

Case	Sex	Age, yr	Side	Anatomical site	Indication	Pathology	Chemo-therapy	Bone replacement length, mm	Coating	Bone graft type	Date of operation	Last radio-graph	FU, yr	Extracortical Bone Formation (%)*		Late complications	Cement
														2-yr follow-up	Final follow-up		
1	F	41	L	Femoral diaphysis	Primary tumor resection	CS, neo	N	180	Ti fiber	Auto	7-28-78	12-7-98	20	100; 75	100; 100		N
2	M	38	L	Femoral diaphysis	Revision of porous stem fracture	OS, neo	N	130	Ti fiber	Auto	7-14-83	3-4-97	14	100; 90	100; 100		Y
3	F	28	L	Hip, proximal femur	Revision of loose implant	OS, neo	N	105	Ti fiber	Auto	6-19-84	5-19-95	11	20	25	Late acetabular loosening	Y
4	F	17	R	Hip, proximal femur	Revision of fractured stem	Gorham's disease, non	N	215	Ti fiber	Auto	1-6-82	12-16-98	16	80	100	Late acetabular loosening	Y
5	M	33	R	Hip, proximal femur	Revision of implant fracture	GCT, neo	N	190	Ti fiber	Auto, allo	5-17-84	4-29-99	15	70	75	Late acetabular loosening	Y
6	F	37	L	Hip, proximal femur	Primary tumor resection	CS, neo	N	155	Ti fiber	Auto	4-15-86	7-15-96	10	90	70		Y
7	F	59	R	Hip, proximal femur	Revision of nontumor implant	Hip trauma, non	N	140	Ti fiber	Auto	9-22-82	3-3-93	11	50	60		Y
8	F	58	L	Hip, proximal femur	Revision of nontumor implant	CDH, non	N	110	Co beads	Auto, allo	12-10-85	11-13-91	6	10	10		Y
9	M	67	R	Hip, proximal femur	Revision of nontumor implant	CDH, non	N	230	Ti fiber	Allo	12-10-86	3-3-93	7	100	100		Y
10	F	69	R	Hip, proximal femur	Revision of nontumor implant	CDH, non	N	225	Co beads	Auto	11-8-89	3-3-93	4	50	80		Y
11	F	19	R	Hip, proximal femur	Revision of loose implant	Ewing's tumor, neo	Y (pre, post)	125	Ti fiber	Auto	5-28-86	7-24-97	11	25	50		Y
12	F	67	R	Hip, proximal femur	Revision of nontumor implant	CDH, non	N	90	Co beads	Auto	11-2-84	11-19-90	6	100	100	Late acetabular loosening	Y
13	F	25	L	Hip, proximal femur	Revision of loose implant	GCT, neo	N	135	Ti fiber	Auto	11-27-85	2-23-99	14	20	60	Dislocated hip	Y
14	M	42	L	Hip, proximal femur	Revision of loose implant	Lymphoma, neo	N	180	Ti fiber	Auto	8-21-90	5-26-98	8	100	100		Y
15	M	21	R	Knee arthrodesis	Revision of loose implant	OS, neo	Y (pre only)	180	Ti fiber	Auto, allo	11-12-86	9-28-98	12	75; 50	75; 80		Y
16	M	24	L	Knee arthrodesis	Primary tumor resection	DF, neo	N	180	Ti fiber	Auto	5-19-81	7-2-91	10	100; 90	100; 90		N
17	M	29	R	Knee arthrodesis	Primary tumor resection	GCT, neo	N	210	Ti fiber	Auto	1-8-82	2-22-84	2	90; 100	90; 100		N
18	F	50	L	Knee arthrodesis	Revision of loose implant	RA, non	N	190	Ti fiber	Auto	6-13-88	6-30-95	7	100; 100	100; 100		N
19	F	49	L	Knee arthrodesis	Primary tumor resection	MFH, neo	N	155	Ti fiber	Auto	4-3-86	3-27-91	5	0; 100	0; 100	Loose tibial component	Y
20	F	22	L	Knee arthrodesis	Primary tumor resection	OS, neo	Y (pre, post)	235	Ti fiber	Auto	9-17-86	3-30-99	13	55; 50	75; 60		Y
21	F	26	L	Knee arthrodesis	Primary tumor resection	OS, neo	N	175	Ti fiber	Auto	9-21-84	5-21-91	7	10; 15	20; 0		Y
22	F	16	R	Knee arthrodesis	Primary tumor resection	OS, neo	Y (pre only)	265	Ti fiber	Auto	8-2-82	12-14-90	8	100; 75	100; 80	Fracture of proximal and distal stems, car accident	Y
23	F	68	R	Knee, distal femur	Revision of loose implant	CS, neo	N	185	Co beads	Auto	11-6-84	3-30-95	11	100	100		Y
24	M	19	L	Knee, distal femur	Primary tumor resection	OS, neo	Y (pre only)	195	Co beads	Auto	9-14-88	1-29-99	11	30	50		Y
25	F	30	L	Knee, distal femur	Primary tumor resection	OS, neo	Y (pre only)	160	Co beads	Auto	2-19-87	1-29-99	12	10	15		Y
26	F	41	R	Knee, distal femur	Revision of loose implant	GCT, neo	N	115	Co beads	Auto	2-1-90	2-23-98	8	40	20	Fracture of proximal femur	Y
27	M	37	R	Knee, distal femur	Revision of implant, allogenic component	OS, neo	N	250	Co beads	Auto	9-20-88	12-19-94	6	100	100	Deep infection, amputation	Y
28	F	15	R	Knee, distal femur	Primary loose resection	Ewing's tumor, neo	Y (pre, post)	115	Ti fiber	Auto	12-7-89	5-17-94	5	100	100		Y
29	M	38	R	Knee, distal femur	Revision of loose implant	GCT, neo	N	185	Co beads	Auto	8-26-82	8-27-95	13	100	100	Fracture of shaft of proximal bone	Y

30	F	21	L	Knee, distal femur	Revision of nontumor implant	Gorham's disease, non	N	225	Co beads	Auto	10-10-89	4-9-98	9	25	60		Y
31	M	29	R	Knee, distal femur	Primary tumor resection	OS, neo	Y (pre, post)	215	Co beads	Auto	4-28-88	12-22-97	9	100	100		Y
32	F	15	L	Knee, distal femur	Primary tumor resection	OS, neo	Y (pre, post)	225	Co beads	Auto	3-28-89	11-28-97	8	10	70		Y
33	F	74	L	Knee, distal femur	Revision of nontumor implant	DJD, non	N	205	Co beads	Auto	11-16-89	8-15-96	7	100	100		Y
34	M	65	R	Knee, distal femur	Revision of loose implant	GCT, neo	N	270	Co beads	Auto	10-16-85	9-28-98	13	50	100		Y
35	M	27	L	Knee, distal femur	Revision of loose implant	GCT, neo	N	195	Co beads	Auto	7-14-83	6-20-94	11	50	50	Revision to kinematic rotating hinge, 3-10-92; osteolysis	Y
36	M	29	L	Knee, distal femur	Revision of fractured implant	OS, neo	N	220	Co beads	Auto, allo	7-20-89	3-14-94	5	75	100		Y
37	M	31	R	Knee, distal femur	Primary tumor resection	OS, neo	Y (pre, post)	165	Co beads	Auto	4-13-89	8-22-95	6	50	65		Y
38	M	14	R	Shoulder, proximal humerus	Primary tumor resection	OS, neo	Y (pre, post)	225	Ti fiber	Auto	10-18-85	6-3-93	8	40	20	Loose setscrew, taper lock fracture	Y
39	M	16	L	Shoulder, proximal humerus	Revision of tumor implant	OS, neo	Y (pre, post)	175	Ti fiber	Auto	8-2-88	12-19-97	9	20	60		Y
40	F	22	R	Shoulder, proximal humerus	Primary tumor resection	OS, neo	Y (pre, post)	235	Ti fiber	Auto, allo	6-16-88	2-15-91	3	10	10	Loosening of screws	Y
41	F	32	L	Tibial diaphysis	Primary tumor resection	CS, neo	N	175	Ti fiber	Auto	12-13-76	11-3-94	18	100; 75	95; 90		N
42	F	21	L	Tibial diaphysis	Primary tumor resection	OS, neo	N	150	Ti fiber	Auto	2-13-79	4-20-99	20	100; 80	100; 95		N
43	F	52	L	Femoral diaphysis	Primary tumor resection	CS, neo	N	145	Ti fiber	Auto	12-29-77	6-12-87	10	20; 20	20; 25		N

CDH, congenital dysplasia of the hip; Co, cobalt; CS, chondrosarcoma; DJD, degenerative joint disease; EBBI, extracortical bone bridging and ingrowth; FU, follow-up; GCT, giant cell tumor; MFH, malignant fibrous histiocytoma; N, no; neo, neoplastic condition; non, non-neoplastic condition; OS, osteosarcoma; pre, preoperative; post, postoperative; RA, rheumatoid arthritis; Ti, titanium; Y, yes.

*The magnitude of extracortical bone formation was measured along the critical region of 2.0 cm over the implant-bone junction in two projections. The new bone formed in this region that was directly juxtaposed to the porous implant surface with a thickness greater than 1 mm was counted as positive EBBI and expressed as the percentage of the four measuring zones.