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BILATERAL DEVELOPMENTAL COXA VARA TREATED WITH VALGUS OSTEOTOMY AND DYNAMIC HIP SCREW FIXATION-CASE REPORT Background Bilateral coxa vara is a rare condition surgical correction of coxa vara has b

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Abstract : Developmental coxa vara usually occurs as an isolated deformity of the proximal femur and usually not discovered until the child reaches walking age and is brought for assesment of a leg length discrepancy or abnormal gait. Bilateral coxa vara is an extremely rare condition and its surgical correction has been challenging. We are presenting a case of 15 year old male with bilateral coxa vara treated with bilateral valgus osteotomy and dynamic hip screw fixation. Both osteotomy united within 6 months Period. We are reporting the case at 18 months of follow up with good results .

Keyword :coxa vara, valgus osteotomy, dynamic hip screw

Introduction:

The term congenital Coxa vara has been applied to two types of coxa vara seen in infancy and childhood. The first type is present at birth, is rare, and is associated with other congenital anomalies ,such as proximal femoral focal deficiency or anomalies in other parts of body such as cleidocranial dysostosis. The second type, usually not discovered until the child is walking, is more common than the first and is associated with no other abnormality except possibly a congenital short femur. Coxa vara, often bilateral, is characterized by a progressive decrease in the angle between the femora neck and shaft, a progressive shortening of the limb,and the presence of a defect in the medial part of the neck. The x-ray appearance of coxa vara is distinctive in the AP view of pelvis. The neck shaft angle is less than 110-120 degree; the growth plate is tilted to near vertical orientation, and the greater trochanter may be elevated above the femoral head1.

Developmental coxa vara usually occurs as an isolated deformity of the proximal femur and usually not discovered until the child reaches walking age and is brought for assessment of a leg length discrepancy or abnormal gait. Acquired coxa vara result from an underlying condition such as fibrous dysplasia, rickets, or post traumatic proximal femoral epiphyseal plate premature closure2. This is important because the definitive treatment depends on which type of coxa vara we are dealing with.

Case report:

A 15 year old Obese, adolescent male presented with painless limp for the past 2 years. The patient did not give any history of trauma or history suggestive of infection. On examination the patient had a waddling gait. Both the hip joints had limitation of abduction and internal rotation. On x-ray pelvis with both hips AP view, the Neck-Shaft angle was measured to be 90 degree on the right side and 95 degree on the left side. The right side was operated first followed by left hip after 15 days. Bilateral proximal femoral valgus osteotomy and dynamic hip screw fixation was done under fluoroscopic control. A Neck-Shaft angle of 135 degree;was achieved on both sides. Post operatively both hips were maintained in abduction using derotation boots for 4 weeks. After 2 weeks gradual mobilization was started. Active and active assisted Hip abduction and flexion exercises were taught first. After 12 weeks the patient was strated on weight bearing with parallel bars. Radiological evaluation of bone healing and implant position was done at 8 weeks ,12 weeks and 6 months post operatively. Clinical scoring was also done at 6 month intervals. Both the osteotomies consolidated with good callus within 6 months.

Result:

At the end of 18 months, patient was assessed clinically and radiologically. Patient had near normal gait with adequate range of movements. Bilateral flexion 90 degree; abduction 30 degree; adduction 30 degree; internal rotation 10 degre; external rotation 30 degree; HARRIS HIP SCORE was excellent [average hip score 98}.

Pre-Operative X-Ray

Post-Operative 3 Months Follow up X-Ray


Post Operative 18 months follow up X ray



Discussion:

The goal of treatment is restoration of the neck-shaft angle, reorientation of the growth plate to decrease shear forces and promoting ossification of the femoral neck3. This is accomplished with a valgus osteotomy. The valgus position of the femoral neck enhances the action of the gluteal muscles, restores the angle of the neck to normal, increases the length of the limb and even improves the congruity of the joint3. Indications for surgery include a neck-shaft angle less than 110 degree, progressive deformity, vertical physis and significant limb length discrepancy, progression of varus angulation, gait abnormality and early degenerative changes4.

Conclusion:

Surgical treatment of coxa vara is extremely difficult. The aim of treatment is to change the shearing stress in the neck of femur to compression force and improve the limp length discrepancy. This reduces the incidence of fracture and osteoarthritis. Proximal femoral valgus osteotomy is being practised by many surgeons and is the gold standard surgical treatment for developmental coxa vara.

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