When discussing total hip arthroplasty (THA), the topic of osteoporosis should be included. Although unusual, associated questions have been posed to those who receive such consultation queries and provide advice on difficult cases.

Going beyond personal opinions, it is logical to search the peer-reviewed literature. This source, however, provides no information on the topic. A multitude of osteoporosis citations exist regarding subcapital hip fractures and femoral head arthroplasty; however, nothing specific is found regarding osteoporosis and THA.

SURVEY

Rather than present a single experience, 25 of the best known senior hip arthroplasty surgeons in the United States were polled. The following orthopedic surgeons were consulted: H. Amstutz, B. Bierbaum, L. Borden, W. Capello, D. Collis, H. Dunn, C. Engh, W. Harris, A. Hedley, D. Hungerford, C. James, R. Johnston, K. Keggi, T. Mallory, J. Moreland, B. Morrey, W. Murray, C. Ranawat, C. Rorabeck, R. Rothman, M. Ritter, E. Salvati, T. Sculco, L. Whiteside, and J. Wiedel. Twenty-four of 25 responded with essentially total completion. The non-respondent was temporarily unreachable.

RESULTS

The polled group had 25-year terms in THA, which yielded a combined experience of approximately 75,000 cases.

Only 2 of 24 respondents declined THA principally because of severe osteoporosis. Both respondents performed a high percentage of uncemented THA in their practices. One performed the uncemented technique exclusively, the other, most of the time.

Regarding concerns in performing and planning such cases, 18 of 24 had none. Some responders mentioned concerns for the propriety of either cementation (n=2) or uncemented fixation (n=4), concerns for general strength of the femur (n=4) and acetabulum (n=2), and achieving good cementation (n=1). Other concerns included intraoperative fracture and general risks with renal dialysis patients.

Specific diagnoses cited as likely to present with osteoporosis included rheumatoid arthritis, renal failure/renal dialysis, and post-irradiation states. These replies were from the same surgeons generating the reply in the above paragraph.

The relationship, if any, between osteoporosis once operated on and later failure of an arthroplasty was questioned. Opinions on this point were split. Fourteen of 24 said no, and 10 of 24 said yes. As individuals, the percentages ranged from 1%-60%, ie, 1 person with 6 of 10 profoundly osteoporotic candidates who had revision issues that were believed to be directly associated with osteoporosis.

In an effort to check for published material, respondents were questioned on this point. Twenty-three of 24 responded in the negative. The one who responded in the positive forwarded his reply with six references, all of which were related to fracture arthroplasty only.

The point of cementation...
was indeterminate, despite the large number of responses. Surgeons replied on both sides of the issue individually.

Inquiry on planning suggestions yielded a small number of responses: 4 suggested endocrinologic work-up, 3 a “general” work-up, 3 preliminary treatment, and 1 a general delay.

Actual prosthesis use was more consistent than the advice-laden replies. The majority used the standard hybrid combination. Additional comments included some emphasis on using acetabular fixation screws (n=3), impaction grafting of the femur (n=2), and avoiding standard uncemented technique in patulous diaphyses, >15 mm. Additional concern existed regarding the acetabulum as one respondent practiced reverse hybrid preparation-uncemented acetabular placement and use of a cemented femur. Two surgeons, who generally use a press-fit prosthesis, specifically changed to cemented acetabular reconstruction.

Other suggestions in planning and technique included:
- Use of relatively doughy cement.
- Use of a broach only, rather than any power reaming.
- Particularly careful acetabular reaming.
- Extra care in aspiration and irrigation of medullary bone with regard to preventing fat embolism syndrome.
- Having fixation cables ready.
- Performing generous capsular release.
- Specifically warning the surgical team to appreciate the fragility of the situation, including patient transfer and specific movements during surgery.
- Cable application before broaching.
- Particular awareness of and protection against trochanteric avulsion.

Definite lessons learned from personal experience of the responders included:
- Acetabular and femoral fractures.
- General difficulties from inadequate exposure.
- Avoidance of minimal incision surgery.
- Femoral perforation associated with bowing.

Additional suggestion:
- Patient use of assistive devices for remainder of life.

DISCUSSION

In the hierarchy of public information quality, this report is the lowest. It is a combination of general impressions sprinkled with isolated case-specific occurrences. Restated, the data do not show that the solely opinion-based statements are well founded. However, if an experienced THA surgeon was consulted, these views and suggestions would be offered.

Osteoporosis may not be an unsolved problem; however, it seems to be an issue. Instances of taste and theorizing are apparent in the respondents’ comments. In addition, isolated suggestions may be helpful to the less experienced. Even the more experienced surgeon may be reminded to plan for certain problems, which otherwise could be forgotten.