Hemicondylar tibial osteotomy in Blount's disease,

A report of 2 cases

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Two neglected cases of Blount's disease with severe sloping of the medial tibial condyle and excessive ligamentous laxity are presented. Elevation of the medial tibial condyle gave good results.

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Submitted 91-07-07. Accepted 91-12-07

Two cases of Blount's disease were treated by hemicondylar osteotomy according to the following technique, which is almost identical to the technique of Støren (1970).

With the patient supine on a traction table, the medial tibial condyle is exposed through a curved incision extraperiosteally to avoid any periosteal damage. Using an image intensifier, a guide-wire is placed transversely parallel to the sloping condyle as closely as possible to the tibial plateau. The sloping condyle is elevated with a wide osteotome. The osteotomy is performed subperiosteally within a sheath of periosteum. The chiseling proceeds to the midline under eminentia intercondyloidea, and the whole fragment is lifted in one piece. The diaphysis is abducted; and two corticospongious wedge-shaped bone grafts from the crista ilii, large enough to force the fragment in maximal elevation, are wedged under the fragment with maximal forced valgus of the knee. No physeodesis is done. A plaster cast is applied under forced valgus for 10 weeks. Weight bearing is postponed for 4 to 5 months (Figure 1).

Case 1

A 15-year-old girl had progressive adolescent Blount's disease since she was 12 years old. She had pain during exercise, and had difficulties in running and participating in school gymnastics.

She had 30° varus of the left knee, extension-flexion was normal, and there was excessive laxity of the knee. There was a 2-cm shortening of the leg measured from the anterior-superior iliac spine to the medial malleolus. Radiographs showed sloping of the medial tibial condyle, with a 30° varus deformity. Hemicondylar osteotomy was carried out. A review

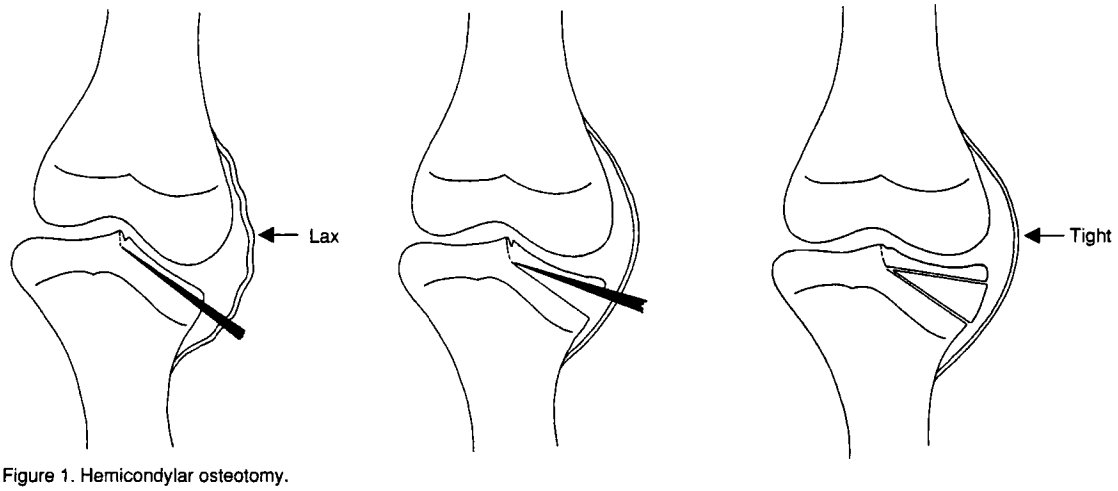

Figure 1. Hemicondylar osteotomy.

when the patient was 20 years of age showed normal clinical and radiographic findings.

Case 2

A 15-year-old boy had progressive juvenile Blount's disease since he was 8 years old (Figure 2). He had 40° genu varum in his right knee with internal rotation and a 2-cm shortening of right leg measured from the anterior-superior iliac spine to the medial malleolus. The range of motion in the right knee was 0°–115°, with excessive laxity. The patient suffered from a psychologic complex. Radiographs showed sloping of the medial tibial condyle, with 45° varus deformity. A hemicondylar osteotomy was carried out.

An examination at 22 years of age showed, besides 10° genu varum, that the patient had normal clinical findings with a full range of motion in the right knee. There were no signs of leg shortening or muscle atrophy, and the knee was stable (Figure 2).

At 15 years of age, sloping of the medial tibial condyle with an angle of 45° to the mechanical axis. A hemicondylar osteotomy was performed.

7 years later, at 22 years of age, 10° of clinical varus and normal knee motion.

Figure 2. Case 2. Genu varum in Blount's disease corrected by hemicondylar osteotomy.

Discussion

A high incidence of complications after tibial osteotomies in children has been reported (Steel et al. 1971, Mycoskie 1981, Van Olm and Gillespie 1984), and osteotomy does not always improve the condition (Schoenecker et al. 1985). Langenskiöld and Riska (1964) used a dome osteotomy of the tibia combined with oblique osteotomy of the fibula in cases of infantile Blount's disease. With excessive ligament laxity and severe medial slooping, elevation of the tibial condyle was necessary combined with physiodeses of the lateral condyle and the proximal end of the fibula. Langenskiöld (1989) reported good results from

condylar osteotomy in five cases of Blount's disease over a 30-year-period. Langenskiöld (1990) felt that the indication for elevation of the medial tibial condyle in Blount's disease was rare, and he advised that the operation should be executed only if there was excessive ligamentous laxity; otherwise, a tenting deformity can ensue in young patients.

Støren (1970) first used his hemicondylar osteotomy technique in a 13-year-old girl with Blount's disease with a good result, whereas Roy and Chaise (1979) used their technique for the first time on 3 children over 5 years of age with Blount's disease.

The 2 cases reported here show clearly that elevation of the medial tibial condyle is a method that can be recommended in late, neglected Blount's disease.

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