Paper - Annual Meeting

Paper Session: General Interest

Evaluation and Treatment of Pediatric Pelvic Ring Injuries

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Purpose: A variety of systems exist to classify pelvic fractures, but most fail to be practically applied to pediatric pelvic fractures. Pediatric pelvic fractures are rare and treatment varies widely as adult treatment algorithms do not suggest the most appropriate intervention. The purpose of this study is to review the incidence, presentation, treatment, and complications of pediatric patients with pelvic ring injuries at a Level-I trauma center.

Methods: A retrospective chart review was conducted of all pediatric patients (17 years or younger) treated at our institution between October 2013 and June 2018 with pelvic fractures. Demographic data, admission vitals and laboratory tests, treatment, associated injuries, and complications were recorded. Plain radiographs and CT with surface rendered reconstructions were reviewed to analyze fracture patterns and the triradiate cartilage.

Results: We identified 124 patients with median age of 13 years. Most common mechanisms were motor vehicle collisions, auto-pedestrian accidents, and fall from height. Associated injuries included lower extremity fractures, traumatic brain injury, and solid organ injury. 85 (69%) were treated nonoperatively; 39 (31%) received surgical intervention. Of patients treated nonoperatively, 21 (25%) received a manipulation under anesthesia (MUA). Of patients treated operatively, 8 (21%) received closed reduction and application of an external pelvic fixation device, 25 (64%) received closed reduction and percutaneous screw fixation (CRPS), and 6 (15%) received open reduction and internal fixation (ORIF). Repeat intervention was required in 2 cases (5%) due to incongruence or loss of fixation. Overall mortality rate was 3% and was due to concomitant injuries, not from the pelvic injury.

Conclusion: Pediatric pelvic fractures can be managed nonoperatively in most cases. Certain patterns predict when an MUA should be performed. When surgical intervention is warranted, CRPS and closed reduction with application of an external fixator are the most common procedures. This can be safely done with minimal complications. Mortality is low and usually due to traumatic brain injury or solid organ injury; it is not from hemorrhage after pelvic ring injury. Patients should be closely examined for musculoskeletal lower extremity injuries as they are commonly associated.