LISFRANC INJURIES IN THE PEDIATRIC POPULATION: A CASE SERIES.

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Objectives
- Although relatively rare, Lisfranc injuries carry a high morbidity if missed or incorrectly treated.
- We present a descriptive analysis of these injuries, in the pediatric population.

Results
- 29 patients (17 females and 12 males) with mean age 13 years
- The most common mechanism of injury was falling (59%), while sports related injuries came second (34.5%).
- Foot Ecchymosis was observed in 33% patients.
- Most common injury type was fracture dislocation (69%), pure ligamentous injuries in 17%. Avulsion fracture was seen in 2 cases (7%).
- 88% of the fracture dislocation cases were classified as Myerson B2.
- Metatarsal fractures were the most common associated injuries (38%).
- 17% of cases were diagnosed with plain radiographs while 83% required advanced imaging (48% CT scan and 35% MRI).
- 41% of cases were managed non-operatively with cast/CAM boot, while (59%) underwent operative fixation, screws fixation was the most popular method (71%) followed by suture button device (17%) and K wires (12%).
- Patients were kept in Non-weight bearing status for average 6 weeks.
- The average Follow up period was 33 weeks.
- 19 (65%) patients responded to the clinical outcome questionnaire obtained over the phone. The average OxAFQ-C and VAS score for the operative group was 77% and 1.5 respectively compared to 68% and 1.7 for the non-operative group.
- Complications - Compartment syndrome and Skin blister problems (1 case each), 1 case developed tendo-achilles contracture after conservative treatment.

Method
- IRB approved retrospective chart review of the patient 18 years and younger who presented to a tertiary children’s hospital with Lisfranc injuries between 2010 and 2019.
- Data collected included demographics, mode of injury, clinical presentation, diagnostic imaging, fracture characteristics, management, and outcomes; the Oxford Ankle Foot Questionnaire for Children score (OxAFQ-C0) and visual analogue pain scale (VAS).

Discussion
- Lack of data on the topic suggests that this injury is rare or underdiagnosed in this age group, or both.
- There are no concrete guidelines about how to manage this injury in the pediatric population.
- Both conservative and surgical management showed good mid-term outcomes; with no reported long-term outcomes studies.
- ORIF using suture button showed equivalent outcomes compared to other methods of fixation, with no need for hardware removal surgery.

Conclusion
- High clinical suspicion should be maintained when pediatric foot trauma is encountered to diagnose Lisfranc injuries.
- Advanced imaging might be needed to confirm the diagnosis and for surgical decision making.
- There are multiple modalities for surgical fixation.
- The short and mid-term results for these injuries are satisfactory with adequate management.