Early Experience with Unlinked PFA and UKA
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Introduction
The success of unicompartmental knee arthroplasty (UKA) in patients with medial or lateral tibiofemoral osteoarthritis (OA) has been well documented. For those patients who do not meet the criteria for UKA due to excessive patellofemoral disease, the procedure of choice has been total knee arthroplasty (TKA).

There is an increasing population of patients who are interested in having the least amount of surgery required, retaining as many well functioning structures as possible, as well as having a high expectation for functional activity after surgery. These patients are often keen to avoid TKA but have arthroplasty level disease in 2 compartments making them a suboptimal candidate for UKA alone. Bi-compartmental knee arthroplasty is able to achieve the goals of addressing the 2 compartments with significant arthritic involvement while preserving the opposite tibiofemoral compartment and cruciate ligaments.

Material & Methods
This is a retrospective review of our initial consecutive series of 8 patients who met the indications for bi-compartmental knee arthroplasty and were also interested in avoiding total knee arthroplasty. 5 males and 3 females with an average age of 55 (range: 50 – 63). 7 had medial UKA and 1 had lateral UKA with all patients having PFA. 3 patients were done at a hospital as inpatients and 5 were done as outpatient procedures at an ambulatory surgery center.

Treatment Algorithm

![Treatment Algorithm Diagram]

Implant Selection
Stryker PKR - UKA: Single radius design, simple instrumentation, X3 polyethylene.
Arthrosurface Wave - PFA: Highly conforming and bone sparing design and instrumentation allowing implantation through UKA incision.

Technical Pearls

**PFA:** Map out ideal location of trochlear component prior to UKA so that the femoral UKA component can be positioned to not conflict with the PFA. Ensure that the device is recessed by 0.5-1mm relative to the surrounding articular cartilage - especially the inferior and superior margins.

**UKA:** Don’t over correct - adequate tibial resection is essential.

Preliminary Results
No intraoperative complications. The average tourniquet time was 85 minutes (range: 72 -121). The length of hospitalization for outpatient procedures was 90 minutes, for in-patient procedures on average 3 days. Rehab summary: Weight bearing as tolerated is encouraged with crutches for the first 2-3 days and discontinued as tolerated. No formal therapy is prescribed for the first 2 weeks but range of motion exercises and straight leg raises are encouraged. Stationary bicycling is started on POD#3. By 4 weeks postoperatively, all patients were ambulating well without walking aids. At last follow-up between 1 and 2 years, no radiographic or clinical indications of disease progression or implant failure was noticed and patients had resumed an active lifestyle including singles tennis, surfing, and snow skiing.

Figure 1 and 2: Intraoperative View: Unlinked PFA and UKA performed through the standard UKA Incision.

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Figure 3: Preop. AP x-ray with bilateral medial compartment and PF DJD. Figure 4: Postop. AP x-ray after bilateral unlinked PFA and UKA arthroplasty.