Bucholz, Robert W., Heckman, James D.
Rockwood & Green's Fractures in Adults, 5th Edition

MECHANISM OF INJURY

Part of "42 - FRACTURES OF THE DISTAL FEMUR"

Most supracondylar fractures are the result of a severe varus, valgus, or rotational force with axial loading. In young patients, this amount of force is typically the result of high-energy trauma such as motor vehicle accidents and falls from heights. In elderly patients, the force from a minor slip and fall on a flexed knee may be sufficient to produce these fractures.

After fracture, the deformities observed are usually those of femoral shortening, apex posterior angulation, and posterior displacement of the distal fragment. These deforming forces are produced by the quadriceps, hamstring, and gastrocnemius muscles, as shown in Fig. 42-4. Varus deformity may result from the pull of the adductor muscles. If an intercondylar fracture is present, there will often be rotational malalignment of the condyles (with resulting joint incongruity) because of the separate attachments of the gastrocnemius muscles to each condyle.

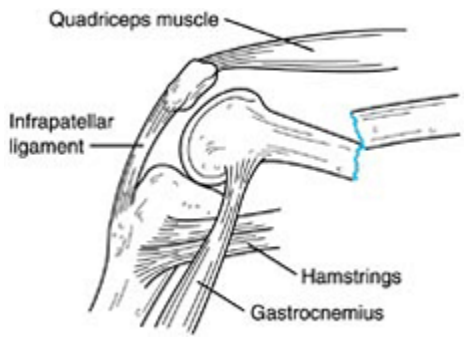

FIGURE 42-4. Lateral view showing muscle attachments and resulting deforming forces. These result in posterior displacement and angulation at the fracture site. (Adapted from Browner BD, Levine AM, Jupiter JB. *Skeletal trauma: fractures, dislocations, ligamentous injuries,* 2nd ed. Philadelphia: WB Saunders, 1997, with permission.)