Symptomatic Ilio-Sacral Screw Removal Following Pelvic Trauma

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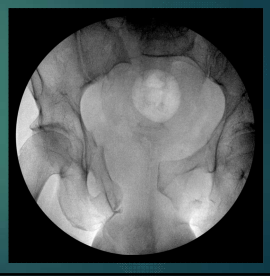
Disclosures

- None

Background

- Evolution of treatment prone → supine percutaneous screws.
- Advantages- treat posterior pelvic ring disruption with **significantly less morbidity** than open reduction internal fixation
- Potential disadvantage of using ilio-sacral screw fixation is **violation** of the sacroiliac joint
- Subsequent symptomatic arthrosis, implant loosening, or implant irritation due to the retained mobility of the joint, but how often?

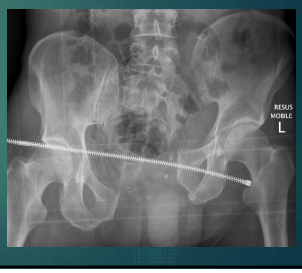


Study Design

- Retrospective Chart Review
- A Level 1 and a Level 2 Trauma Center
- Level 4 Evidence

Patients and Methods

- 471 consecutive patients treated with either an ilio-sacral or trans-sacral screw
- Identified via CPT code over a 10 year period.
- Exclusion criteria:
  - 7 patients were excluded having spino-pelvic fixation in addition to IS or TS screw
  - 7 Patients excluded with age <16 years



Results

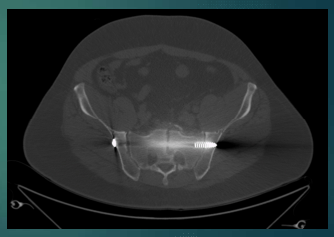
- 25/457 patients underwent implant removal (5.4%).
- 2 patients were lost to follow-up, leaving 23 for analysis.
- There were 13 males and 10 females.
- Age at implant removal was 16-19: 4, 20-29: 3, 30-39: 3, 40-49: 8, 50-59: 5.
- 4 screws were loose prior to removal (17%)
- Average time to screw removal was 10.7 months (4-26m)

Results

- Clinical impact was documented in 18/23 patients
  - 15 (83.3%) obtained subjective relief of symptoms, and
  - 3 (16.7%) with no notable improvement.
- There were NO patients who complained of increased pain after screw removal.
- APC2 injuries accounted for 56%
- LC1 injuries accounted for 22%
- There were 13 ilio-sacral and 10 trans-sacral screws removed .

Results

- There were no pelvic rings that displaced after screw(s) were removed.
- There was 1 zone 3 sacral fracture nonunion, did not displace after screw removal



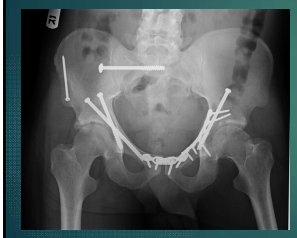
6 months post op

Table 1. Descriptive Characteristics of Patients Undergoing Ilio-Sacral Screw Removal

Age	Gender	Injury Pattern	SI or TS	S1 or S2	Threads	Washer	Reduction Quality	Loose?	Time to Removal (Months)	Pain Relief?
17	F	LC2	si	s1	PT	y	E	n	6	Y
17	F	LC1	si	s1	PT	y	E	n	13	Y
18	F	LC3	ts	s2	PT	y	E	n	6	Y
19	F	LC1	si	s1	PT	y	E	n	26	Y
20	M	APC2	ts	s2	PT	y	VG	n	8	NO FU
22	F	LC2	SI	s1	PT	Y	E	N	6	N
29	F	APC2	si	s2	PT	y	VG	n	14	NO FU
38	M	APC3	si bilateral	S1,S1, S1	PT	y	E	y	7	Y
39	F	LC1	ts	s1	PT	y	E	n	6	Y
39	M	APC2	si	s2,s2	PT	y	E	n	10	Y
40	M	APC2	si	s1	PT	y	E	n	22	Y
40	M	APC2	si	s1	PT	y	E	n	11	Y
45	F	LC3	ts bilateral	s1,s2	PT,FT	y	E	n	10	NO FU
47	M	APC2	ts	s1	FT	y	E	n	9	N
48	M	APC2	ts	s2	PT	y	E	n	19	Y
48	M	APC2	si	s2	PT	y	E	y	17	Y
49	M	APC2	si	s1	PT	y	E	n	13	Y
49	M	APC2	si	s1,s2	PT	y	E	y	4	Y
50	F	LC1	si	s2	PT	y	E	Y	6	Y
50	M	LC1	ts bilateral	s1	FT	y	E	n	8	NO FU
51	M	APC2	ts	s1	PT	y	VG	n	13	NO FU
51	F	APC2	ts	s1	FT	y	E	n	6	Y
53	M	APC2	ts	s2	PT	y	E	n	6	Y

si-sacroiliac, ts-transsacral, PT-patially threaded, FT-fully threaded, E-excellent, VG-Very Good

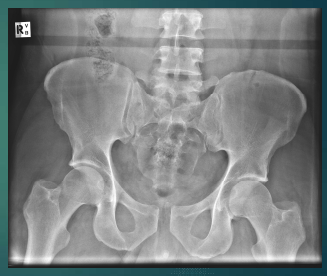
Discussion



- To date there are no descriptive studies, retrospective or prospective
- Study demonstrates a removal rate of 5.4%
- 83% of those had symptomatic improvement

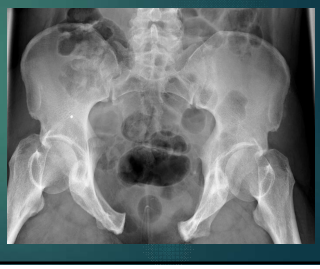
Discussion

- Several recent studies illustrating no difference for transacral screws violating the uninjured Sacroiliac joint.
- This correlates with our study. 13 IS and 10 TS screws removed, TS did not seem to be any more symptomatic



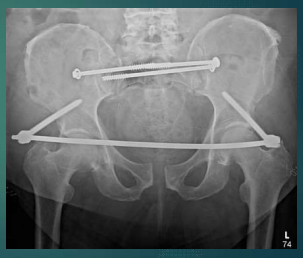
Discussion

- Does the type, severity of the injury predict future pain?
- APC2 pelvic ring injuries represented 56% of symptomatic hardware



Discussion

- Average time to removal of 10.7 months- symptomatic early, suggests minimal late symptoms
- Those patients whose symptoms improved reported anywhere from 20-100% relief



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Questions?