Introduction

Postoperative stiffness is a debilitating complication of total knee arthroplasty. Stiffness is defined as an inadequate range of motion (ROM) that results in functional limitations in activities of daily living.

Most of the current knee replacement design effectively reduce pain to satisfactory level, and provide adequate function. The recent changes in total knee replacement design have been directed toward further improvement of patient function and implant longevity.

The etiology of stiffness after TKA is most commonly multifactorial Preoperative risk factors include limited range of motion, underlying diagnosis, and history of prior surgery. Intraoperative factors include improper flexion-extension gap balancing, over sizing or malpositioning of components, inadequate femoral or tibial resection, excessive joint line elevation, creation of an anterior tibial slope, and inadequate resection of posterior osteophytes. Postoperative factors include poor patient motivation, arthrofibrosis, infection, complex regional pain syndrome, and heterotopic ossification.

A comprehensive clinical evaluation of the patient with a failed TKA must follow a thorough and logical progression. A detailed history of the index arthroplasty and a medical history are necessary. The patient's complaint should be explored in detail to assess the nature of the pain as well as any functional problems. A complete physical examination of the affected knee and adjacent joints is necessary, and the patient is observed walking and getting up from a chair. Basic radiographs are obtained to evaluate component position and rule out loosening, osteolysis, malposition, and component fracture as a cause of the patient's symptoms.

Manipulation under general or epidural anesthesia is generally successful in improving range of motion when used within the first 3 months of surgery. An excessively aggressive or a late manipulation of the knee can result in complications such as supracondylar femur fracture, patellar tendon avulsion, quadriceps tendon tears, hematoma formation, or wound dehiscence. Several studies have evaluated the results of manipulation in patients with limited flexion after TKA. However, these studies provide little insight into the use of manipulation for postoperative flexion contractures

The use of arthroscopy for the effective treatment of stiffness is limited for two reasons: first, the amount of scar tissue that can be efficiently resected. Through an arthroscopy is limited. Second, it is not possible to address any implant related causes of stiffness, exchange a polyethylene insert, or perform a posterior capsular release. On the other hand, it is a less invasive procedure and in selected cases proved to improve the ROM.

The best candidates for revision are those in whom identifiable causes of stiffness can be corrected. Revision surgery remains the most effective surgical treatment for stiffness after TKR. Results of revision surgery for the specific indication of knee stiffness have been unpredictable and may be influenced by an individual patient’s soft-tissue response to surgical trauma.

Rehabilitation after revision TKR for stiffness is paramount. Poor compliance with an intensive rehabilitation protocol after surgery can result in persistence or worsening of the stiffness. As the functional demands and arc of motion expected from patients and physicians continue to increase, so will the relative frequency of stiffness after TKR. The prevalence of stiffness after TKR can be lowered by careful patient selection, meticulous preoperative planning, and surgical technique.