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Dr. Akshaya Kumar Mehara

Advances Orthopaedic Care with Landmark Knee Reconstruction Case

Kaushal Kumar | The CEO Magazine



Dr. Akshaya Kumar Mehara, Senior Professor in the Department of Orthopaedics at RNT Medical College, Udaipur, Rajasthan, has achieved a significant milestone in orthopaedic surgery by documenting what is believed to be the world's first published case of a patient with bilateral end-stage knee osteoarthritis and bilateral asymmetric intra-articular fractures successfully treated through a combined approach of total knee replacement and fracture reconstruction. The pioneering work has attracted attention within the medical community for its innovative surgical planning and its contribution to advancing complex joint reconstruction.

Managing advanced knee osteoarthritis alone is a demanding clinical challenge, often requiring total knee replacement to restore mobility and improve quality of life. However, the simultaneous presence of severe bilateral osteoarthritis with complex fractures affecting both knees is exceptionally rare and presents significant treatment difficulties. Such cases have rarely been reported in medical literature, making this achievement an important contribution to orthopaedic science.

The patient, a 73-year-old man, had been suffering from advanced Grade IV osteoarthritis in both knees and became bedridden for nearly eight months following severe injuries. Clinical evaluation revealed two different fracture patterns—a displaced femoral condyle fracture in the right knee and a medial tibial condyle fracture in the left—superimposed on end-stage arthritis. The severity of joint degeneration, combined with bilateral fractures, ruled out conventional treatment options and demanded an innovative surgical solution.

Recognising the complexity of the case, he and his multidisciplinary surgical team developed a carefully structured treatment plan aimed at restoring joint function while minimising the risks associated with prolonged immobilisation. Conventional staged fracture fixation followed by delayed joint replacement was considered impractical because neither lower limb could adequately bear weight during recovery. Conservative treatment was equally unsuitable due to the advanced degeneration of both knee joints.

The team adopted a meticulously planned three-stage surgical strategy. The first procedure involved a right total knee replacement combined with fixation of the femoral condyle fracture using a distal femoral locking compression plate. The second stage focused on reconstruction of the left tibial condyle fracture through high tibial osteotomy, iliac crest bone grafting, and plate revision. The final stage consisted of a left total knee replacement using an augmented-stemmed tibial component to achieve long-term stability and functional restoration.

The patient's recovery demonstrated the effectiveness of this individualised treatment approach. Early postoperative rehabilitation, including supervised physiotherapy and assisted ambulation, was initiated soon after surgery. Within eight weeks, the patient experienced significant pain relief, improved mobility, and regained functional independence. Radiological evaluations confirmed satisfactory fracture healing, proper implant positioning, and restoration of limb alignment, while clinical outcome scores showed substantial improvement without major postoperative complications.

Beyond its clinical success, the case has considerable academic importance. Based on an extensive review of available literature, no previously published report has documented the successful management of bilateral asymmetric intra-articular fractures combined with bilateral end-stage knee osteoarthritis using such a comprehensive arthroplasty and fracture reconstruction strategy. The publication therefore provides valuable guidance for orthopaedic surgeons managing similarly rare and complex conditions.

His work highlights the importance of personalised treatment planning, multidisciplinary collaboration, and advanced surgical techniques in addressing challenging musculoskeletal disorders. It also demonstrates how modern orthopaedic interventions can successfully restore mobility, independence, and quality of life even in patients with severe disabilities.

Through this landmark achievement, Dr. Akshaya Kumar Mehara has made a noteworthy contribution to global orthopaedic practice, reinforcing his commitment to clinical excellence, medical research, and innovation. His pioneering work serves as an important reference for surgeons worldwide while expanding the possibilities of complex knee reconstruction and geriatric orthopaedic care.