

## **Electronic Appendix**

### *Validation of Volumetric*

#### *Measurements on Slab Radiographs*

Our method of measuring the true volume of osteolytic lesions on the slab radiographs was validated by embedding a block of polymethylmethacrylate of known volume into the clear polymethylmethacrylate used to embed specimens. The specimens with the embedded block of polymethylmethacrylate were then sectioned at 3-mm intervals. The resulting slabs were radiographed, scanned, and measured with use of the same protocol employed for the embedded retrieved specimens. Our validation model had an average error of  $0.4\% \pm 4.2\%$  (range,  $-5.42\%$  to  $5.8\%$ ) and  $0.03 \pm 0.1 \text{ mm}^3$  (range,  $-0.1 \text{ mm}^3$  to  $0.1 \text{ mm}^3$ ). Linear regression resulted in an  $r^2$  value of 0.998, a slope of  $1.04 \text{ mm}^3$ , an intercept of  $-0.0962 \text{ mm}^3$ , and a p value of 0, indicating a strong and significant relationship between the volumes measured with the Martell method and the actual volumes.