

## 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 was 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.



Pre and Intra-operative Radiographs (AP) showing comparison of ORIF of Lisfranc Injury by Screw and Suture Button Technique

## 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.