

(Refer to page 111)

Answer: Patellectomy for a possible comminuted fracture of the right patella

Patellectomy may be indicated in patients with comminuted fracture of the patella where reconstruction is not possible; also in advanced chondromalacia or osteoarthritis, dislocations, infections and neoplastic conditions of the patella.^{1,2}

The patella increases the mechanical advantage of extensor muscles by transmitting the tensile forces across the knee joint. It effectively increases the functional lever arm of the quadriceps from the axis of knee flexion and extension.³ Excision of the patella is known to decrease the moment arm of the extensor mechanism, alter the forces acting on the tibio-femoral joint, centre of motion and limit range of movement. There is loss of protection of the femoral trochlea from injury

and poor cosmesis.¹

A number of studies have shown that there is wasting of quadriceps, reduction in quadriceps strength, extensor lag and subluxation of the extensor apparatus with variable effect on knee function after patellectomy.^{2,4}

While a number of methods for patellar reconstruction are available, Daentzer *et al.*² have reported improved function of the extensor apparatus after reconstruction of the patella using an autogenous iliac crest graft.

Consistent with the literature, the patient had wasting of quadriceps muscle and extensor lag of about 10 degrees. Radiograph of the knees revealed patellectomy on the right side with medial compartment osteoarthritis which is more marked on the right side compared to the left.

REFERENCES

- 1:** Gunal I, Karatosun V. Patellectomy: an overview with reconstructive procedures. *Clin Orthop Relat Res* 2001; 389:748.
 - 2:** Daentzer D, Rudert M, Wirth CJ, Stukenborg-Colsman C. Reconstruction of the patella with an autogenous iliac graft: clinical and radiologic results in thirteen patients. *Int Orthop* 2012; 36:545-52.
 - 3:** Wheelles CR III. Biomechanics of the Patello-Femoral Joint. Available from http://www.whellesonline.com/ortho/biomechanics_of_the_patello_femoral_joint. Accessed on 28th February 2013.
 - 4:** Fractures and Dislocations of Lower Extremity. In *Campbell's Operative Orthopaedics*, Volume 3, Ed. Canale ST, Tenth Edition, 2003, pp 2798.
-