

TABLE E-1. Results of Semiquantitative Histological Analysis*

Site	Macrophages†	Giant Cells‡	Metal Particles§	Histiocyte Metal Content#	Polymethylmethacrylate**	Necrosis††
Distal stem	1.4	0.7	2	2.1	0.1	0
Acetabular membrane	0.9	0	1.1	1.2	0	0
Femoral membrane	1.1	0.2	1.1	1.3	0.3	0
Superior capsule	0.9	0	1.1	0.8	0	0.2
Posterior capsule	1.1	0	1.7	1.5	0	0.3
Anterior capsule	0.6	0.3	0.4	0.2	0.2	0

*The data are given as the average result of ten random fields viewed at forty times magnification and are expressed according to the following rating scales. †0 = none, 1 = one to five, 2 = six to forty-nine, 3 = fifty or more. ‡0 = none; 1 = one; 2 = two, three, or four; 3 = five or more. §0 = none, 1 = one to nineteen, 2 = twenty to 500, 3 = more than 500. #0 = none, 1 = slate-blue cytoplasm, 2 = dusty, 3 = dark cytoplasm. **0 = no holes; 1 = one, two, or three holes; 2 = four, five, or six holes; 3 = seven holes or more. ††0 = none, 1 = 1% to 10% of field, 2 = 11% to 50% of field, 3 = >50% of field.

TABLE E-2: Ion Levels in Liver Samples*

Sample	Cobalt (<i>ng/g</i>)	Chromium (<i>ng/g</i>)	Nickel (<i>ng/g</i>)	Titanium (<i>ng/g</i>)	Aluminum (<i>ng/g</i>)	Vanadium (<i>ng/g</i>)
Study patient						
Average	118.84	104.92	11.36	94.45	2555.25	11.49
Standard deviation	2.77	3.23	0.67	4.68	68.91	0.95
Control						
Average	27.42	Below detection	Below detection	Below detection	201.27	Below detection
Standard deviation	1.11				16.69	

*The average of four samples run in triplicate.