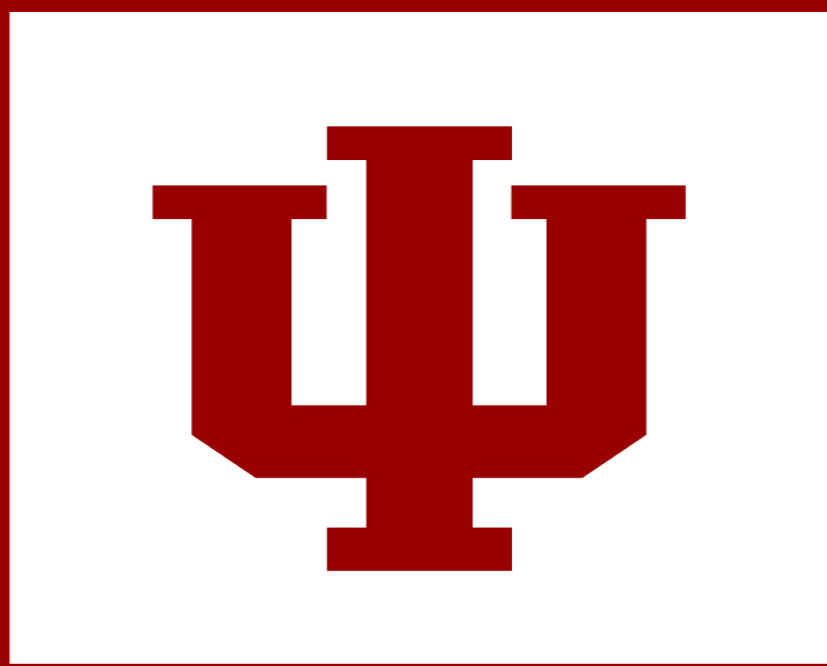




Minimally invasive sacroiliac joint fusion with bone allograft implant in refractory sacroiliitis

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Introduction

Approximately one third of patients with chronic low back pain have associated sacroiliac joint (SIJ) dysfunction (Sayed 2022). However, SIJ dysfunction is under diagnosed and under-treated (Miller 2014). The consequences of struggling with pain are crippling physically and mentally. Minimally invasive SIJ fusion has shown to be efficacious at treating SIJ dysfunction (Abbas 2022). Our patient struggled with chronic low back pain with radiculopathy and accompanying sacroiliitis for over 10 years. Here we describe her journey and how utilizing minimally invasive SIJ fusion technique with an implanted bone allograft changed the trajectory of her pain and gave her new hope.

Case Presentation

44 year-old female patient with a past medical history of chronic lower back pain, sacroiliitis , presented to our interventional pain clinic for management of low back pain of 10 years. Her pain previously was treated utilizing opioid pain medication and physical therapy for 5 years. Furthermore, the patient underwent spinal cord stimulation x2 with no resolution . Following this, the patient had surgical SIJ fusion with bone graft without improvement in her symptoms. Eventually even after all of this the patient required escalation of care and an intrathecal pain pump with ziconotide. Understandably after many failed treatments and interventions, the patient felt discouraged about her continued pain and became depressed. The patient's CT imaging (Figure 1) was reviewed in our clinic which revealed protruding implants from her prior surgical intervention and no fusion of the joint. The patient was offered a minimally invasive bilateral SIJ fusion procedure with bone allograft. Shortly after the procedure, the patient noted 90% improvement in her symptoms and a new outlook on life. Within one week, patient had significant functional gains and was ultimately able to wean down on her opioid medication regimen and had her intrathecal pain pump explanted.



Figure 1: Initial pre-procedural CT showing protruding implants from previous SIJ fusion



Figure 2: Post-procedural radiograph showing cortical bone implant within the sacroiliac joint

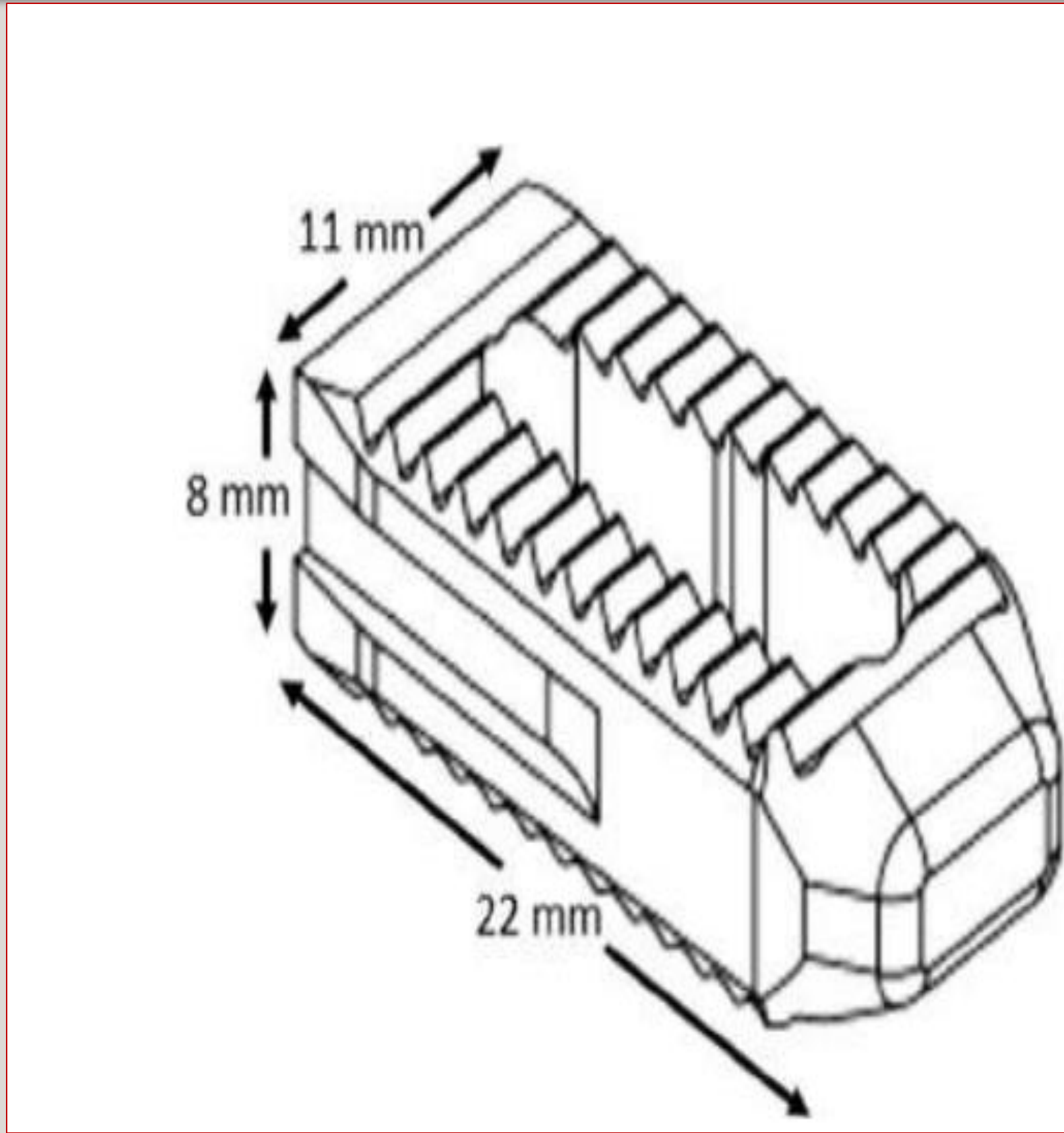


Figure 3: Illustration of rectangular shaped cortical allograft (Sayeed 2023)

Discussion

What is minimally invasive Sacroiliac joint fusion? It is a widely performed type of SIJ fusion in which small incisions are made and implants are inserted through the SIJ. In our patient's case, one bone allograft implant was placed within each SI joint. One clear advantage of this is there is minimal soft tissue disruption, smaller incisions and faster recovery time. This is in direct contrast to the more traditional approach: Open(anterior or posterior approach) SI joint fusion. This involves a larger incision for more direct visualization of the SIJ. For example, the anterior open approach involves resection of the SI joint cartilage and use of the plate or screws across the joint for stabilization. Our patient underwent a posterior approach minimally invasive SIJ fusion utilizing a cortical allograft which was inserted posteriorly towards the anterior portion of the sacroiliac joint. The allograft served to relieve stress on the joint cartilage and ligaments. The serrations on the implant allowed joining of the medial and lateral portions of the joint. Fusion of the joint subsequently allows this region becoming the center of rotation within the joint and overall causes less movement of the sacroiliac joint(Sayed 2023). The restriction of movement within the sacroiliac joint causes less stress on the joint upon physical activity. A combination of a relatively short procedure , quick recovery time(6 weeks) could make minimally invasive sacroiliac joint fusion with a cortical bone allograft a revolutionary treatment for patients with refractory sacroiliitis.

Patient Timeline

- 2010: Patient slipped on ice and it was the start of her chronic lower back pain. She had multiple spinal injections/ nerve blocks with no relief
- 2018 to 2023: Patient underwent a lower lumbar fusion surgery without any significant relief. She then underwent spinal cord stimulator implantation without any significant relief of her pain. Subsequently underwent removal of spinal cord stimulator. As a last resort, patient had an intrathecal pain pump with Prialt and bilateral SIJ fusion with bone graft and still had inadequate pain control.
- November 2023: Patient presented as a new patient to our interventional pain clinic for management
- December 2023: Increased Prialt dose with no significant improvement. Bilateral sacral nerve root radiofrequency ablation denied by her insurance company.
- February 2024 : Completed bilateral minimally invasive SIJ fusion with bone allograft.
- April 2024 : 90% resolution of back pain symptoms. ITP Prialt weaning started.
- September 2024: Due to patient's significantly improved pain scores and functional gains, patient requested her intrathecal pump be explanted.
- October 2024: Patient continues to have well controlled pain after her intrathecal pain pump was explanted.

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