http://dx.doi.org/10.2106/JBJS.L.00641

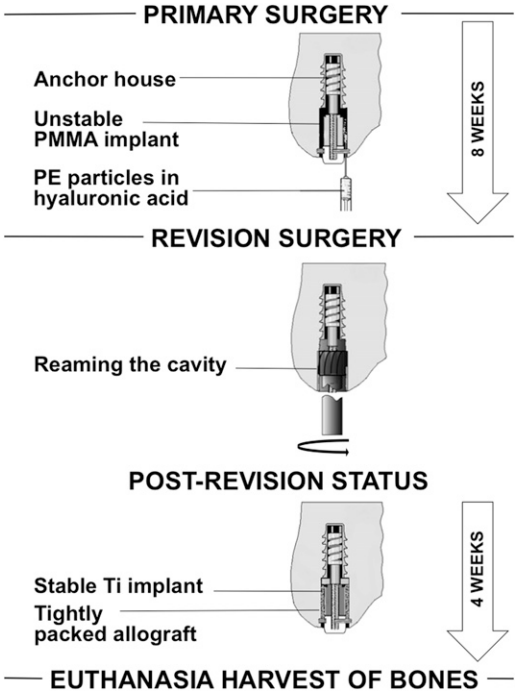

Fig. E-1

Outline of the surgical protocol. (1) Primary surgery: A micromotion device is inserted in the medial condyle, with the anchor house placed in the deep cavity. The internal spring in the anchor house is calibrated to control the micromotion of the piston in the superficial cavity (500 μm upon knee flexion). A polymethylmethacrylate (PMMA) implant is attached to the piston. To simulate wear particles, the overdrilled 0.75-mm gap surrounding the implant is filled with polyethylene (PE) particles administered in hyaluronic acid. Finally, a PE plug is mounted on the piston. The plug is adjusted to extend proud to the joint surface to ensure loading during each gait cycle. (2) Revision surgery: After eight weeks, the PE plug and PMMA implant are removed while the anchor house with piston is left in situ. The neocortex (sclerotic shell) that formed in the superficial cavity during the pistoning process is meticulously removed. (3) Post-revision status: A porous-coated titanium revision implant is screwed onto the piston. The revision implant is sized to prevent any micromotion. Allograft is tightly packed around the implant, and a new PE plug is attached to maintain load transfer.

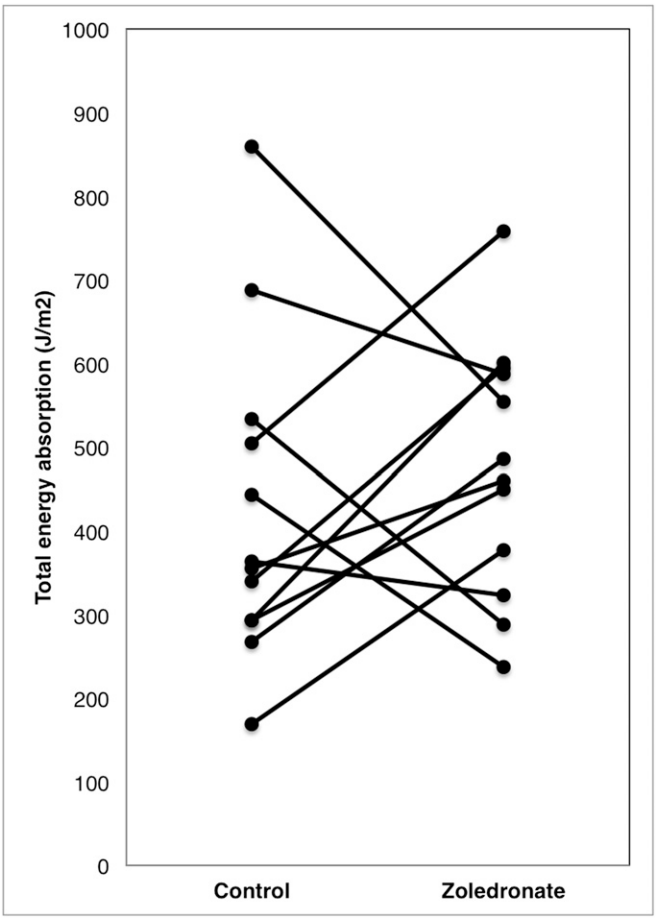

Fig. E-2

Paired plot of total energy absorption in J/m^2. The mean was 425 (95% CI, 302 to 549) in the control group and 475 (95% CI, 379 to 573) in the zoledronate group. The absolute difference between the means (zoledronate − control) was 50 (95% CI, −89 to 189).

http://dx.doi.org/10.2106/JBJS.L.00641

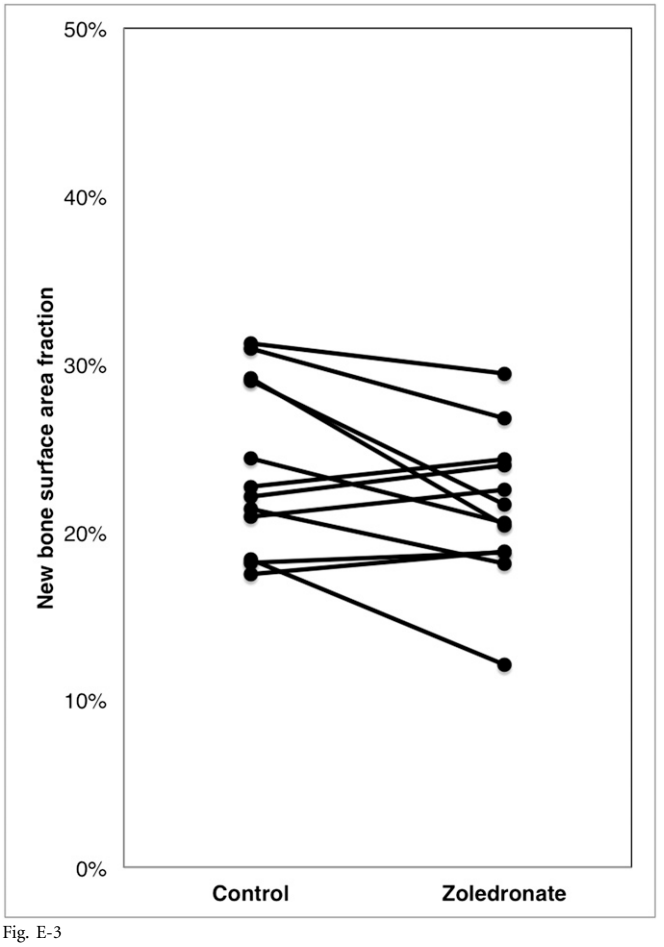

Fig. E-3

Paired plot of the new bone surface area fraction. The mean was 24% (95% CI, 21% to 27%) in the control group and 21% (95% CI, 19% to 24%) in the zoledronate group.

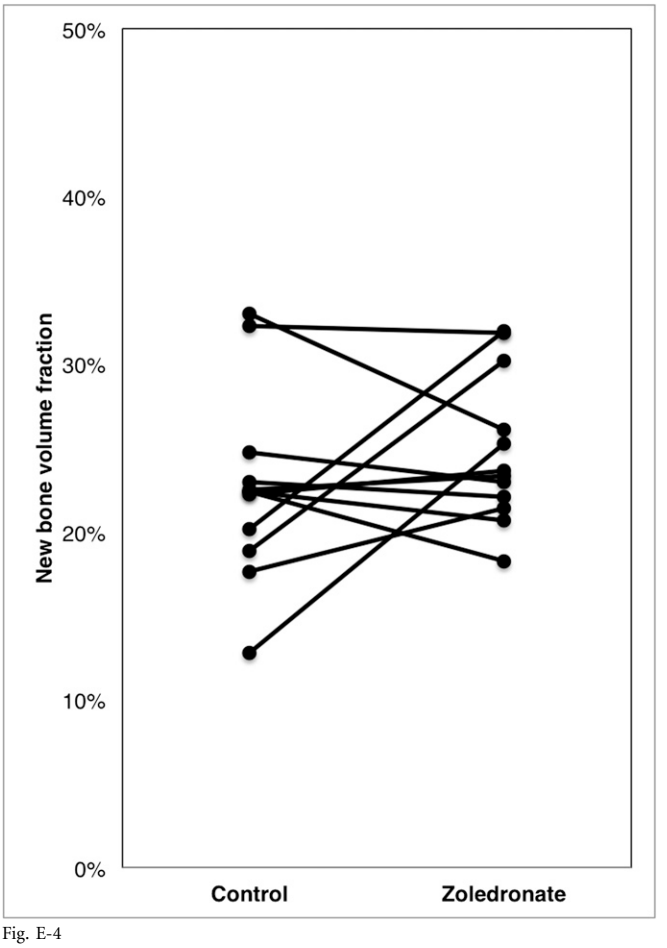

Fig. E-4

Paired plot of the new bone volume fraction. The mean was 23% (95% CI, 19% to 26%) in the control group and 25% (95% CI, 22% to 28%) in the zoledronate group.