Anterior Pelvic Fixation: Superior Pubic Ramus Screws or External Fixation?
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Purpose: External fixation (ex-fix) and superior pubic ramus screws (SPRSs) represent common fixation methods for the treatment of anterior pelvic ring injuries. The aim of this study was to compare the outcomes of these 2 fixation methods regarding secondary displacement, healing time, and complication rate.

Methods: A retrospective cohort study was conducted on all patients surgically treated for anterior pelvic ring injuries with ex-fix and SPRSs at a single Level I trauma center between 2009 and 2019. Exclusion criteria were skeletally immature patients, less than 6 months of follow-up, isolated anterior ring injuries, "open book" injuries, fractures treated with isolated anterior fixation methods or posterior fixation methods other than iliosacral screws, and patients lost to follow-up. Demographic details, mechanism of injury, and ISS were collected. Treatment method, postoperative protocol, complications, and time to union were recorded. Fractures were classified according to the OTA/AO classification. Radiographic measurements were obtained according to validated methods for rotational, vertical and coronal displacements on immediate postoperative and last follow-up radiographs. Patients were divided according to the fixation method into 2 groups (ex-fix, SPRS) and data collated were statistically analyzed utilizing t-test and odds ratio.

Results: Out of 400 patients identified for possible inclusion, 34 patients treated with ex-fix and 38 with SPRS met the inclusion criteria. Mean follow-up time was 17 months (range, 7-104). No difference was found between the 2 groups regarding age, comorbidities, mechanism of injury, ISS, fracture classification, or postoperative weightbearing protocol. Mean time to radiographic union was 3 (2-5) and 2.8 (2-4) months for ex-fix and SPRS groups, respectively ($P>0.05$). A tendency to higher complication rate was found in the ex-fix cohort (7 pin-site infections and 1 iatrogenic nerve injury versus 3 screw protrusions and removal in the SPRS group, $P = 0.08$). No difference was found regarding secondary displacement in rotational and coronal planes among the 2 groups, while a tendency to a higher coronal displacement was found in the ex-fix group ($P = 0.06$).

Conclusion: Comparing the 2 anterior pelvic fixation methods, we found no statistical difference in secondary displacement, time to union, and complication rate between the 2 groups. Further studies are desirable to provide further evidence in the outcome of treatment in this cohort of patients.