Fourth Edition

Orthopaedics

Principles and Their Application

VOLUME 1

J. B. Lippincott Company
Philadelphia

London, Mexico City, New York,
St. Louis, São Paulo, Sydney

at an early date by soft tissue procedures. At a late date, coxa valga and anteversion develop at the hip; in the opposite hip, the femoral head may repeatedly erode the acetabular rim and may subluxate and dislocate. The pelvis and lumbar spine become distorted and therefore prevent full correction of scoliosis and forward pelvic inclination by release of soft tissue contractures. At the knee, abnormal anterior inclination of the upper tibial surface is associated with genu recurvatum and posterior subluxation. Within the foot, contractures of the calf muscles and of the plantar aponeurosis are frequently associated, and structural bone changes develop in long-standing muscle imbalance (*e.g.*, calcaneus deformity in paralysis of the triceps surae). After structural bone changes have created a rigid unyielding deformity, bone resections are required in addition to soft tissue procedures.

A deformity can reduce the effectiveness of a muscle that is only partially paralyzed. For example, a hip flexion contracture in the presence of a weak gluteus maximus will interfere with the action of residual functioning muscle fibers. Once the hip flexion deformity is overcome, gluteus maximus power can be redeveloped.

The multiplicity of deforming factors throughout the lower extremities makes it mandatory that the potential for correcting each be properly evaluated and a schedule of procedures in the proper sequence be prepared. The objective is to improve good balance, stability, and gait.

Correction of hip deformity and reestablishing muscle balance appears to have priority before the feasibility of other surgical procedures about the knee, foot, and lower back can be considered. Overcoming a hip flexion deformity and providing good abductor and extensor power about the hip is absolutely essential to restoring good body balance and should precede the correction of the scoliosis and lordosis. Spine fusion can be undertaken only after deformities of the hip and knee are corrected. If the spine fusion is done initially, the scoliotic and

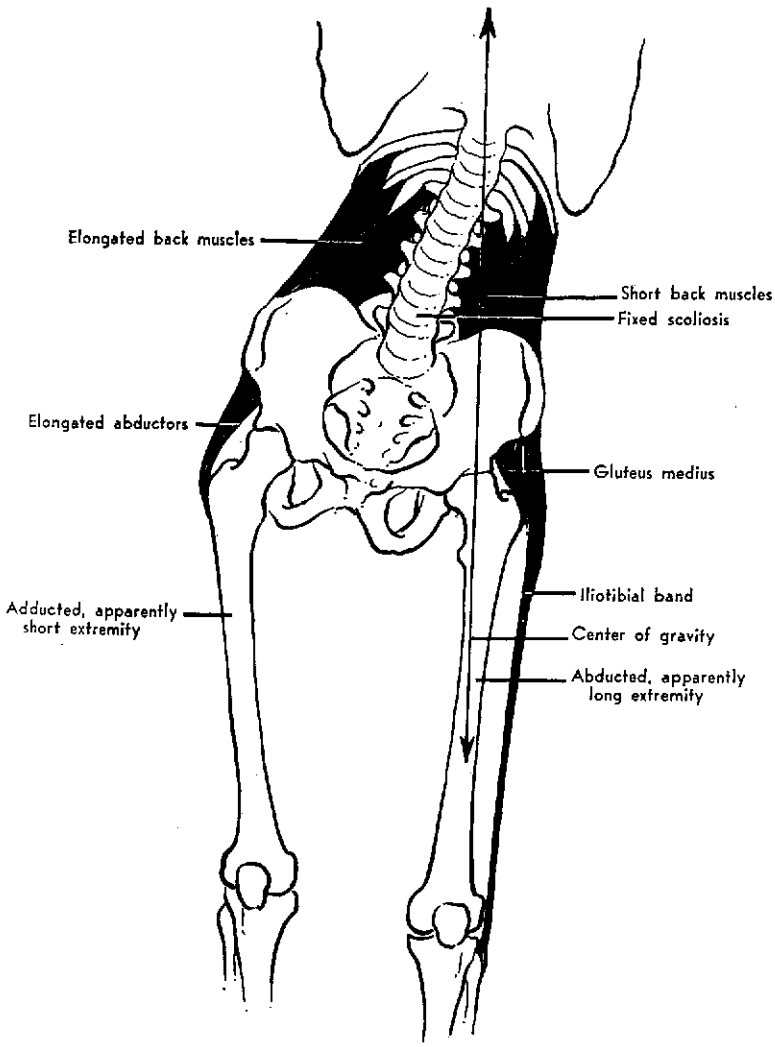

FIG. 14-33. Iliotibial band contracture, showing pelvic obliquity, lumbar scoliosis, displacement of the center of gravity, and stretched, elongated contralateral muscles.