Total Knee Replacement Post Patellectomy: A Case Report

[1]M Amiruddin AR, [1]Fareez W, [1]M Fairuz S
[1]Department of Orthopaedic, Faculty of Medicine, Universiti Teknologi MARA (UiTM), Malaysia

INTRODUCTION:

Patella increases the quadriceps' efficiency and absence of patella reduces the quadriceps' torque by 50%. Patella also places ligamentum patellae parallel to the posterior cruciate ligament and reinforce the knee stability by preventing anterior translation of femur during knee flexion. The patient in this case report underwent primary total knee replacement (TKR) using a posterior stabilized prosthesis after having a patellectomy due to prior trauma.

REPORT:

A 56-year-old man presented with a worsening left knee pain and limitation of left knee motion within 1 year. He had a history of a motor vehicle accident 36 years ago, in which he had undergone a left total patellectomy for the injury he sustained. Hence, he has knee pain for the past 15 years but only requiring medical attention for the past 1 year. The daily activities were much disrupted. Varus deformity over the left knee of 3 degrees noted with active range of motion about 0 to 90°. No posterior tibial sagging and extension lag. There were no collateral and cruciate ligaments laxity. Plain radiographs showed severe bi-compartmental osteoarthritis. The failure of maximal conservative treatment led to the decision for TKR TKR was performed and cemented condylar posterior stabilized total knee prosthesis (Smith & Nephew Inc, Cordova, TN, USA) was used. Satisfactory ambulatory status achieved at 4 weeks post-operatively. There was no post-operative anterior knee pain or instability. Full knee ROM achieved without flexion contracture or extension lag in the left knee joint. The 3-year post-operative radiographs are shown in Figure 1.

In view of the importance of the patella's role in maintaining the knee extensor mechanism and knee instability, the decision to proceed for arthroplasty surgery of the knee joint also need to address the issue of knee stability in the case of a patellectomized knee.

Figure 1: 3 years post left total knee replacement radiographs

Dodds et al had found out there was no revision surgery required in posterior stabilized group[1]. Joshi et al suggested that the outcome in patients treated with a cruciate retaining implant who were without a functioning posterior cruciate ligament was no worse than in those with an intact ligament in patients with the absence of the patella especially when the non-comfroming cruciate retaining implants were used[2].

CONCLUSION:

Patellectomy causes change in the alignments and functions of the quadriceps and knee. The choice of implants used in TKR is crucial to address the altered biomechanics of the knee to promote g/ood outcome of the surgery.

REFERENCES:

1. Dodds A, Crowley R, Menz T, Spriggins T, Keene G, Bauze A (2018). Outcome following total knee replacement in patients with a previous patellectomy. Acta Orthopædica Belgica, Vol. 84 – 3

2. Joshi AB, Lee CM, Markovic L, Murphy JCM, Hardinge K (1994). Total Knee Arthroplasty After Patellectomy. Journal of Bone and Joint Surgery [Br]; 76-B:926-9.