2 – Vault)	-0.2 [-1.8,0.4]	0.1 [-1.0,0.5]	0.3 [-1.4,1.2]	-0.1 [-1.5,1.0]
-Postoperative Correction Relative to Pathology (CT2 – CT1)	2.9 [2.1,3.7]	2.6 [2.5,3.3]	2.3 [1.5,3.1]	2.5 [1.8,3.2]
-*Joint Line Change, 2 year follow-up (CT3 – CT2)*	-0.8 [-1.2,-0.4]	-0.6 [-1.3,0.2]	0.0 [-0.3,0.2]	0.1 [-0.1,0.3]
Humeral Head Alignment (%):				
-Preoperative HSA-AP (CT1)	-18.2±8.9	-14.1±8.6	-17.9±11.5	-12.4±11.0
-Preoperative HGA-AP (CT1)	-4.5±5.7	-1.3±5.6	-5.3±7.1	-3.2±6.2
-Change in HSA-AP, 2 year follow-up (CT3 – CT2)	-0.3 [-1.9,4.8]	2.7 [-0.5,6.2]	-0.4 [-4.2,3.5]	0.3 [-2.7,2.2]
-Change in HGA-AP, 2 year follow-up (CT3 – CT2)	0.0 [-1.6,3.9]	1.2 [-0.7,5.0]	0.7 [-2.5,4.5]	0.3 [-2.4,1.9]
-Preoperative HSA-SI (CT1)	7.3±4.2	11.4±4.2	8.2±5.2	8.6±6.6
-Preoperative HGA-SI (CT1)	4.3±4.5	8.1±0.87	3.7±4.4	4.3±5.1
-Change in HSA-SI, 2 year follow-up (CT3 – CT2)	5.8 [2.9,8.5]	1.3 [-1.3,4.5]	4.5 [2.1,7.9]	2.4 [-0.2,4.5]
-Change in HGA-SI, 2 year follow-up (CT3 – CT2)	-0.9 [-2.1,0.3]	0.4 [-1.8,2.5]	0.3 [-2.0,2.0]	1.1 [-0.4,3.1]
Penn Shoulder Score at minimum 2 year follow-up:	93.6 [89.0,97.0]	94.4 [71.0,98.4]	96.8 [89.0,100.0]	95.0 [88.0,99.0]

HSA: Humeral scapular alignment, HGA: Humeral glenoid alignment, AP: Anteroposterior, SI: Superoinferior
Mean ± Standard Deviation, Median [Interquartile Range], N (%).

Examples of interpretation of significant associations with glenoid component shift (Table III):

- The odds of a B2 glenoid with a standard glenoid (SG) component demonstrating glenoid component shift at minimum 2 year follow-up are (4.41 – 1.00)*100 = 341% (95% CI: 35%, 1343%) higher than the odds of an A1 glenoid with a SG component demonstrating glenoid component shift at minimum 2 year follow-up.
- For every 10° degree increase in preoperative glenoid retroversion, there is a (1.67 – 1.00)*100 = 67% (95% CI: 14%, 145%) increase in the odds of demonstrating glenoid component shift at minimum 2 year follow-up.
- For every 1mm increase in medialization of the glenoid component from CT2 to CT3, there is a (3.37 – 1.00)*100 = 237% (95% CI: 65%, 590%) increase in the odds of demonstrating glenoid component shift at minimum 2 year follow-up.
- The odds of a case with CPO demonstrating glenoid component shift at minimum 2 year follow-up are (4.17 – 1.00)*100 = 317% (95% CI: 31%, 1222%) higher than the odds of a case without CPO demonstrating glenoid component shift at minimum 2 year follow-up.

Examples of interpretation of significant associations with the continuous variable, combined absolute glenoid component version and inclination change from CT2 to CT3 (Table III):

- On average, for every 10° degree increase in preoperative glenoid retroversion, there was a combined absolute glenoid component version and inclination change from CT2 to CT3 of 0.9° (95% CI: 0.3°, 1.6°).
- On average, for every 1mm increase in medialization of the glenoid component from CT2 to CT3, there was a combined absolute glenoid component version and inclination change from CT2 to CT3 of 3.3° (95% CI: 2.4°, 4.3°).
- The combined absolute glenoid component version and inclination change from CT2 to CT3 was 3.5° (95% CI: 1.7°, 5.3°) higher, on average, when CPO was present compared to when CPO was absent.

Examples of interpretation of significant associations with central peg osteolysis (CPO) (Table III):

- The odds of a B3 glenoid with an augmented glenoid (AG) component demonstrating CPO at minimum 2 year follow-up are (8.00 – 1.00)*100 = 700% (95% CI: 45%, 4309%) higher than the odds of an A1 glenoid with a SG component demonstrating CPO at minimum 2 year follow-up.

- For every 1mm increase in preoperative joint line medialization, there is a (1.28 – 1.00)*100 = 28% (95% CI: 4%, 57%) increase in the odds of demonstrating CPO at minimum 2 year follow-up.
- For every 1mm increase in medialization of the glenoid component from CT2 to CT3, there is a (7.82 – 1.00)*100 = 682% (95% CI: 210%, 1875%) increase in the odds of demonstrating CPO at minimum 2 year follow-up.
- For every 5° degree increase in combined absolute glenoid component version and inclination change from CT2 to CT3, there is a (2.54 – 1.00)*100 = 154% (95% CI: 47%, 338%) increase in the odds of demonstrating CPO at minimum 2 year follow-up.