Case reports

A severely overcorrected high tibial osteotomy Revision by osteotomy and a long stem component

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12 years ago a 73-year-old woman underwent a proximal tibial valgus osteotomy for medical gonarthrosis. Her knee pain has gradually recurred the last 3 years. She had a severe valgus deformity, but a stable knee and 15–110 degrees motion. Standing, the femorotibial angle (FTA) was 140 degrees, and the angle between the tibial joint line and the mechnical axis was 30 degrees valgus.

A knee replacement started with a peroneal nerve neurolysis. To maintain the already satisfactory collateral ligament balance, the osteotomies of the femur and tibia were performed almost parallel to the joint line. A varus osteotomy was performed below the tibial tuberosity before inserting the tibial component. A tibial component with a long central stem was used with bone cement and we were careful not to get cement into the osteotomy.

1 month after the operation, the patient resumed full weight bearing. Radiographs after 2 months showed a healed osteotomy. The femorotibial angle was 168 degrees.

Discussion

A problem with knee replacement after an overcorrected osteotomy is the lateral bone defect resulting from excessive valgus deformity. Windsor et al. (1988) resected the medial plateau minimally, and replaced the lateral bone defect with bone cement or used a custom-made component with oblique tibial undersurface. However, Brand et al. (1989) have reported early postoperative radiolucencies around large cement plombs. With a custom-made component, high stresses occur in the central stem, which is the only protection against lateral migration. Furthermore, it is difficult to get an exact fit to the tibial defect and it is expensive. Brand et al. (1989) managed these tibial defects with modular metal wedges, but the wedge system cannot be used for defects of 25 mm or more.

A second problem is soft-tissue imbalance resulting from excessive medial tibial resection. Krackow and Holtgrewe (1990) resected at a relatively deep level of the medial tibial plateau and advanced the medial collateral and posterior cruciate ligaments. This technique is difficult and there is a risk of recurring instability.

Preoperatively with a femorotibial axial alignment of 40 degrees valgus. The tibial joint is in 30 degrees of valgus in relation to the mechanical axis of the tibia. The wedge osteotomy below the tibial tuberosity is marked.

2 years postoperatively there is good alignment and healing of the osteotomy.

With our method, correction of soft-tissue balance is unnecessary, and a standard tibial component can be used.

References

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Krackow K A, Holtgrewe J L. Experience with a new technique for managing severely overcorrected valgus high tibial osteotomy at total knee arthroplasty. Clin Orthop 1990; 258: 213-24.

Windsor R E, Insall J N, Vince K G. Technical considerations of total knee arthroplasty after proximal tibial osteotomy. J Bone Joint Surg (Am) 1988; 70 (4): 547-55.

3 deep-seated glomus tumors in the lower arm

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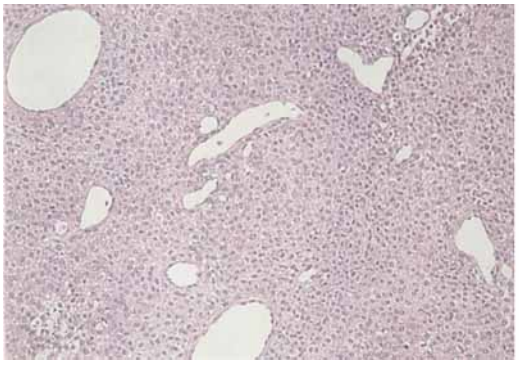
A 34-year-old right-handed man had a 10-year history of tenderness on the ulnar dorsal aspect of the left wrist and on the dorsal aspect just distal to the elbow. No mass could be felt. Pronation was restricted by 20 degrees because of pain. Laboratory examinations, plain radiographs and angiographs were normal. The pain disappeared temporarily after the injection of a local anesthetic agent.

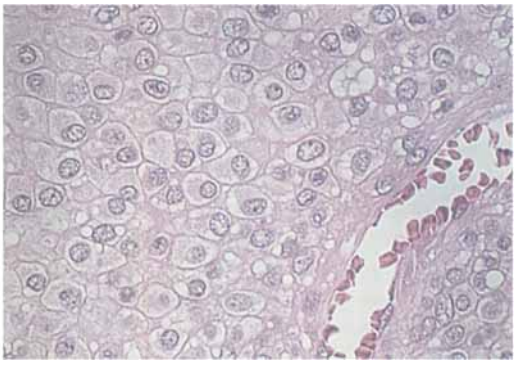
Exploratory incisions over the tender spots were performed under local anesthesia. Distally, between the extensor carpi ulnaris tendon and the extensor digitorum communis tendon, a 1 × 1.5 cm dark red mass covered with connective tissue was found. It had 3 draining vessels which were coagulated and the mass was excised. Proximally, between the ulna and the flexor carpi ulnaris muscle, there was a 1 × 2 cm yellowish encapsulated mass with 3 draining vessels, which was excised. Light microscopy revealed similar findings in the 2 tumors. They consisted of sheets of uniform polygonal to round cells with distinct cell boundaries. The cell bodies were eosinophilic-stained and/or water-bubbled, and the nuclei were round or oval. There were many capillary-sized vessels surrounded by plump, regular-appearing cells within these tumors. The tumors were considered to be glomus tumor proper, in accordance with Enzinger's subclassification (Enzinger and Weiss 1983).

3 months after the first operation, another tender point appeared about 6 cm proximal to the wrist crease, just under the flexor carpi ulnaris tendon. Exploration 1 year after the first operations revealed a yellowish smooth-surfaced mass in the muscle bellies

Light microscopic findings of the tumor resected at first operation.



Solid sheets of cells interrupted by vessels of varying sizes are shown (HE, × 120).



The cell body is eosinophilic-stained and/or water-bubbled, and the nucleus is round or oval, large, and sharply punched out (HE, × 560).