The Primary Repair of Special Injuries

Injuries of the Medial Side and Their Repair

General

Both Hughston [in 140] and Trillat et al. [359] have sought sites of predilection for ligament tears in the medial capsuloligamentous triangle. Chambart [in 359] found the following prevalences in 44 consecutive cases:
- 50% - proximal rupture at the femur
- 33% - distal rupture at the tibia and
- 17% - rupture in the intermediate to posterior region.

Hughston [in 140] found these prevalences in his evaluation of 50 consecutive cases:
- 20% - isolated rupture of the MCL at the femur
- 56% - isolated rupture of the MCL at the tibia
- 24% - probable combined proximal and distal or mid-third rupture
- 40% - rupture of deep meniscofemoral fibers
- 42% - rupture of deep meniscotibial fibers
- 10% - rupture of deep meniscofemoral and meniscotibial fibers
- 6% - rupture of deep intermediate fibers
- 2% - overstretching of deep meniscofemoral fibers
- 12% - rupture of the POL at the femur
- 34% - rupture of the POL at the tibia
- 14% - rupture of the POL in the intermediate region
- 18% - rupture of the POL with the posterior capsule
- 8% - overstretching of the POL (interstitial tear)
- 14% - intact POL.

The 8% of cases with overstretching of the POL and 14% with an intact POL appear to correspond to the 20% of cases reported by Chambat [in 359] in which the ligament was not ruptured, but was found to be over-stretched with bloody imbition and edema. Presumably these cases involved slow distensions with first- to second-degree lesions. Objectification is difficult in such cases and relies in part on personal judgment.

The relatively high percentage of MCL tears from the tibia reported by Hughston [in 140] may be due to the large proportion of football injuries in his material, whereas the injuries evaluated by Trillat [359] had more diverse causes (see also p. 190).

The Normal Medial Aspect

Figures 207 and 208 show the normal medial structures of the knee. Depending on the angle of flexion, some 40% of the MCL and almost the entire POL are covered by the pes anserinus! Over 80% of the most important ligamentous structures are located in the posterior half of the medial side of the joint. Kaplan [167] writes that repair of the collateral ligament cannot restore full stability unless the semimembranosus expansion is also repaired. If one does not wish to detach the bony insertion of the pes anserinus, it may be sufficient, depending on the extent and complexity of the injury, to open the fascial space (parallel to the fiber course) between the longitudinal retinaculum and the proximal anterior border of the pes anserinus, taking care to spare the saphenous nerve branches (Fig. 207).

When the pes anserinus is raised, we also divide a portion of the fascia in the same layer at the posterior edge of the medial longitudinal retinaculum and reflect the flap upward. In Fig. 209 the reflection of the pes
anserinus and fascia is exaggerated to show the complex of the semimembranosus corner in its entirety. In reality we maintain continuity between the pes anserinus fascia and the more distal crural fascia in order to preserve the advantage of the subfascial approach with regard to the avoidance of nerve trauma.

At the upper edge of the operative field the medial articular nerve descends over the proximal attachment of the MCL. The passage of this nerve over the ligament insertion explains why the MCL lesion is most painful over the adductor tubercle of the medial femoral condyle. This fact often masks the presence of coexisting distal lesions of the ligament. The degree of local tenderness is not a reliable indicator of the extent of a ligamentous lesion in this area.

The following figures show only the deep capsuloligamentous structures and semimembranosus expansion, with the pes an-

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**Fig. 207.** Cross-section just proximal to the menisci showing the principal medial layers

**Fig. 208.** The medial aspect of the knee joint with its anatomic structures