

TABLE E-1 Overview of Demographic Details and Indications in the Tumor and Revision Groups

	Tumor	Revision	Total
No. of patients	37	15	52
No. of implants	38	15	53
Distal humeral replacement	27 (71%)	14 (93%)	41 (77%)
Total humeral replacement	11 (29%)	1 (7%)	12 (23%)
Sex			
Male	21 (57%)	4 (27%)	25 (48%)
Female	16 (43%)	11 (73%)	27 (52%)
Mean age (yr)	54	59	55
Mean follow-up (mo)	28	28	28
Previous surgery (<i>no. of patients</i>)	14 (38%)	15 (100%)	29 (56%)
Indication (<i>no. of patients</i>)			
Primary tumor	14 (38%)	–	14 (27%)
Metastasis	23 (62%)	–	23 (44%)
Pseudarthrosis	–	6 (40%)	6 (12%)
Failed arthroplasty	–	5 (33%)	5 (10%)
Ankylosis	–	2 (13%)	2 (4%)
Osteomyelitis	–	1 (7%)	1 (2%)
Supracondylar fracture	–	1 (7%)	1 (2%)

TABLE E-2 Overview of Reports on Segmental Defect Reconstructions Around the Elbow

Study (year)	Indication	Type of reconstruction	No. of Elbows	Results*	Revision Rate
Present series	Tumor	Modular prosthesis	38	78% (MSTS), 84 points (Inglis-Pellicci)	18%
Present series	Revision	Modular prosthesis	15	76 points (Inglis-Pellicci)	47%
Hanna et al. ⁷ (2007)	Tumor	Modular prosthesis	18	76% (MSTS)	50%
Ross et al. ²⁰ (1987)	Tumor	Modular prosthesis	26	Not indicated	23%
Kulkarni et al. ²¹ (2003)	Tumor	Modular prosthesis	10	73% (TESS)	40%
Sperling et al. ¹ (1999)	Tumor	Standard elbow replacement	13	Not indicated	46%
Mansat et al. ³ (2004)	Revision	Allograft-prosthesis composite	13	67% (MEPS)	38%
Renfree et al. ⁵ (2004)	Revision	Allograft-prosthesis composite	14	71% (Morrey)	50%
Kharrazi et al. ⁶ (2008)	Tumor (all but one)	Osteoarticular allograft	19	75% (of healthy preop. function)	32%
Athwal et al. ²² (2005)	Tumor	Standard elbow replacement	20	75% (MEPS)	50%
Weber et al. ⁴ (2003)	Tumor	Various	23	77% (MSTS)	35%

*MSTS = Musculoskeletal Tumor Society scoring system, Morrey = Morrey scoring system; MEPS = Mayo Elbow Performance Score, TESS = Toronto Extremity Salvage Scoring system. All scores indicated refer to 100% as maximum functional outcome.