

Five-Year Clinical and Radiographic Outcomes After Minimally Invasive Sacroiliac Joint Fusion Using Triangular Implants

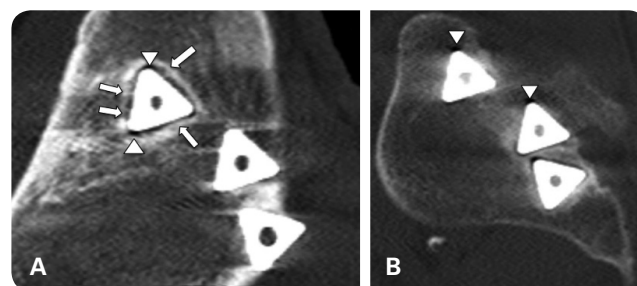
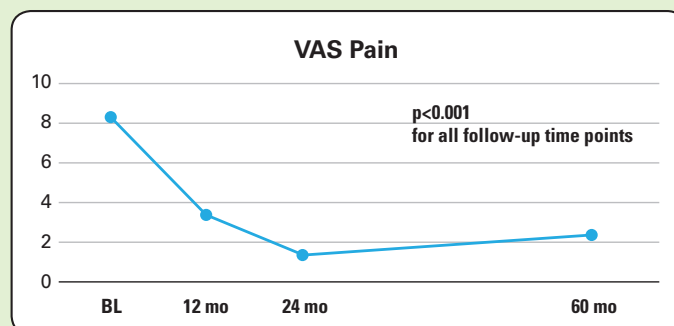
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KEY POINTS

- Significant clinical pain relief observed at 12 months was maintained for 5 years ($p < 0.001$).
- 5-year mean ODI score (21.5) indicates minimal to moderate disability.
- At 5 years, statistically significant functional improvement was seen in 6 of 8 domains of the SI joint-related health outcomes survey.
- Qualitative review of x-ray and CT imaging revealed
 - Increased bone density adjacent to all implants
 - CT scans showed 87% (13/15) of patients had intra-articular osseous bridging
 - No evidence of implant loosening or migration
- No long-term complications.



(A) Sagittal CT scan of the iliac portion of the joint shows a sclerotic margin surrounding the edges of the superior implant. Areas of "spot-welds" (arrows) noted between the sclerotic margin and implant walls is suggestive of biological fixation. Artifacts are apparent at the corners of the implant (triangle). (B) The sacral side shows increased bone density adjacent to the implant walls.

ABSTRACT

Object: Previous reports of minimally invasive (MIS) sacroiliac (SI) joint fusion for low back, SI joint, and buttock pain secondary to SI joint disorders have shown favorable short- and mid-term outcomes. Herein we present 5-year clinical and radiographic outcomes after MIS SI joint fusion using a series of triangular porous titanium plasma spray (TPS) coated implants.

Methods: Consecutive patients treated with MIS SI joint fusion for degenerative sacroiliitis and/or sacroiliac joint disruptions were evaluated. Pain on VAS, an SI joint specific survey and Oswestry Disability Index (ODI) were administered. X-ray and CT scans were obtained to assess the implants.

Results: Of 21 patients treated, 17 were available for the study. Mean age was 58 years (range 36-85), 77% were female and 47% had prior lumbar spinal fusion. Pain on VAS improved from 8.3 at baseline to 2.4 at 5 years; 88% of patients reached Substantial Clinical Benefit. Mean ODI score at 5 years was 21.5 (SD 22.7). Patient satisfaction achieved at 12 months was maintained for 5 years (82%). A qualitative review of x-ray and CT imaging showed increased bone density immediately adjacent to all implants, intra-articular osseous bridging in 87% of patients and no evidence of implant loosening or migration.

(continued on back)

Conclusions: Long-term clinical and radiographic outcomes after MIS SIJ fusion are favorable. Clinical improvements observed at 12 months postoperatively were maintained at 5 years. There was no evidence of long-term complications, implant loosening or migration. Patients who did not achieve large improvements were affected by multiple severe concomitant degenerative conditions of the lumbar spine, pelvis, and/or hip.

Keywords: Arthrodesis, minimally invasive surgery, previous spine surgery, sacroiliac joint, SI joint fusion.

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The iFuse Implant System is intended for sacroiliac joint fusion for conditions including sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruptions and degenerative sacroiliitis. As with all surgical procedures and permanent implants, there are risks and considerations associated with surgery and use of the iFuse Implant. Please review the iFuse Instructions For Use for a complete discussion of contraindications, warnings, precautions, and risks.