Cement or Cementless Hip Replacements?

In Finland, almost all patients who receive a total hip replacement are enrolled in a data registry called the Finnish Arthroplasty Registry. Information on the patient's age, sex (male or female), diagnosis, type of implant, and surgical approach is entered into a computer database.

The information is confidential as to the individual patient names. Having this type of information makes it possible for researchers to examine trends in treatment over time. Changes in surgical techniques, implant designs, and technology have the potential to also change results or outcomes. Keeping track of those changes and trends helps guide continued improvements in patient care.

In this particular study, the first ever effort was made to look at long-term results for patients with rheumatoid arthritis getting a total hip replacement. A specific focus of the data analysis was to see how well cemented versus cementless hip implants survive in patients 55 years old (or older) who have rheumatoid arthritis (RA).

The 4,019 hips included were broken down into three groups: one group who had cementless implants and two groups with cemented joint replacements. The majority of implants for this group were cemented in a 3:1 ratio (three cemented implants for every one cementless implant). The two cemented patient groups had implants with different stem designs.

The stem is the part of the femoral component that fits down inside the bone and supports the head of the femur as it fits into the hip socket. One cemented stem is called the loaded-taper stem. This type of stem settles down inside the bone as the patient puts weight on the leg. The second stem type is the composite-beam stem. This stem is truly cemented in and shouldn't budge or shift.

The results showed that out of the 4,019 implants, 371 failed for some reason and had to be revised. Any time the implant was removed or exchanged (old parts removed, new parts installed), it was considered a revision procedure. The reasons implants fail were due to infection, malposition, fracture, or loosening of any of the component parts.

Revisions were most common in the cemented composite-beam stem implants. The long-term results (after 15 years) were better for cementless and cemented loaded-taper stems compared with the composite-beam design. In general, the cementless implants held up better for this particular group of patients.

Patients with rheumatoid arthritis who have a hip replacement have some unusual factors that can affect outcomes. Pain, inactivity, bone loss, and the long-term use of medications with side effects may contribute to problems even after hip replacement designed to reduce pain and improve motion, activity, and function.

Other changes in hip joint replacements that might influence results include the development of a plastic liner inside the cup (socket) part of the implant, new and improved cement and cementing techniques, and new drugs to treat rheumatoid arthritis.

The authors concluded that cementless hip implants work well for older patients with rheumatoid arthritis who are having a hip replacement. If anything, the liners were really the cause of many problems, not the issue of cement vs. cementless stems and cups. The poor results associated with composite-beam stems bears further study. The increased use of cementless cups will also be reviewed more closely.

Reference: Keijo T. Mäkelä, MD, PhD, et al. Cemented Versus Cementless Total Hip Replacements in...