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Healing Beyond Trauma: Success with Total Knee Arthroplasty in Post-Traumatic Osteoarthritis (PTO)

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INTRODUCTION

Osteoarthritis (OA) is the most common joint disorder, affecting 300 million people worldwide and leading to chronic pain and disability, especially in the elderly. The knee is most frequently affected, with higher prevalence in women. Aging and obesity are major risk factors, increasing the global healthcare burden. Post-traumatic osteoarthritis (PTO), comprising 10–12% of OA cases, results from joint trauma such as fractures or ligament injuries. While initial treatment is conservative, advanced cases require surgical intervention. Total knee arthroplasty (TKA) is an effective solution for end-stage PTO, offering significant pain relief and functional restoration. This case report highlights the transformative impact of TKA in complex post-traumatic knee pathology.

REPORT:

A 66-year-old gentleman with ischemic heart disease, hypertension, and dyslipidemia sustained a motor vehicle accident in 1991, resulting in a closed right femur fracture (managed with plating) and an open left femur fracture (treated with external fixation). The left femur developed malunion and a surgical site infection, requiring multiple debridement and prolonged antibiotic therapy. The fracture achieved union in 1992. However, in 2023, the patient developed septic arthritis in the left knee, necessitating a knee washout and extended antibiotic therapy. Over four years, he experienced progressive knee pain and difficulty in ambulation. Clinical evaluation revealed a varus-aligned left knee with a short limb gait and restricted range of motion (5–90°). Radiographic findings confirmed severe joint degeneration with malunion. The patient underwent left TKA, successfully restoring mechanical alignment and correcting leg length discrepancy.

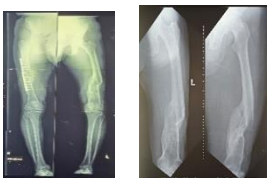

Figure 1: Preoperative scannogram showing varus aligned left lower limb

Figure 2: Postoperative xray and scannogram revealed restoration of joint line and mechanical axis

Postoperatively, the patient achieved significant recovery, with pain-free, independent ambulation. His knee range of motion improved to 0–120°, markedly enhancing his functional capacity.

CONCLUSION:

PTO presents a complex clinical challenge requiring a multidisciplinary approach. While conservative measures provide symptomatic relief, TKA remains the definitive treatment for end-stage PTO, delivering long-term functional restoration and improved quality of life.

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