International Journal of Contemporary Pediatrics
Garg A et al. Int J Contemp Pediatr. 2022 Oct;9(10):981-982
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/ 10.18203/2349-3291.ijcp20222432

Case Report

Congenital dislocation of patella in a preterm infant-a case report

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Received: 02 August 2022
Revised: 30 August 2022
Accepted: 05 September 2022

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ABSTRACT

Congenital dislocation of patella (CDP) is a rare condition which manifests after birth and is diagnosed late in childhood when the patellar ossification has already occurred and symptoms start to develop in patients. The exact etiology of this disease is still unknown. Diagnosis at such a later age leads to associated conditions like contractures, genu valgum etc. This condition should be diagnosed and treated as soon as possible after birth to significantly reduce the associated complications and to restore the normal functioning of the knee joint. Although a number of papers have been published regarding congenital patellar dislocation in India, none of them have recognized this rare disorder early in infancy. This disorder can be easily missed on routine X-ray in infancy as the patella has not yet ossified. This case report represents the first CDP diagnosed at the age of 1.5 months in India, in a 1.5-month-old preterm male patient. The patient presented with no specific symptoms other than a right knee swelling and was diagnosed with congenital patellar dislocation at the early age of 1.5 months. Radiological investigations were carried out using venous Doppler and high-resolution ultrasound. Surgical correction is the only possible treatment of CDP and it should be done as soon as possible after diagnosing the condition to re-establish the normal operation of the affected knee joint.

Keywords: Congenital patellar dislocation, Patella, Congenital disorder

INTRODUCTION

Congenital dislocation of the patella is a very rare congenital disorder. It is usually associated with varying degrees of genu valgum and proximal tibial torsion.[1] It develops during intra embryonic period but manifests after birth.[1] Since patella ossifies after 3 years of age, this condition is missed on plain X-ray before 3 years of age and thus, ultrasound helps to diagnose this condition in infancy.[1] The most accepted etiological hypothesis is failure of the rotation of the myotome containing the quadriceps and patella which normally occurs in the first trimester of intrauterine life; failure of which leads to permanent patellar dislocation due to lateral position of the extensor apparatus. In this position, the extensor apparatus works as a knee flexor and external rotator.[2,3] Early diagnosis and treatment lead to improved functioning of the knee joint. In case the condition is diagnosed later in childhood or adulthood, the functioning of the knee joint deteriorates and degenerative changes develop in the affected joint.[1]

CASE REPORT

We are reporting a rare case of a 1.5-month-old preterm male infant was born at 32 weeks gestation with birth weight of 1.5 kg born by vaginal delivery. No abnormalities were detected on prenatal ultrasound. He presented with swelling localized to the right knee. No swelling was palpated in any other joint. Plain X- ray of

bilateral knee joint showed no abnormality as the patella was not ossified. No abnormalities were detected in femur or tibia. Lower limb venous Doppler findings were normal. High resolution Ultrasound of right knee showed lateral and inferior placement of patella along with mild soft tissue swelling as compared to normal placement of left side knee joint. Diagnosis kept was right sided congenital patellar dislocation. Flexion contracture of the affected knee can be corrected using serial casting and a brace, but surgical correction is required for genu valgum, external tibial torsion and subluxation of the tibia.[4] The operation should be performed early, as soon as the diagnosis is confirmed, and preferably before 1 year of age.[5] The newborn underwent surgery for correction of the dislocated patella. The post-operative course was uneventful and the patient was discharged in stable condition on 5th post operative day.

DISCUSSION

CDP is a disorder in which the patella is permanently and irreversibly displaced from its normal position. This rare condition is commonly detected within the first decade of life, because of inability of active extension in the knee and impaired ability during walking.[6] The non-rotation of the myotome responsible for formation of extensor apparatus of the lower limb in the 8th and 10th week of intrauterine development is responsible for the dislocation of patella.[7] The diagnosis of CDP is made through x-ray in children aged more than 3-5 years as the patella has ossified by then but for diagnosing CDP in patients less than 3 years, ultrasound is an important investigation. If untreated, the affected knee may undergo flattening of the lateral femoral epicondyle, worsened valgus and external rotation of tibia. Furthermore, the hypoplastic patella leads to unequal load distribution and early development of osteoarthritis.[6] Therefore, it is important to recognize and surgically treat it as soon as possible.

Our case report is unique because the patient was asymptomatic and had no presenting disabilities except for a mild swelling at the knee joint. The USG done later for the same helped us conclude that this is a rare case of CDP presenting at such an early age.

CONCLUSION

CDP is a very rare finding to be diagnosed in early infancy. Since we were able to diagnose the condition at an early age of 1.5 months, early correction of the dislocation via a surgical operation will help restore normal functioning of the knee joint. Prognosis is poor and depends on the presence and degree of pulmonary hypoplasia and the association with congenital malformations.[2] Early diagnosis and treatment lead to improved functioning of the knee joint. Diagnosis at a later stage in childhood or adulthood can cause deterioration and degenerative changes in knee joint.[1] It is important to have a multidisciplinary approach with a team of experienced neonatologists, rheumatologists and pediatric orthopedic surgeons working jointly to get the best outcomes.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Garg A, Gill KS, Garg M. Congenital dislocation of patella in a preterm infant-a case report. Int J Contemp Pediatr 2022;9:981-2.