

Clinical Quiz

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A baby with limb length discrepancy

Clinical Presentation

A 9 month-old-female baby was brought to our outpatient department with complaints of shortening of her right lower extremity since birth. There was no history of trauma. The baby was first issue, born at term by spontaneous vaginal delivery, conducted at home. Antenatal history was unremarkable. The baby cried immediately after birth. The parents denied any family history of skeletal abnormalities and consanguinity. At presentation, the baby was active, afebrile, with normal respiration, and her weight was 2.5 kg. Examination revealed shortening of her right lower extremity with asymmetric buttock skin folds. The Galeazzi sign was positive. There was limitation of hip abduction on the right side. Her baseline neurologic examination to assess motor impairment or alterations in muscle tone was normal. Spine was normal with no midline spinal cutaneous lesions (hemangioma, or hairy patch). The rest of the systemic examination was normal. Laboratory investigations including complete blood count, erythrocyte sedimentation rate, serum calcium, serum phosphate and serum alkaline phosphatase were within normal limits. The antero-posterior radiograph of the pelvis including both hips was ordered as shown in Figure 1.



Figure 1 - The anteroposterior radiograph of the pelvis including both hips of the baby shows proximal migration of the right femur, break in Shenton's line, shallow acetabular cavity, hypoplasia of epiphysis of right proximal femur and epiphysis lying outside the acetabulum.

Questions

1. What are the features evident on radiograph?
2. What is the diagnosis?
3. What are the risk factors associated with developmental dysplasia of the hip?

Clinical Quiz

Answers

1. The antero-posterior radiograph of the pelvis including both hips of the baby shows proximal migration of the right femur, break in Shenton's line, shallow acetabular cavity, hypoplasia of epiphysis of right proximal femur and epiphysis lying outside the acetabulum.
2. Clinico-radiological diagnosis of patient is developmental dysplasia of the hip (DDH) on the right side. Shortened extremity, asymmetric buttock folds, positive Galeazzi sign (unequal knee heights on placing the child supine with the hips and knees flexed suggest congenital femoral shortening or dislocation of the hip joint) in association with radiological findings suggests diagnosis of DDH.
3. Risk factors associated with DDH are babies with breech presentation, female child, first issue, hyperlaxity syndromes, myopathies, and positive family history of DDH.¹⁻³

Discussion

The DDH represents a spectrum of environment that ranges from a plain neonatal instability to a well-known dislocation. The term developmental is now favored to congenital for the reason that it is more about as it is taken in the exact sense of organ growth and differentiation, which includes fetal, neonatal, and infantile periods. The extent of hip joint pathology seen in DDH varies from capsular laxity to severe acetabular, femoral head and neck dysplasia. If DDH goes undiagnosed, normal development may not take place, parting the child with dysplastic hip. The natural course of untreated DDH is quite unpredictable, but the longer hip dysplasia and dislocation go undetected the greater is the impairment of the femoral head and acetabular development.³ Timely detection of DDH is of principal significance to efforts to satisfactorily modify the innate course of the disease. Most patients of DDH can be identified on the basis of vigilant history and physical examination. Imaging modalities, such as ultrasonography, have augmented our competence to notice subtleties not appreciated by way of physical examination, or plain radiography.¹⁻⁴ The aim of treating DDH is to obtain concentric reduction, and then to uphold that reduction to provide most favorable environment for normal femoral head and acetabular development. Treatment options will depend principally upon whether the hip is reducible, and the age of the child at diagnosis. Management with the Pavlik harness remains the treatment of choice for most kids less than 6 months of age.^{1,2,5} After 6 months of age, closed reduction under general anesthesia is required for achieving concentric reduction. Failure of closed reduction to obtain stable concentric reduction mandates an open reduction. Sequential clinico-radiological evaluation of the hip is necessary until skeletal maturity in order to keep an eye on for growth disturbance of the femoral head, and acetabular dysplasia.^{1,5}

References

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