The sacroiliac joint (SIJ) is a challenging radiofrequency target owing to variant anatomy of the S1, S2, and S3 lateral branches. Bipolar RF techniques have been described to expand lesion volume potentially increasing the likelihood of target ablation. Currently, there is no objective test for evaluating technical success following dorsal SIJ RF denervation. MRI may be a useful to correlate the ablation zone with target anatomy.

**OBJECTIVE:** A MRI protocol was developed to quantify volume, and evaluate the spatial characteristics of tissue change pursuant to dorsal SIJ RF denervation.

**METHODS:** After consent a 64 year old male underwent right-sided dorsal SIJ RF denervation. Electrodes (1.45 mm OD) were paired starting at the base of the S1 SAP progressively caudal <10mm lateral to the PSFA of S1, S2, and S3 with approximately <20mm gaps. The Baylis Pain Management generator in bipolar mode delivered an 80C x 150 seconds heat cycle. Fourteen days post procedure a MRI study was optimized for both spatial and contrast resolution. A sequence sensitive to edema with preserved spatial resolution for accurate volumetric analysis was obtained. Lesion size was scored with an axial fat suppressed proton density sequence (echo train 8, TR 3000ms, TE 26ms) at a slice thickness of 5mm with a 1mm gap. A region of interest curve was drawn around edematous tissue on each slice providing an area, which was totaled for all of the slices. The total was multiplied by an effective slice thickness of 6mm providing the total volume of edematous tissue.

**RESULTS:** Right posterior parasacral edema extended from L5-S1 through S4 segments. Total volume of tissue change was 24.4 cm³. The lesion was tubular with average diameter of 11.7 mm. Tissue change incorporated described dorsal SIJ innervation.

**CONCLUSION:** A MRI protocol is described which demonstrates RF induced tissue changes following dorsal SIJ denervation.