ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 07, Issue, 07, pp.13664-13666, July, 2017

ORIGINAL RESEARCH ARTICLE

Open Access

LISFRANC INJURY IN ADOLESCENTS AN UNCOMMON CASE REPORT

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ARTICLE INFO

Article History:
Received 29th April, 2017
Received in revised form
14th May, 2017
Accepted 26th June, 2017
Published online 22nd July, 2017

Key Words:
Lisfranc,
Injuries,
Adolescents.

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ABSTRACT

Purpose: We describe the case of a 12 years old girl who suffered a condition, after she had suffered a trauma in her anterior aspect of her left forefoot in the position of plantar flexion during a sport activity. Which was treated in our hospital.
Methods: Under general anesthesia, an open reduction and internal fixation was performed with K-wires in cross configuration and was immobilized in a below-knee cast.
Results: She was discharged home the following day without bearing weight. 5 weeks post-operatively, K-wires and cast were removed and she was allowed to walk with two crutches. 2 months after the surgical procedure, she could walk without any pain and crutches.
Conclusion: Good results have been correlated to anatomical stable reduction. TMT joint injuries are considered indication of surgical treatment with a few exceptions because of the inability to obtain that stable reduction without operative treatment.

Citation: Al-Sadek, T., Al-Sadek, A., Dimitrov, G. and Marinov, K. 2017. "Lisfranc injury in adolescents. an Uncommon Case Report", *International Journal of Development Research*, 7, (07), 13664-13666.

INTRODUCTION

Injuries to the tarsometatarsal (TMT) joint or "Lisfranc joint" are infrequent in pediatric population. There is a little evidenc about its proper diagnosis and management because of limited number of case series. We describe the case of a 12 years old girl who suffered a condition, which was treated in our hospital.

CASE PRESENTATION

A 12 years old girl was admitted in our emergency department after she had suffered a trauma in her anterior aspect of her left forefoot in the position of plantar flexion during a sport activity. She has claimed of inability to bear weight and pain over her left forefoot.

On physical examination, we found swelling throughout her midfoot with pain over TMT joint and basis of her first and second metatarsals on palpation. There were no signs of compartment syndrome or neurovascular injury. On X-rays of her left foot (figures 1 and 2), we visualized the so-called "fleck sign" in the lateral aspect of medial cuneiform and widening of the spaces between first and second metatarsals and medial cuneiform and second metatarsal. She was diagnosed of fracture dislocation of left Lisfranc joint Myerson type B1 (figure 3).

MATERIALS AND METHODS

Under general anesthesia, an open reduction and internal fixation was performed with K-wires in cross configuration (figure 4 and 5). She was Immobilized in a below-knee cast.

Figure 1. AP diagnostic X-ray. "Fleck sign"

Figure 2. Lateral diagnostic X-ray. "Fleck sig

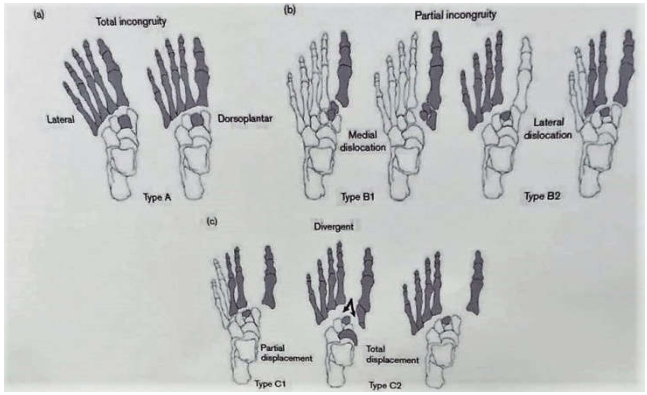

Figure 3. Mayerson classification of Lisfranc injuries

Figure 4. AP Post-operative X-ray

Figure 5. Lateral Post-operative X-ray

RESULTS

She was discharged home the following day without bearing weight. 5 weeks post-operatively, K-wires and cast were removed and she was allowed to walk with two crutches. 2 months after the surgical procedure, she could walk without any pain and crutches. The foot X-ray showed consolidation of the fracture with a 4 mm shift between first and second metatarsals. After 2 years of follow-up, she plays sports without limitation and no instability of the midfoot is detected on the physical exam.

There is no TMT osteoarthritic changes on X-ray (figures 6 and 7).

Figure 6. AP control X-ray (2 years).

Figure 7. Lateral control X-ray (2 years)

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DISCUSSION

The knowledge about Lisfranc joint injuries is based on studies in adult population because of few cases reported in children and adolescents (HILL, 2016). The mechanism of injury described is similar in both populations but in pediatric patients is more likely caused is sport activities. In order to make the diagnosis, it has been reported that the normal spaces between first and second metatarsals are below 3mm, approaching to adult values in the age of six (Knijnenberg, 2016). Good results have been correlated to anatomical stable reduction. TMT joint injuries are considered indication of surgical treatment with a few exceptions because of the inability to obtain that stable reduction without operative treatment. In contrast to adult population, children and adolescents can be managed with conservative treatment with good outcomes. In the largest pediatric case series published so far, it was reported that closed-physes injuries tend to surgical treatment whereas open-physes injuries tend to conservative treatment. In respect of future osteoarthritic changes in midfoot, it has been reported constant or occasional pain at mid-term in some cases of pediatric population (Veijola, 2013).

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