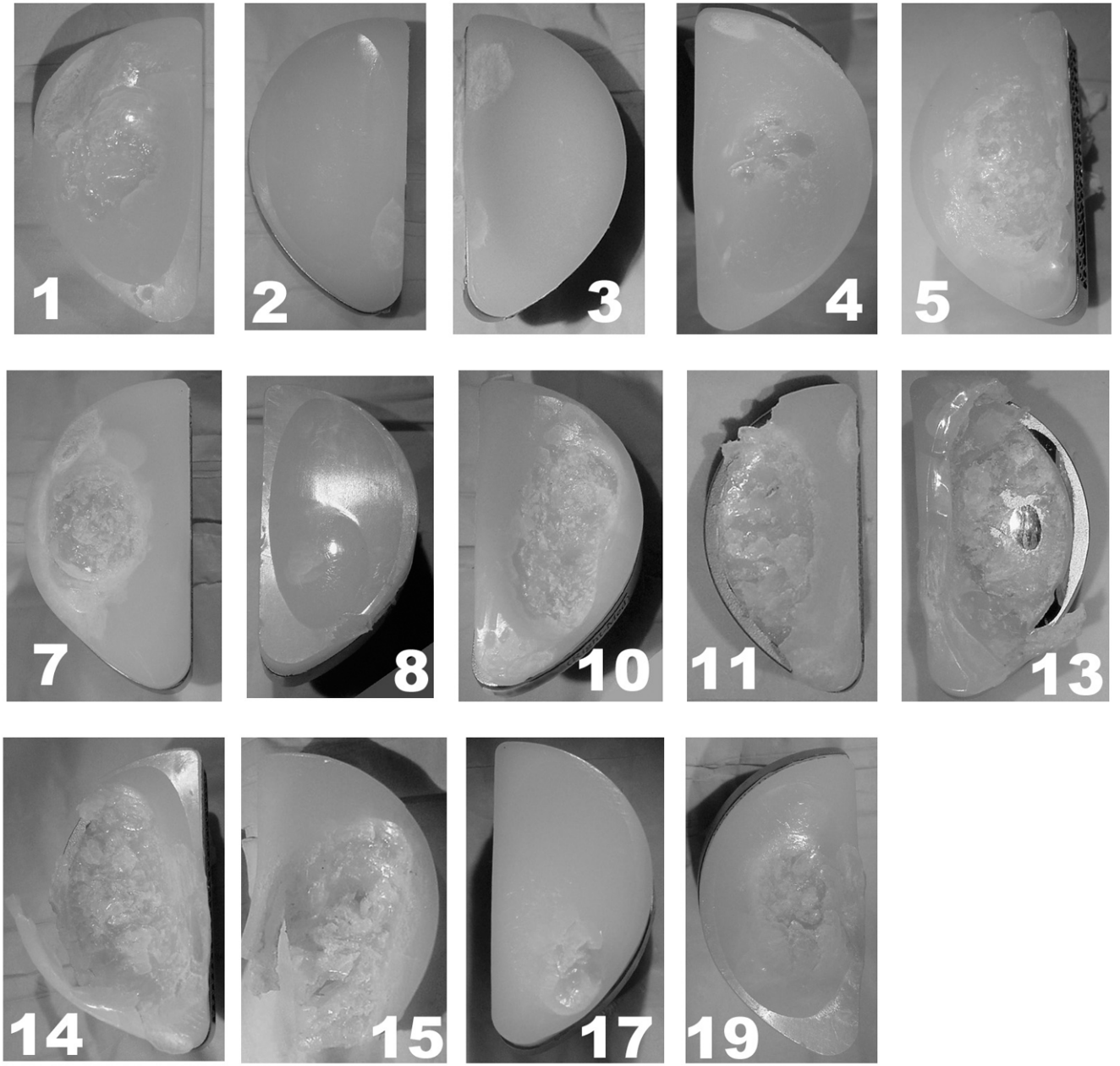

Fig. E-1

Photographs of the fourteen tibial components revised at our institution. In each photograph, the anterior aspect of the component is directed downward. The number superimposed on each image corresponds to the case number from Table E-1.

Table E-1 Synopsis of the 19 Revised Medial Compartment Unicondylar Prostheses

Case	Shelf Age	In Situ	Symptoms at Clinical Evaluation	Operative Findings at Revision
1	0.1	11.6	5y: occasional mild pain. 7y: rare pains medially when walking, effusion. 11y: new onset moderate pain, effusion, posted for contralateral revision and ipsilateral insert exchange.	Tibia: baseplate stable. Insert: central pitting, delamination, free flakes, osseous abrasion from femoral condyle posteromedially.
2	0.2	2.7	1y: baseplate lucency, moderate baseplate varus (14°). 3y: increasing medial pain that is worse with start-up, effusion, baseplate subsidence.	Tibia: baseplate loose. Insert: burnishing anteriorly, osseous abrasion laterally with lateral aspect of medial femoral condyle.
3	0.7	1.6	1y: leg fatigues but no functional limitations, baseplate lucency, extreme baseplate varus (22°). 1.5y: severe pain with clicking, effusion, baseplate subsided into more varus.	Tibia: baseplate loose. Insert: burnishing centrally and medially, osseous abrasion with lateral aspect of medial femoral condyle.
4	0.8	7.1	7y: 6m of discomfort with shifting and clicking, moderate activity-limiting and rest pain, moderate effusion, mediolateral laxity, tibial component subsidence and osteolysis, wear.	Tibia: baseplate loose, osteolysis, lateral degeneration. Insert: large pits centrally, marked burnishing loss. Stained synovium.
5	0.9	7.3	1y: pain, tenderness at plateau fracture screws, baseplate lucency. 1.5y: pain relieved by screw removal. 7y: pain for 1y, constant ache, effusion, baseplate subsided, sclerosis.	Tibia: baseplate loose, sclerosis. Insert: deep central pitting, peripheral delamination.
6	1.9	1.8	4m: anterolateral pain, rare sharp medial pains. 6m: occasional walking and stairs pain, effusion. 1y: moderate pain, diffuse tenderness. 1.5y: painful motion, pes tenderness.	Not available, revised elsewhere due to dissatisfaction with knee.
7	1.9	7.6	4m: retinacular tightness. 1y: lateral tissue pain. 2y: superolateral tenderness. 4y: baseplate lucencies, increasing tibiofemoral varus, lysis. 7y: increased pain, effusion, sclerosis, wear.	Tibia: baseplate loose, sclerosis, cystic defects. Insert: deep central pitting, peripheral delamination.
8	2.0	3.0	3y: moderate occasional pain, baseplate lucencies with anteromedial subsidence, posterior cruciate ligament insufficiency promoting edge loading anteriorly.	Tibia: baseplate loose, fractured cement, fibrous tissue, necrosis. Insert: wear groove anteriorly, subsurface failure.
9	2.4	2.9-3.3	Asymptomatic at 6 weeks and 4 months.	Not available, revised elsewhere due to dissatisfaction with knee.
10	2.5	4.3	1y: occasional medial twinge with activities. 2y: medial activity pain, effusion, synovial hypertrophy, baseplate lucency. 3y: mild occasional medial pain, wear. 4y: moderate pain, effusion, baseplate lucencies, wear, osteolysis.	Tibia: baseplate loose, fibrous tissue, osteolysis. Insert: severe central pitting. Stained synovium in suprapatellar pouch.
11	2.5	6.1	2y: medial pain with activities. 3y: mild occasional medial pain. 5y: mild stair pain, wear, increasing tibiofemoral varus. 6y: moderate pain with stairs, severe effusion, wear.	Tibia: baseplate stable. Insert: Extensive pitting, complete fracture at medial rim. Impending metal-on-metal abrasion.
12	2.7	0.6	4m: anterior pain, retinacular tightness, swelling, effusion. 6m: tightness, pain radiates down leg. 7m: pain extends medial to anterior, pulling and stinging with walking or flexion.	Not available, revised elsewhere due to dissatisfaction with knee.
13	3.5	8.3	1y: baseplate lucency. 2y: effusion. 8y: 2-mo history of pain and swelling that is increasing and limiting motion, severe effusion, possible wear-through.	Tibia: baseplate loose, osteolysis, sclerosis. Insert: central and peripheral wear-through. Metallosis. Synovitis.
14	3.8	3.4	1y: rare episodic pains, baseplate lucency. 2y: occasional pain with prolonged walking that resolves spontaneously. 3y: continuous pain, tibial component subsided, wear.	Tibia: baseplate loose, fibrous tissue, osteolysis. Insert: severe pitting centrally, free flakes. Hypertrophic stained synovium.
15	3.8	3.8	1y: effusion, recent pain episode. 3y: mild start-up pain, effusion, wear, baseplate lucencies. 3.5y: moderate occasional pain, severe effusion, increasing tibiofemoral varus, wear.	Tibia: medial cyst, baseplate stable. Insert: severe pitting, fracture. Early metal-on-metal abrasion. Substantial synovitis.
16	3.8	5.2-6.2	4m: effusion.	Not available, revised elsewhere due to dissatisfaction with knee.
17	3.9	0.8	6w: swelling, effusion, stiffness. 4m: continued soreness, effusion. 9m: increased pain and swelling, severe effusion, tibial component subsided anteriorly.	Tibia: baseplate loose and subsided anteriorly into necrotic bone. Insert: two deep pits and subsurface fatigue failure anteriorly.
18	4.2	3.5	7m: mild pain, effusion. 1y: medial and lateral pain onset with swelling. 3.5y: increasing pain, moderate effusion, baseplate subsided into lytic defect, increasing tibiofemoral varus.	Not available, revised elsewhere after relocation and referral.
19	5.3	0.9	4m: effusion. 9m: onset medial pain, baseplate loose, lysis, increasing tibiofemoral varus.	Tibia: baseplate loose, lysis. Insert: central pitting, delamination.

shelf age and time in situ in years; w: week, m: month, y: year

Table E-2. Results from logistic regression analysis of risk factors for revision of a medial compartment arthroplasty.

Parameter	Significance of Parameter	Unit Change in Parameter	Unit Change in Parameter Increased Odds for Revision by a Factor of
Shelf Age of Polyethylene Insert	$p < 0.01$	1 Year Increase	2.3 (1.5 to 3.5)
Patient Age at Surgery	$p = 0.04$	10 Year Decrease	3.0 (1.0 to 8.7)
Initial Thickness of Polyethylene Insert	$p = 0.06$	1 mm Decrease	1.9 (1.0 to 3.7)
Varus Angle of Tibial Component	$p = 0.15$	5 ° Increase	2.1 (0.8 to 5.6)
Patient Weight at Surgery	$p = 0.18$	10 kg Decrease	1.5 (0.8 to 2.6)
Patient Gender	$p = 0.53$	Male	1.5 (0.4 to 4.9)
Postoperative Position of Mechanical Axis Relative to Center of Knee	$p = 0.90$	10 mm Medial Shift	1.0 (0.6 to 1.6)

Cox logistic regression model was significant ($p < 0.01$)
95% confidence intervals on the odds ratio increase are listed in parentheses
Significance of parameter is independent of the selected unit change in the parameter
An odds ratio above 1.0 signifies increased risk, whereas an odds ratio below 1.0 indicates decreased risk