Total Knee Arthroplasty for Complex Osteoarthritic Varus Knee Deformities

Thesis

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Abstract

Purpose: Complex varus deformities typically are associated with contracture of soft tissue on the concave side of the deformity with severe laxity on the convex side, and substantial bone loss, in addition to a significant sagittal plane deformity, such as flexion contracture or internal tibial torsion, and sometimes diaphyseal tibial varus deformity. The purpose of this prospective study is to present the short to mid-term follow up and results of total knee arthroplasty performed for cases of complex osteoarthritic varus knee deformities highlighting their pre-operative planning and methods for bony reconstruction and soft tissue balancing.

Patients & Methods: In the period between February 2015 and March 2018, a prospective study was conducted in Ain Shams University Hospitals, including 41 patients with 45 knees with complex osteoarthritic varus deformities who are candidates for primary total knee arthroplasty. The group of patients included 5 males (12%) and 36 (88%) females with a mean age at the time of surgery of 60.31±4.24 years old (range from 55 to 73 years) with varus knee deformities associated with knee flexion deformities ≥ 15 degrees, internal tibial torsion, or lateral knee thrust. Clinical outcomes were compared, including Knee Society knee and functional scores and complication rates.

Results: At last follow up, the average knee society score (KSS) was 91.5 compared with average preoperative KSS of 12.8 (range from 0 to 39). The average knee function score was 82 compared with average preoperative knee function score of 36. The average postoperative flexion deformity was$1.1^0 \pm 2^0$ in comparison to the average pre-operative flexion deformity of $17.4^0 \pm 7^0$. No

progressive radiolucent lines, wound healing problems, infection or signs of component loosening or osteolysis at the final follow-up of all patients.

Conclusion*:* Success in management of complex knee deformities in osteoarthritic patients can be achieved by meticulous preoperative planning and proper surgical techniques. Recent guidelines for deformity correction during total knee replacement showed excellent to good results in all cases of this study.

Keywords: Total knee arthroplasty, Osteoarthritis, Complex varus deformity, Flexion deformity.

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