

# An Unusual Presentation of Non Union of Patella with Full Range of Movements of the Knee Joint

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#### **Case Report**

We report a 70 year old retired male leading a sedentary lifestyle, who had presented to us with deformity of his left knee (Figure 1). The authors took a detailed history and traced that he had a history of fall 10 years back and suffered an injury to his left knee. He didn't undergo any medical or surgical treatment for the same. He has been doing all his daily activities and work normally since then. Clinical examination revealed that there was no bony tenderness and had complete range of movements of his knee joint (Figure 2). Radiograph of his knee joint showed an old widely displaced two-part patella fracture (Figure 3). The possible explanation for his complete lack of symptoms and complete range of movements of the knee is due to development of pseudoarthosis of the patella.



Figure 1: Deformity of his left knee.

### Discussion

Patella fractures constitute 1% of all skeletal injuries [1,2]. The incidence of patella fractures is twice in males compared to females [1,3]. The patella plays a vital role biomechanically in load bearing during flexion and extension of the knee joint.

Indirect injury to the patella following fall on the feet from a height leads to eccentric contraction of the quadriceps [1,4]. The patella forms an integral part of the extensor mechanism of the knee joint by converting tensile force into compressive force, and hence decelerates knee flexion during walking, climbing steps or walking downhill. This is described as patella femoral joint reaction (PFJR) [1,5]. During the flexion between 45 and 60 degrees, patella increases the lever arm of the quadriceps by displacing the linkage between quadriceps and proximal tibia away from the axis of knee rotation [1,6].



Figure 2: Movements of his knee joint.

Nonunion is a known complication of patella fractures. The incidence is reported to be 2.7 to 12.5% [1]. There is no treatment protocol described for non-union of patella. The best strategy is to consider age, function and demand of the patient. High demand patients might require a more stable knee whereas low function patients such as ours need not undergo any surgical intervention.



Figure 3: Radiograph of his knee joint

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## Conclusion

Our patient although had nonunion had complete range of movements of the knee and had a normal gait. Patella forms an integral part of the extensor mechanism. Stable construct to fix the patella fracture is essential to aid in normal function of the knee joint. Our patient had a two part transverse patella fracture which naturally healed by pseudoarthrosis. This begs the question whether we really need to treat non-union of patella in low demand patients such as our patient.

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