Case Report

Neglected Distal Femur Physeal Separation in a 12-Year-Old Child

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ABSTRACT

This is a rare case report of a neglected distal femur physeal separation in a 12-year-old child. The patient had sustained trauma to the right knee 2 months before presenting to the orthopedic department. The patient was initially managed by a bonesetter who had done manipulation and massage of the fractured segment. This resulted in the epiphysis of the distal femur to migrate anteriorly over the shaft. This, in turn, caused the distal femoral shaft to rotate posterolaterally and place the sharp distal femoral fragment directly below the popliteal vessels. Open reduction and internal fixation of fracture were done, and the patient was able to get back to his activities of daily living in a span of 12 weeks. In developing countries, factors such as poverty, quacks, bonesetters, negligence, and misinformation on part of the patient increase the frequency of neglected trauma in the lower socioeconomic strata.

Key words: Distal Femur, Trauma, Fracture

INTRODUCTION

- Isolated distal femoral physeal injuries are rare, representing 5% of all physeal injuries.[1-3]
- Salter-Harris type I and II injuries are the most common type.[1,2]
- They may be uncommon fractures, but they frequently have long-term complications; such as growth disturbances, with subsequent development of leg length discrepancy/angular and rotational deformities.
- The distal femoral physis grows fast of all physes and is the main growth center of the lower leg, contributing to approximately 40% of lower extremity length.[3]

Access this article online	
Website: themmj.in	Quick Response Code
DOI: 10.15713/ins.mmj.82	

CASE REPORT

History

- A 12-year-old male child presented to the orthopedic outpatient department with complaint of deformity over right knee and inability to walk for 2 months.
- The patient sustained trauma to the right knee while playing 2 months ago and was taken to bone setter initially and also had a history of massage over injury site.

On Examination

- The patient presented with Fixed Flexion deformity of 20° and shortening of 2 cm over Right lower limb.
- Further flexion was possible up to 40°.
- Hard swelling was palpable over popliteal fossa.

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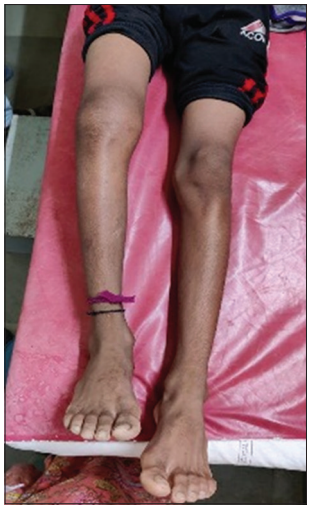
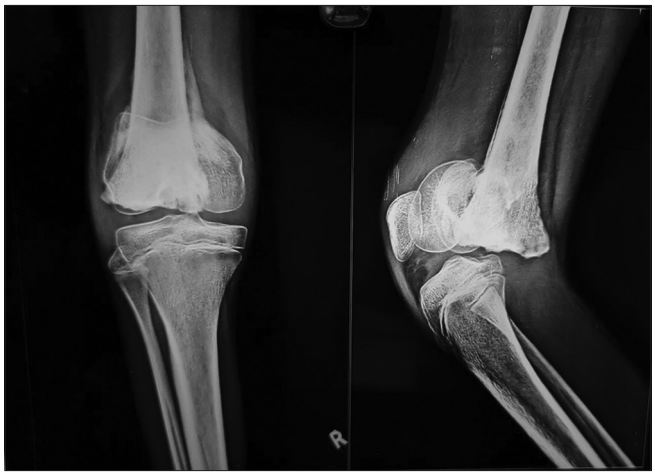


Investigations

- X-rays were done of the right knee which were suggestive of Right Distal femur physeal Separation (Salter -Harris type 1).



Pre-operative

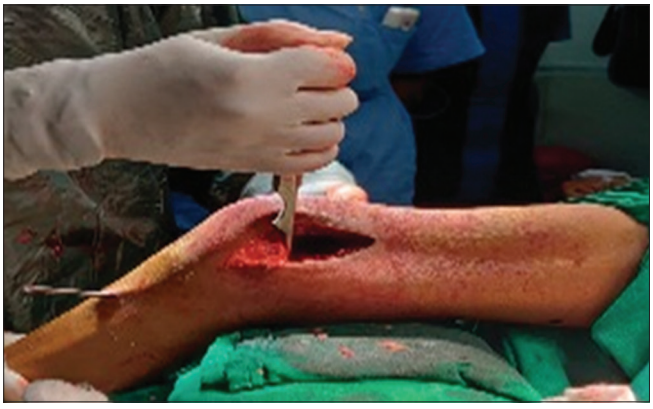
- Skeletal Tibial pin traction was given to relax soft tissue and to achieve extension at knee joint for duration of 7 days before the surgery, but it was not helpful.

Operative Treatment

Open reduction internal fixation with smooth cross k-wires by medial and lateral approach for distal femur was done. Fracture reduction was challenging and very difficult due to soft-tissue contracture and callus formation, and after removal of callus, reduction was achieved with joystick method. As fracture reduction was stable, it was fixed with k-wires and removed callus was used as bone graft. Post-surgery, long leg plaster was applied in 20° flexion with window over incision site.

Lateral approach for distal femur

Medial approach for distal femur

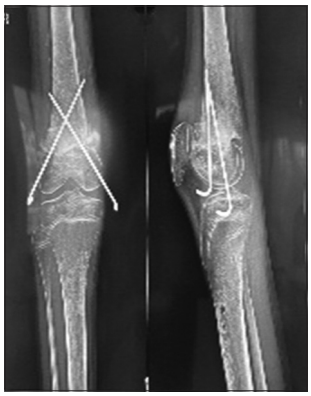


Joystick Maneuver for fracture reduction

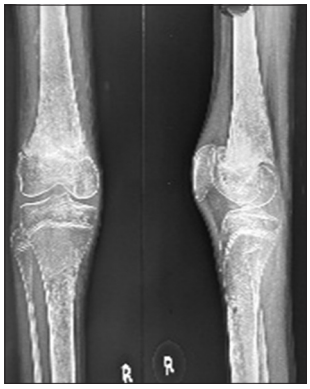
Immediate post operative X-ray

RESULTS

- The patient was kept in long leg plaster for 4 weeks and X-rays were done at 4 and 8 weeks. Long leg cast was converted to slab at 4 weeks. K-wires were removed at 8 weeks.
- At end of 12 weeks, patients Knee flexion was 5–80°, and the patient was able to fully weight bear with walker and 5° of flexion deformity was noted.



X-ray at 4 weeks



X-ray at 8 weeks

Patient status at 12 weeks

Patient status at the end of 12 weeks- Knee flexion -5–80°

CONCLUSION

- In developing countries poverty, misbeliefs in quacks (bonesetter) and negligence on part of patient and relatives increases the frequency of neglected trauma injuries in low-income society.
- Bonesetters perform rubbing that promotes stiffness.
- Growth disturbances and infectious complications end up convincing parents to bring patients to the hospital.
- However, preventative measures focusing earliest diagnosis and early treatment of children musculoskeletal traumas are essential.

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How to cite: Gore M, Kulthe S, Konde S, Ingale G. Neglected Distal Femur Physeal Separation in a 12-Year-Old Child. MIMER Med J 2022;6(2):46-49.

Source of Support: Nil. **Conflicts of Interest:** None declared.