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Case report

Exceedingly large femoral condyle intraosseous ganglion cyst following high tibial osteotomy

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Introduction

Ganglion cysts emanating from intraosseous bones are common pathological entities in routine practice.[1–3] Intraosseous ganglion cysts occur at any site and age, are common in the acetabulum and tibia, and often remain asymptomatic for lengthy times. Because most such cysts occur at the ends of the long bones or juxtacortical area of major joints, intraosseous ganglion cysts may be frequently discovered incidentally when joint pain is claimed for some symptomatic events.[1,4,5] The size and extension within the intramedullary area may vary, and the bony cortex and/or articular cartilage surface is often injured secondary to the large ganglion cyst, in association with pain around the lesion. Because intraosseous ganglion cysts are identified incidentally, the formation and development processes of an intraosseous ganglion cyst have not been reported in the literature, although most physicians are familiar with the clinical entity.

The current communication describes the course of formation and development of an intraosseous ganglion cyst in the distal femoral canal after high tibial osteotomy for unicompartmental osteoarthritis. It also discusses the possible underlying pathomechanism.

Case report

A 73-year-old woman who underwent right-side high tibial osteotomy noticed knee joint discomfort that was different from the pain experienced before high tibial osteotomy. Family and past histories were unremarkable. At the time of knee surgery, blood tests were negative, including the test for rheumatoid arthritis. The patient was otherwise healthy and was treated conservatively over a long period for right-side knee joint pain.

Eight years before the present admission to our university hospital, she underwent high tibial osteotomy for right-sided knee joint arthritis. Pain on the medial side of the knee upon motion and while standing decreased significantly after surgery. Thereafter, muscle strengthening exercises of for the quadriceps femoris, hamstrings, and tibialis anterior muscles were encouraged by the attending surgeon to reduce possible progression to three-compartment knee osteoarthritis. Nevertheless, the patient gradually noticed a new type of dull pain in the distal medial side of the right thigh. The pain was continuous and exacerbated even without knee joint motion or weight bearing. She was told that she had developed an intraosseous ganglion cyst or other type of lesion by her attending surgeon.

Reviewing the serial radiographs of the knee joint, the affected right side knee showed 190° and 168° lateral femoral tilting angles before (Fig. 1a) and after (Fig. 1b) the high tibial osteotomy, respectively. The postoperative course was uneventful. Approximately 2 years after high tibial osteotomy, a follow-up radiograph was unremarkable except for the possible approximation of the screw to the subchondral bone and articular surface of the medial tibial plateau (Fig. 1c). Eight years after the surgery, the radiographs showed an extremely large intraosseous radiolucent lesion on the left of the distal medial side of the femur (Fig. 1d). Osteophyte-like projection was noted in the distal medial femoral condyle around the lesion, and the medial tibial plateau showed osteoarthritic changes with an irregular, ragged articular surface arrangement. At that stage, the femoral tilting angle was 170° on the right. High-resolution computed tomography (GE CT/T 8800; General Electric, Milwaukee, WI, USA) showed a large cyst-like lesion with rarefaction of the cortical bone surrounding the lesion in association with some trabecular bone-like

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