What are the indications for UKA?
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1. Anterior cruciate ligament
In a cadaver testing, the ACL-deficient knee after UKA exhibited significantly
greater anterior tibial translations than the native knee and the knee after UKA with
an intact ACL (Suggs JF, J Arthroplasty, 2004). Although some studies showed no
significant difference in clinical results or survivorship of UKA between the ACL-
knees and ACL+ knees groups (Boissonneault A, Knee Surg Sports Traumatol Arthros., 2013),
a functional ACL is necessary to ensure normal stability after UKA.

2. Patellofemoral joint
Berend KR et al compared the failure rate of mobile-bearing, medial UKA in
patients with and without preoperative radiographic evidence of patellofemoral
joint degeneration. They found no survival difference was noted between knees
with medial or lateral patellofemoral joint disease (Orthopedics, 2011).
Song EK et al also reported that preoperative anterior knee pain and patellofemoral
joint degeneration were found to be unrelated to poor outcome (Knee Surg Sports
Traumatol Arthros. 2016). Current clinical results do not support patellofemoral
arthritis is contraindication for UKA.

3. Deformity
Classical indication was a correctable maximal anatomical coronal deformity of
10°varus or 15° valgus. For more detailed preoperative evaluation, we recently take
preoperative FULL-LENGTH valgus stress radiography (Tashiro Y, Knee Surg Sports
Traumatol Arthros. 2014). We showed strong correlation between postoperative
alignment and the values on the preoperative valgus stress radiographs.
Preoperative valgus stress radiography is useful for predicting the postoperative
coronal alignment, and this would help to more precisely select patients.
4. Obesity

Poor outcome of UKA was reported in the patients with BMI >32 kg/m² (Berend KR, et al, CORR, 2005), or >35 kg/m² (Bonutti PM, et al, J Arthroplasty 2011). Although some studies reported obesity did not affect clinical results of UKA, TKA would be safe for high BMI patients.

5. Other issues

Previously, clinical outcome of UKA for spontaneous osteonecrosis was inferior to that for osteoarthritis, but recent studies reported excellent long-term clinical results for spontaneous osteonecrosis. On the other hand, it is difficult to do UKA for steroid-induced osteonecrosis due to relatively large lesion.

Controversy remains on the effect of bone marrow lesion on clinical results of UKA. Jacobs CA reported bone marrow lesion did not affect clinical results (J Arthroplasty 2016), but further investigation is necessary.

Activities and age are important factor to determine surgical procedure. Some studies reported high activities were not related to poor outcome of UKA, but recent reports show young age is a risk factor for revision (van der List JP, et al, J Arthroplasty, 2016) (Jeschke E, et al, JBJS, 2016).