



International Journal of Orthopaedics Sciences

E-ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2020; 6(4): 668-669
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www.orthopaper.com
Received: 05-07-2020
Accepted: 12-08-2020

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Non-operatively corrected congenital knee dislocation: A rare disorder

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DOI: <https://doi.org/10.22271/ortho.2020.v6.i4j.2400>

Abstract

Congenital dislocation of the knee (CDK) is an exceedingly rare but correctable congenital deformity. It consists of a spectrum from subluxation to complete dislocation. Diagnosis is usually made clinically at birth, based on pathologic hyperextension of the knee, and confirmed by radiography.

Keywords: Congenital knee dislocation, infant, conservative treatment

Introduction

The incidence of CDK is estimated to be one in one lakh live births^[1, 2]. CDK is the posterior antenatal displacement of the femoral condyle with respect to the proximal joint surface of the tibia, excluding simple hyperextension. Femoral condyle displacement is mostly sagittal, without congenital rotational dislocation or subluxation^[3]. It may be idiopathic or syndromic. Syndromes like Larsen's syndrome, arthrogryposis multiplex congenita, or associated with myelomeningocele^[4].

Clinical-case

25 years old primi para mother admitted to our hospital at 39 weeks and 6 days of gestation with uneventful antenatal history for safe confinement. All antenatal scans were normal. She opted for an elective LSCS and delivered a baby girl. Baby cried soon after delivery. APGAR was 7 and 10 at the first and fifth minute respectively. Baby was a term, appropriate for gestation with birth weight 3.04 kg.

On examination, both knee joints were rotated and hyperextended (figure 1). A passive flexion of both knees to an anatomically straight position could not be performed. The movements of the toes were normal. The rest of the new born examination was normal. Shifted to NICU for further evaluation. Baby developed tachypnoea and mild retraction hence kept under hood Oxygen (figure 2).

X-ray of both knee joint revealed anterior tibial translocation on femur (figure 3, 4). Ultrasonography of the hip was normal. Neurosonogram was normal. Tachypnoea and retraction subsided within an hour and oxygen weaned off. Started breast feeding and child was tolerating well. Passed urine and motion on the first day itself. Baby shifted to the mother side on the second day and continued routine postnatal care.

Gentle manipulation followed by above knee POP cast was applied (figure 5). Cardiology evaluation was done and found to be normal. Discharged on 2nd week with cast, Vitamin D and calcium supplementation. The cast was changed every week for 3 weeks. After 6 weeks, the knee attained a normal position and shape. A series of casting were done till 3 months and X ray repeated showed normal position and range of movements. Regular follow up and physiotherapy continued; baby started walking by 18 months. Started running by 24 months. Now she is 3yrs old and attained all developmental milestones for her age.

Discussion

In 1822, Chatelaine described the first Congenital dislocation of knee. Incidence of CDK is hundred times rarer than developmental dysplasia of the hip (DDH). Only one-third of the cases are bilateral.

It is commonly associated with breech delivery, oligohydramnios, congenital talipes equinovarus (35%), and DDH (45%) [1].

In new-borns, serial manipulation and casting are recommended. Casting should be done in full flexion position without forcing the knee. Forced flexion is not advised as it can cause impaired circulation, epiphyseal damage or even fracture. Early conservative management is the treatment of choice and is highly successful when carried out within 1 – 2

months of life. Serial casts which changed every week with gentle manipulation should be done until the accurate reduction is achieved [4, 5].

Cases which got missed early or which do not respond to conservative treatment need surgery. Surgical treatment involves lengthening of the quadriceps tendon by V-Y plasty. Prognosis is mostly favourable in unilateral cases and when surgery is performed before 2 years of age. Delay in treatment may lead to long-term instability and stiffness [6].



Fig 1: Congenital dislocation of both knees



Fig 2: Both knees rotated and hyperextended



Fig 3: X-ray of the lower limbs including the knee joint showing dislocation



Fig 4: Both knee joint revealed anterior tibial translocation on femur (Whole body X-ray)



Fig 5: Above knee POP cast on both legs

Conclusion

Congenital dislocation of the knee (CDK) is an exceedingly rare but correctable congenital deformity. Early detection and timely intervention of congenital dislocation of the knee could save the child from long-term disabilities and would help them

to attain normal development milestones.

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