Early outcome of unicompartmental interpositonal arthroplasty of the lateral compartment of the knee, utilizing a metallic implant

Purpose: interpositional arthroplasty is a bone-preserving treatment option for unicompartmental gonarthrosis of which the risks and benefits have not been clearly defined. The early experience with the Orthoglide-lateral implant (Advanced BioSurfaces) is presented as a one surgeon consecutive case series. No funding was provided or received for this study.

Methods: the prospectively collected records of the author's initial 18 patients who received an interpositional arthroplasty for lateral compartment osteoarthritis of the knee were reviewed. The study period was January 26, 2010, to April 17, 2012. Minimal follow-up was 6 months. Prior to surgery, patients had been thoroughly counselled about the uncertainties associated with the procedure. Some extrapolation from the early experience with a medial interpositional arthroplasty using the Orthoglide-medial implant (Advanced Bio Surfaces) was feasible, particularly regarding the surgical technique. The consistency and extent of functional improvement were unknown. Given the more lax nature of the lateral compartment of the knee compared to the medial compartment, as well as the documented increased risk of bearing dislocation with some mobile bearing lateral unicompartmental knee replacements, particular emphasis was placed on the possibility of implant dislocation. During the period under review, the implant was available through the Special Access Program of Health Canada. Thirteen women (average age 75 years, range 44- 87) and five men (average age 76 years, range 67-85) underwent arthroscopically assisted interpositional arthroplasty for lateral compartment gonarthrosis. All procedures were performed under intra-venous sedation and local anesthesia, as a daycare procedure. Sufficient bone removal was needed to create a flat tibial surface, using a burr or rasp. After arthroscopic preparation, a lateral arthrotomy of approximately 5-7 cm was made to allow implant insertion.

Outcome of the procedure at 6 months was rated by the surgeon as 'good' (satisfactory, steady-state, likelihood of early revision low), 'fair' (implant merely tolerated, not a steady-state, likelihood of early revision significant) or 'poor' (implant not tolerated, revision pending or performed).

Results: Average length of follow-up was 18 months (median 16 months, range 6-27 months). The procedures were completed as intended in all cases, no conversion to general anesthesia or an alternate form of arthroplasty was needed. No patients required overnight stay or early re-admission. No infections were encountered. No dislocations occurred. No revision surgery was performed. Average knee flexion at 6 months was 115 (± 30) degrees, median knee flexion was 130 degrees, 15 out 18 patients had knee flexion over 110 degrees.
No patient was lost to follow-up. Surgeon rating at 6 months was 'good' regarding 14/18 patients (78%), 'fair' regarding 4/18 patients (22%).

Conclusion:
Interpositional arthroplasty for lateral compartment gonarthrosis is a treatment option with low initial morbidity which can provide an outcome acceptable to patients by 6 months in the 70-80% range. It is expected that future revision options are not significantly compromised by this procedure. Further study is needed regarding its efficacy.