

Table 21-1

CONTRAINDICATION TO HIGH TIBIAL OSTEOTOMY*ABSOLUTE CONTRAINDICATION TO HIGH TIBIAL OSTEOTOMY*

- Inflammatory arthritis (rheumatoid, crystalline deposition, inflammatory)
- Tricompartmental arthritis
- Flexion arc < 90 degrees
- Previous meniscectomy in the contralateral compartment
- Flexion contracture > 10 degrees

RELATIVE CONTRAINDICATION TO HIGH TIBIAL OSTEOTOMY

- Age > 60
- Patellofemoral arthritis
- Collateral ligament insufficiency (MCL, LCL)
- ACL insufficiency
- Medial bone loss > 1 cm
- Correction needed > 20 degrees

corrected with proximal dome osteotomy, maintaining the joint line and minimizing the amount of bone resected. Valgus deformity can be corrected with medial proximal tibial closing wedge osteotomy; this procedure in more severe deformities can lead to joint line obliquity and tibiofemoral subluxation. That is the reason why severe valgus deformity with lateral unicompartmental involvement is addressed with distal femoral medial closing wedge osteotomy, which allows for correction to about 2 degrees of valgus. TKA following femoral or tibial osteotomy can be challenging.

Prior High Tibial Osteotomy

HTO is often used for the treatment of unicompartmental osteoarthritis of the knee, typically as a time-buying procedure to delay eventual TKA. Patient selection is crucial for the success of a HTO, and the surgeon should be familiar with the indications and the contraindications for this procedure (see Table 21-1). The patient satisfaction rate following HTO decreases over the years, 73% to 95% of patients at 5 years after surgery report good outcome, whereas only 30% to 46% report the same outcome 10 years following surgery. Causes of failure of HTO are primarily undercorrection with subsequent return of deformity and progressive arthritis in the unaffected compartment. Although HTO one time was thought to bear no effect on the outcome of eventual TKA, multiple studies have demonstrated less favorable outcomes after HTO, in addition to expected surgical challenges. There are reports of lower total knee

Table 21-2

INDICATIONS FOR POSTERIOR STABILIZED TOTAL KNEE PROSTHESIS

- Patellectomy
- High tibial osteotomy
- Severe angular deformity (varus, valgus > 15 degrees)
- Rheumatoid arthritis
- Fixed flexion > 20 degrees

scores for patients with HTO prior to TKA when compared with similar patients without prior osteotomy, and decreased postoperative ranges of motion. Patella infera, a known complication of HTO, is correlated with a poor clinical outcome. Patella infera is believed to be a consequence of the osteotomy surgery and subsequent immobilization in a long leg cast. Technical difficulties of TKA in patients with prior HTO result from patella infera, periarticular scarring, preoperative malalignment because of undercorrection or overcorrection, proximal tibial bone deficiency, and retained hardware. Other have studied TKA after HTO and found no difference in postoperative knee function or complications when compared with primary TKA without previous osteotomy. More favorable results in these studies may be attributed to lesser degrees of pre-TKA deformity. Surgical challenges following HTO include skin incisions. Although transverse skin incisions may be ignored, lateral longitudinal skin incisions must be respected and an adequate intervening skin bridge of at least 7 cm must be left between the 2 incision sights. Also, scarring over the lateral compartment and infrapatellar region may be encountered, making patellar eversion and lateral compartment exposure more difficult. Lateral retinacular release, quad snip, V-Y quadricepsplasty, or a tibial tubercle osteotomy may be necessary for exposure. Medial subperiosteal exposure must also be carefully performed to maintain the continuous soft tissue sleeve necessary for closure and medial soft-tissue stability. It is likely that technical difficulties with exposure led to suboptimal component positioning, soft-tissue balancing, and limb alignment. Because ligamentous balancing may be difficult, a PCL-substituting prosthesis is routinely used (Table 21-2). Another common problem after previous HTO is the medial offset of the intramedullary canal of the tibia relative to the center of the tibial tray. Extramedullary alignment usually is advocated in this situation, and medialization of the tibial tray or an offset tibial stem may also be needed to accommodate the deformity. Rotational deformity also may be encountered with previous HTO, because the proximal