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Tapered titanium stems viable in bone loss patients

by Janet (Picknally) Arzooman for Orthopedics Today

Tapered titanium stems worked well to maintain distal fixation in reconstruction patients with severe bone loss, a recent study showed.

"The Harris hip score improved significantly," said Jose A. Rodriguez, MD, of the department of orthopedic surgery, Lenox Hill Hospital, New York.

Femoral bone deficiency has been shown to adversely affect the results of revision THR. Tapered titanium modular stems allow distal fixation of the fluted, conical portion of the stem in the remaining bone, and may be a more versatile approach to fixation in the setting of bone loss, Rodriguez and colleagues reported.

The investigators examined 102 hips with proximal bone loss that had undergone revision femoral construction between 1998 and 2002 at three independent centers. All procedures used the Link MP modular stem (Exactech). Forty-three hips had Mallory Type 3c femoral deficiency, and 42 were exposed using a transfemoral osteotomy. "X-ray and intraoperative imagery were used routinely in order to ensure proper positioning of the stem and its effect against anterior corporal perforation," he said.

Most were significant cases

Five patients died before the two-year follow-up. The remaining 97 patients were followed for an average of 39 months. "The overwhelming majority were significant deficiency cases," Rodriguez said during a presentation at the American Academy of Orthopaedic Surgeons 72nd Annual Meeting.

The investigators used distal fixation, and they chose the proximal segment to optimize center of rotation. At follow-up, the mean Harris hip score improved from 36 to 84, Rodriguez reported. "Radiographically, 94 of the 97 hips had a stable radiographic interface with no circumferential lucencies around the distal body," he said. Lucencies around the proximal body were common, however.

"Extensively porous coated stems are and will remain our workhorse because they work exceptionally well in most patients," Rodriguez said. "However, there is a significant possibility for migration with severe bone deficiency."

Complications

Two hips with type 3c deficiency migrated and failed. They were each successfully revised using a larger implant. Five other hips had migration of 1 mm to 2 mm. And one stem in a 320-lb man fractured. That patient was revised to a larger implant, from an initial 14-mm implant to an 18-mm implant 16 months later, Rodriguez said. Ten hips dislocated; six were revised by altering the modular proximal segment.

"The goal was to assess the utility of this type of reconstruction in the setting of severe bone deficiency," Rodriguez said. "This is an excellent option with a proven survivorship."

For more information: Rodriguez JA, Fada RA, Murphy SB, et al. Does femoral bone loss predispose to failure in revision THR with a tapered titanium modular stem? #281, presented at the American Academy of Orthopaedic Surgeons 72nd Annual Meeting. Feb. 23-27, 2005, Washington.

Online: http://www.healio.com/orthopedics/hip/news/online/%7B659c1108-2fcd-4f2f-b29e-4fda4535417e%7D/tapered-titanium-stems-viable-in-bone-loss-patients