Why some hips squeak

By Maureen Leahy

In recent years, incidents of squeaking have been reported in patients with total hip arthroplasties (THA) using hard-on-hard (metal-on-metal or ceramic-on-ceramic) bearings. Although the phenomenon is not fully understood, the reasons for squeaking include implant-, patient-, and surgery-related factors.

“A Review of Squeaking Hips,” in the June issue of the Journal of the AAOS (JAAOS), explores the factors that contribute to squeaking and the implications for patients. AAOS Now interviewed principal author William L. Walter, MBBS, FRACS, PhD, about the phenomenon.

AAOS Now: What factors contribute to squeaking hips?

Dr. Walter: Squeaking occurs in ceramic-on-ceramic (COC) and metal-on-metal (MOM) bearings, not usually with polyethylene bearings. There seems to be an increased incidence of squeaking with some particular devices, although good quality comparative data are not available and other factors may confound this observation. Stems with narrow anteroposterior (AP) dimension may be more likely to squeak due to increased flexibility in the AP direction.

Patient factors related to squeaking in COC bearings include age, weight, height, and range of motion. Squeaking has been found to be more common in patients who are younger, heavier, taller, and who have a greater range of motion. These factors indicate greater mechanical demands on the bearing.

Some studies have found that acetabular component orientation and the degree of anteverision are associated with squeaking hips, but this is not a consistent finding. Other studies have found an association between a higher incidence of squeaking and a short femoral neck length and between squeaking and reduced offset.

AAOS Now: In your opinion, do squeaking hips indicate a real problem with the implant or technique, or are they merely an inconvenience?

Dr. Walter: Because the causes of squeaking hips are multifactorial, squeaking cannot be blamed universally on a single cause. A single cause might be identified in specific cases, but this is unusual. Squeaking does not indicate impending failure of the implant and does not necessarily mandate revision surgery, unless the noise itself warrants revision or other troublesome symptoms such as pain are present.

Whether squeaking is a ‘real problem’ or just an ‘inconvenience’ depends on the noise. If the hip makes a loud noise with every step, it is a real problem; if the hip only makes a subtle noise once a month when the patient is cutting his or her toenails, it is an inconvenience.

AAOS Now: How often do squeaking hips lead to revision surgeries?

Dr. Walter: In our experience, squeaking very rarely leads to revision. In our series of nearly 4,000 hips with COC bearings starting in 1997, only two have been revised for squeaking. Although 70 patients reported squeaking, most instances are benign—infrquent and only with a specific activity. In fact, these patients show no increased rate of dissatisfaction with their surgery and tend to have slightly better function than patients with silent hips.

AAOS Now: What should a patient who complains about a squeaking hip be told? How should the surgeon reassure the patient?

Dr. Walter: If the patient has a COC hip, the surgeon should first request a radiograph or, better still, a computed tomography (CT) scan, to exclude the possibility of ceramic breakage (Fig. 1). Although it is extremely rare, ceramic breakage can cause squeaking.

The surgeon should also advise the patient that retrieved ceramic squeaking hip bearings have been shown to have 30 times more wear than silent ceramic bearings but that this wear is still low enough that it should not cause a problem. Ceramic bearings have the lowest wear of any bearing material, and they have virtually eliminated osteolysis, which is the most common reason for revision of hip replacements.

If the squeak occurs with bending (Fig. 2), the patient can be shown how to bend to avoid making the noise (knees turned out, affected leg back). More regular follow-up is also advised.

Dr. Walter reports the following disclosures: Stryker; DePuy; Finsbury; Ceram Tec; Global Orthopaedics

A link to the JAAOS article is available in the online version of this article, at www.aaosnow.org

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Fig. 1 Algorithm for management of squeaking ceramic-on-ceramic hip arthroplasty.