One year outcome of unicompartmental interpositonal arthroplasty of the medial 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 one year experience with the Orthoglide (Advanced Bio Surfaces) implant 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 30 patients who received an interpositional arthroplasty for medial compartment osteoarthritis of the knee were reviewed up to the one year mark for each patient. The study period was July 15, 2009, to July 15, 2010. Prior to surgery, patients had been thoroughly counselled about the uncertainties associated with the procedure. During the period under review, the implant was available as a product licensed by Health Canada for use in treatment of medial compartment osteoarthritis of the knee. Twenty-three men and seven women (average age 63.9 years, range 44 to 87 years) underwent arthroscopically assisted interpositional arthroplasty for medial 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 medial arthrotomy of approximately 5-7 cm was made to allow implant insertion.

Outcome of the procedure at 1 year 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: The procedures were completed as intended in all cases, no conversion to general anesthesia was needed. No patients required overnight stay or early re-admission. One patient developed a hemarthrosis which was debrided 37 days after the index procedure. No dislocations occurred, no revision surgery was performed in the first year post-operatively in any of the patients.
Knee flexion was 125 (± 10) degrees at two months, 128 (± 7) degrees at six months, 131 (± 7) degrees at 12 months.
One patient was lost to follow-up. Surgeon rating was 'good' regarding 22/29 patients (76%), 'fair' regarding 3/29 patients (10%), 'poor' regarding 4/29 patients (14%). (With the patient lost to follow-up assigned to the 'poor' group, these numbers would change to 73% 'good', 10% 'fair' and 16% 'poor'.) In the 'poor' group, significant progression of osteoarthrosis in the lateral compartment was noted in two patients, the two remaining patients had unrelenting discomfort in the absence of radiographic progression of degenerative changes. Revision to total knee replacement was offered to all 4 patients in the 'poor' group.

Conclusion:
Interpositional arthroplasty for medial compartment gonarthrosis is a treatment option with low initial morbidity which can provide an outcome acceptable to patients by one year in the 70-75% range. It is expected that future revision options are not significantly compromised by this procedure. Further study is needed regarding its efficacy.