

Clinical summary

Clinical and radiographic outcomes after total shoulder arthroplasty with an anatomic press-fit short stem

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Purpose of the study

To evaluate early clinical and radiographic outcomes and complications after Total Shoulder Arthroplasty (TSA).

Demographics

118 cases comprised this study with 44 (37.3%) females and 74 (62.7%) males. The mean age of patients at surgery was 66.7 (range 25-93) years, the mean body mass index (BMI) was 29.5 ± 5.8 kg/m², and the mean follow-up was 3 (range 2-5) years.

Methods

Patients were included prospectively. Preoperative patients were examined by the senior surgeon. Postoperative clinical assessment was performed at 1 week, 6 weeks, 3 months, 6 months, and 12 months. After which the interval changed to annual clinical assessments.

Table 1: Significant improvement in shoulder functions and active mobility outcomes

	Preoperative	Postoperative	P value
Constant score	25 ± 115	80 ± 15	<.001
ASES	42 ± 18	88 ± 16	<.001
ASES – pain	5 ± 3	1 ± 2	<.001
WOOS	67 ± 17	13 ± 18	<.001
SANE	33 ± 24	73 ± 34	<.001
Forward flexion	79° ± 37°	160° ± 19°	<.001
Abduction	75° ± 37°	160° ± 20°	<.001
External rotation	7° ± 14°	45° ± 14°	<.001

ASES: American Shoulder, and Elbow Surgeons score; WOOS: Western Ontario Osteoarthritis of the Shoulder index; SANE: Single Assessment Numeric Evaluation



Aequalis Ascend

- Grit-blasted (GB) short press-fit stem
- 85 patients; 72%
- Follow-up: 3.5 ± 1.08 years



Tornier Flex

- Proximal porous coating (PPC) short press-fit stem
- 33 patients; 28%
- Follow-up: 2.03 ± 0.26 years (significantly shorter)

Results

- All shoulder function scores, and active mobility measurements significantly improved ($P < .001$) (Table 1).
- Patient satisfaction ratings also significantly improved with 94.6% of patients reporting as satisfied and very satisfied with their shoulder ($P < .001$).
- 7 (5.9%) cases of radiolucent lines in patients who received Aequalis Ascend implant.
- There were 6 (5.1%) complications, 4 intra-operative and 2 postoperative. Postoperative complications were deep infection and dislocation; both were revised.

Conclusion

Patients undergoing TSA with a press-fit short stem had significant short-term clinical improvements from preoperative to final follow-up with few complications and minor radiographic changes. The authors conclude that the addition of PPC to the stem created a significant change to the implant, potentially improving metaphyseal ingrowth.

Key takeaways

- TSA with a press-fit short stem resulted in significant improvement in shoulder function scores and active mobility measurements from preoperative to final follow-up ($P < .001$)
- 95.6% of patients reported being satisfied and very satisfied with their shoulder ($P < .001$)
- Although patients who received a PPC Ascend Flex stem had a shorter follow-up, none of these patients were observed to have radiolucent lines (0/33; 0%).
- No clinical signs of loosening or subsidence in any patients with a minimum 2-year follow-up.
- Press-fit stems with PPC provide a more reliable fixation option than stems with GB by increasing the surface area for bone ingrowth.