

Clinical and Functional Outcomes of Scaphoid Excision with Four-Corner Fusion Using a Circular PEEK plate

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Objectives:

Scaphoid excision with four-corner fusion is a limited wrist arthrodesis that has proven effective in reducing pain while preserving motion in patients with radioscaphoid arthritis. In this study, early results and functional outcome scores are reported for scaphoid-excision with four corner arthrodesis using a circular poly-ether-ether-ketone (PEEK) plate (Xpode®, Trimed®, Valencia, CA)

Methods:

We conducted a retrospective review of 17 consecutive scaphoid excisions with four-corner arthrodeses performed by a single surgeon. All patients returned for routine follow up examination which included visual analog scale scores, functional outcome scores, radiographic evaluation, objective evaluation of motion and work status. One patient required revision surgery for non-union.

Results:

The average follow up period was 19 months with minimum follow up of six months. One patient, a federal prisoner, was transferred to a different institution prior to radiographic union. All remaining patients demonstrated radiographic union by six month post-operative radiographs. Average visual analog score (VAS) was 0.5 at rest, 4 with motion and 5.6 at worst. Fourteen out of seventeen patients would have the procedure done again. The average Disabilities of Arm Shoulder and Hand score was 24. Ten of 12 employed patients returned to their pre-surgery occupation. Four patients are retired, and one is a prisoner.

| | Percentage of Unaffected Upper Extremity |
|------------------|--|
| Wrist Extension | 87% |
| Wrist Flexion | 57% |
| Radial Deviation | 90% |
| Ulnar Deviation | 59% |
| Grip Strength | 71% |
| Pinch Strength | 92% |

Conclusions:

Scaphoid excision with four-corner fusion using a circular PEEK plate produced reliably good results in this series of 17 consecutive patients. All patients evaluated at 6 months post-operatively went on to radiographic union. Average range of motion and VAS scores were comparable or superior to results previously reported with the use of a recessed circular dorsal plate.

