“Shocking” incidence of dental pathology found in TJA patients

By Jennie McKee

Preoperative dental screening and treatment may help avoid periprosthetic joint infection

“Bacteremia associated with dental pathology is a rare but serious causative agent of infections in total joint arthroplasty (TJA) patients,” said John W. Barrington, MD. “Deep infections often necessitate additional care and extensive revision procedures that can cost approximately three to four times more than primary TJA.”

Although some orthopaedists screen patients for dental pathology before scheduling their TJA, little is known about the incidence of dental pathology among TJA patients. Dr. Barrington’s longitudinal, population-based study identified a “shockingly high number” of patients as having dental pathology that required treatment before TJA could be performed to reduce the risk of postoperative joint infection.

No patients in the study developed acute postoperative infections, which Dr. Barrington attributes in part to a preoperative pathway that included dental screening and treatment. He presented the results of the study at the 2010 annual meeting of the American Association of Hip and Knee Surgeons.

Analyzing TJA patients

The Institutional Review Board-approved study included 100 consecutive patients (54 females and 46 males; average age, 64 years) from Dr. Barrington’s dedicated arthroplasty practice who underwent TJA between September 2009 and December 2009. Of the 100 patients, 75 underwent primary TJA, including:

• 10 unicompartmental knee arthroplasties
• 34 total knee arthroplasties (TKAs)
• 31 total hip arthroplasties (THAs)

The remaining 25 patients underwent TJA revision procedures, including 10 revision TKAs and 15 revision THAs.

“Each of these patients was required to obtain dental clearance as part of their preoperative pathway,” he explained. “At the time of the last preoperative visit before surgery, we documented the incidence of dental pathology, the type of pathology, and any treatment that was performed,” he explained.

Evaluating dental pathology

Dr. Barrington reported that 23 of the 100 patients had active, untreated dental pathology that ranged from carious lesions (dental cavities) to severe periodontitis. “To break this down further, in the 23 patients who had active dental pathology, 66 procedures were needed,” he said (Fig. 1). “Patients who needed dental treatment had an average of three teeth that required treatment.”

Dr. Barrington asserted that “by utilizing dental clearance as part of a preoperative pathway, we saw no acute TJA infections.”

He pointed out that dental pathology is common in the general population of adults in the United States, according to National Health and Nutrition Examination Survey (NHANES) II and NHANES III data collected by the National Bureau of Economic Research.

“According to these data, an average of 17 adult teeth are missing, decayed, or previously filled in people older than age 65,” he said. “Dental pathology is even more common in those who live in skilled nursing facilities.

“It is also more prevalent in those with chronic diseases such as rheumatoid arthritis and diabetes mellitus,” he said. “A common pathway may be advance age and decreased salivary production.”

Dr. Barrington recommends that all orthopaedic surgeons make screening for dental pathology part of their preoperative pathway, which he believes will help reduce the incidence of postoperative infections.

“My hope,” he said, “is that this study can help orthopaedic surgeons understand the scope of dental disease in the TJA population.”

Bottom Line:

• Bacteremia associated with dental pathology can lead to postoperative joint infection in TJA patients, often necessitating additional care and extensive, costly revision procedures.
• In this longitudinal, population-based study, preoperative dental screening identified dental pathology in 23 of 100 patients. All patients with dental pathology received dental treatment and obtained clearance from a dentist before undergoing TJA. No patients in the study developed acute periprosthetic joint infections.
• Preoperative dental screening and clearance from a dentist as part of the preoperative pathway for TJA may reduce the risk of infection.

Disclosure information:
Dr. John Barrington—Biomet; Dr. Thomas Barrington—no conflicts.

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