



Tibial plateau fracture primarily treated with knee arthroplasty

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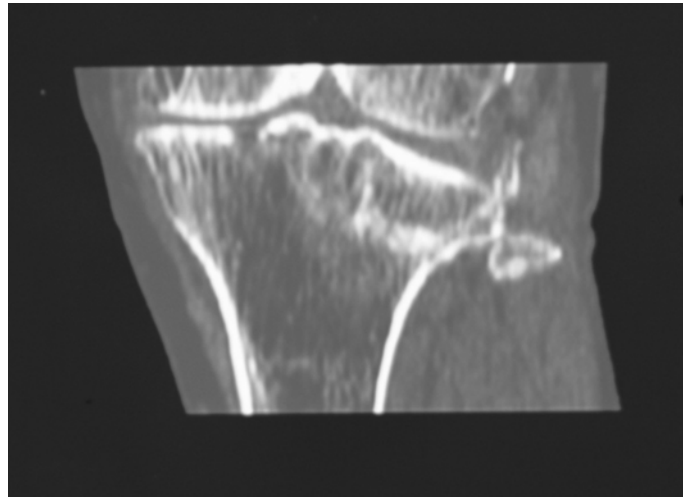
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Abstract

An acute tibial plateau fracture in an elderly patient was treated by performing a total knee arthroplasty.

Case report

A 78-year old woman fell and injured her left knee. She was unable to put weight on her left leg and her tibia pointed laterally. Examination revealed a swollen knee with lateral instability. Radiographs showed a comminute fracture of the lateral condyle with a depression of 1-2 cm and fracture extensions to the eminentia area and to the medial condyle (Fig. 1A). CT revealed that the whole of the lateral condyle was depressed by 1,5 cm (Fig. 1B). There was no extension of the fracture to the shaft of tibia. No arthrosis could be seen.



A

B

Fig. 1 AP radiograph (A) and CT scan (B) showing a comminute fracture of the lateral condyle with extensions to the medial condyle

She was operated upon using a total knee prosthesis - AGC (Anatomical Graduated Components, Biomet Merck). Six weeks postoperatively the patient could walk freely without a stick and had no pain. The knee was stable and had full range of movement.

After one year the result was equally satisfactory. Radiographs showed no loosening of the prosthesis (Fig. 2).

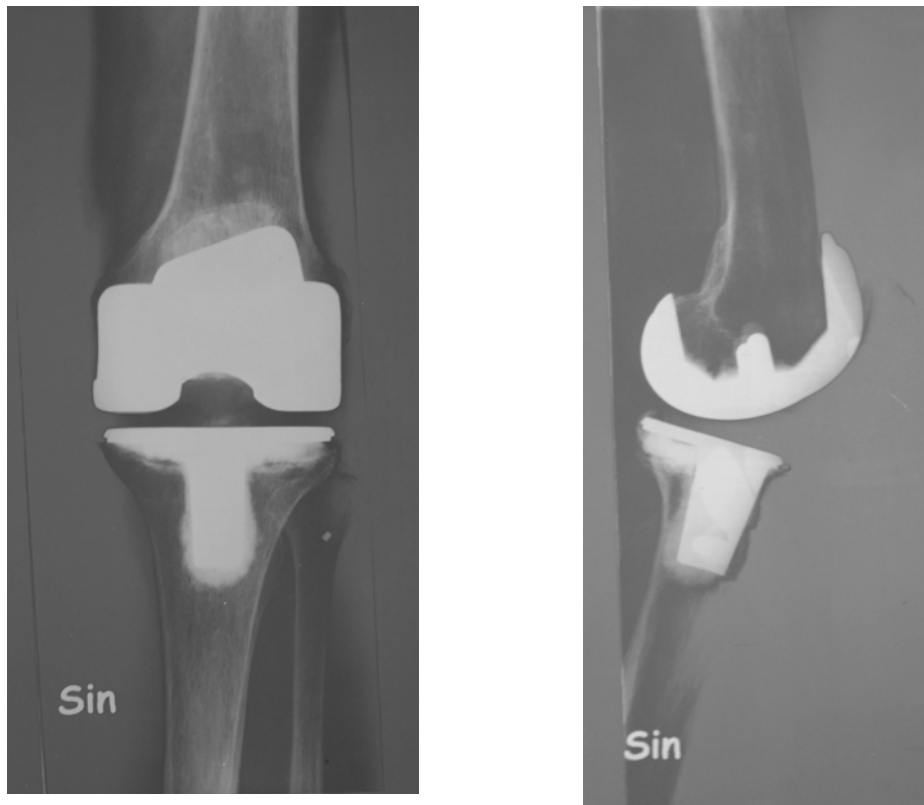


Fig. 2 Antero-posterior and lateral radiographs one year postoperatively.

Discussion

Normally this patient would have been treated with open reduction, bone transplantation and plate fixation. The knee would have been immobilized in a plaster-of-Paris for four weeks and no weight bearing allowed for 3-4 months. Being confined to a wheel chair for that long might be detrimental to an elderly person. In the long view there is a risk of developing lateral gonarthrosis necessitating total knee prosthesis [5].

So, it was reasoned, why not insert a prosthesis right away, allowing the patient immediate mobilization and weight bearing. However, no reference was found in the literature of Total Knee Replacement in the primary treatment of tibial plateau fracture. Knee arthroplasty has been used after failure of internal fixation of the tibial plateau [5]. Treatment by long



stemmed total knee replacement has been suggested for fractures of the proximal tibia below an osteoarthritic knee in elderly patients [6]. On the other hand, primary use of prosthesis has been recommended for dislocated cervical fractures of the hip [1,4] as well as for comminuted fractures of the proximal humerus [3] and of the distal humerus [2]. It was only after discussion with and consent of the patient that the knee prosthesis was inserted.

The good early result was surprising. It might be that the patient before the accident was fit and had no knee arthrosis, therefore allowing for a more rapid recovery – in contrast to patients with longstanding arthrosis or arthritis treated with TKR. When using this method it is important to have at hand tibial prostheses with long shafts allowing for better fixation.

Primary use of TKR might be considered an alternative treatment for elderly patients with intraarticular fractures of the tibia not extending past the metaphyseal area.

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