**SI Joint fusion R**

OPERATIVE PROCEDURE

Preoperative diagnosis; - Sacroiliac joint pain and dysfunction, right side, after the previous fusion.

Postoperative diagnosis; - Sacroiliac joint pain and dysfunction, right side, after the previous fusion.

Surgeon : Amit Bhandarkar MD

Asst. none

Complication: None

Specimens: None

Blood loss Negligible

Procedure #1 : Sacro-iliac joint fusion, right side

Procedure #2: Placement of pelvic instrumentation and fixation

Procedure #3: Use of bone autograft

Procedure #4: Use of bone allograft

Procedure #5: Use of C-arm imagery for mapping and navigation

Operative procedure

The patient was taken to the operating suit, was placed prone on the radiolucent operating room table and was prepped and draped sterilely. After anesthesia induction, site marke verification, timeout, we brought the C-arm in and performed our mapping, fully mapping of the patient's inlet, outlet views, as well as his AP pelvis. We also mapped and inlet, Judet combination view as well as an outlet Judet combination view. We also performed a lateral sacral view matching for the sacral alar scope. Once this was performed and mapped out, we used the mapping points to then triangulate, for getting an entry point, an incision point in the skin. This was made.

 An incision was approximately 17 mm 20 mm was made through which we placed a blunt trocar down to the upper shelf of the pelvis. Upon doing so, we were able to, with lateral C-arm guidance again take appropriate starting point. We placed a drill and made an appropriate drill guide and advanced it in an appropriate trajectory based upon our CT scan and preoperative planning to the joint space, making sure on all current imaging AP, inlet, outlet, inlet Judet , and outlet Judet, to have a good trajectory of the drill and traversing joint in roughly perpendicular manner. Upon doing this, we had was a drill basically into the joint space, but not into the sacral side. The bone was noted to be extremely hard throughout. We then dilated up the entry through the muscles and then used the reamer device to drill through the pelvis into the sacroiliac joint. All the reamings, approximately 2 cc to 3 cc of bone was mixed with allograft for usage of bone grafting material. We thenentered into the joint with a reamer again taking care not to reach the cortical bone on the sacral side of the joint. We use this skiver tool to help remove cartilage and the sacral side and then inset over bone-cutting tools and joint prepped was, starting with the unilateral ilium cutter followed by the sacral cutter for the two-sided joint cutter, again, always on the right side. We continued down with the process. The multiple planes of imaging where used throughout each of the tools to navigate and make sure we were safely within the joint, not coming out top of anterior or dorsal. Been noted on several views that we then were cutting nicely into the joint and and widening joint space. Upon doing this and completing this, we ultimately placed approximately 5 cc of bone graft material into the joint space using autograft reamings along with the bone allograft bulking agent.

 Next reinserted cannula througt the outer working cannula that was impacted into the pelvis, with a central guide drill out towards the foramina at S1, we were above the neural foramina. At this point we used a reamer and reamed just through the sacral cortex, such that we're able to have access to the locking screw. Fusion rod was then placed. It was an approximately 55 mm screw, 12 mm diameter placed across the sacroiliac joint in that manner to arm tightness with the solid fixation. We then noted on all imaging that the screw was nicely away from the neural foramina this nicely within the joint nicely perpendicular to the joint. We then diverted our attention towards placement of a derotations screw. We placed it slightly more cephalad into the S1 vertebral body. We took the cephalad incision and took into consideration all the different imaging that we have be to the projected directly lateral making sure that is appropriately placed within the S1 also were cephalad and away from the previously placed screw. The guide pin was appropriately positioned for S1 screw and was checked and it is not breaching any anterior cortex and was again having nice trajectory across sacroiliac joint. The S1 screw was then drilled with a reamer. The measurement was done after using dilator and appropriate size 40 mm screw was then inserted and was then gradually tightened under C-arm guidance. The teardrop view was taken so as to confirm that it was flush with the iliac wing after everything was tightened we removed all the guidewires and pins within the thorough wash with antibiotic solution.

 Once again to multiplanar imaging was done to confirm we had good position with respect to implants. they all appeared in safe zone. The patient tolerated the procedure well. We irrigated the wounds and then closed in layers followed byt skin glue and sterile dressing. A deep injection of Marcaine with epinephrine Toradol and Depo-Medrol was placed for assistance in postoperative pain control. The patient was able to transport to the recovery in stable condition.