cromovement would be possible and failure in the form of fracture of the stem might occur, particularly if the implant was well fixed distally. If movement is allowed to persist, eventually osteolysis will occur, further compounding the micromotion. Eventually osteolysis can undermine a previously well-fixed implant.

Prosthesis fracture at the point where the distal stem was well fixed and the proximal stem unsupported was common with the early Charnley prostheses.[7] Prosthesis modification and the introduction of Orthron 90 (DePuy, Warsaw, Ind.) have eliminated this mode of failure for the Charnley prosthesis.

In our case the implant used was titanium. From an early stage a radiolucent line was seen between the prosthesis and the cement in zones 1 and 7. This gap on supine x-ray films may have been due to bending of the prosthesis, flow in the cement or tapping of wear debris pumped into the gap during cyclical loading (Fig. 8). Cyclical bending of the prosthesis obviously occurred, as evidenced by the burnishing of the prosthesis on either side of the ultimate prosthetic fracture. Cyclical bending of a distally fixed prosthesis, resulted in fatigue failure as the degree of deflection was above the fatigue threshold. Given that the prosthesis in question was a relatively small cross-section, along with the lower Young's modulus of titanium, the degree of bending expected would be greater than that of a bulkier prosthesis made from a stainless steel alloy.

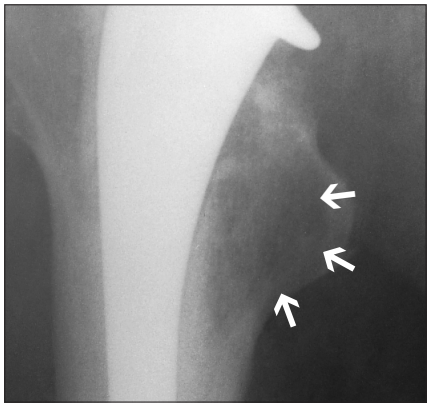

FIG. 8. Radiograph showing wear debris.

The advantage of titanium in joint replacement lies in its ability to osseointegrate. Titanium is no longer recommended for the bearing surface in joint replacements, and its role in cemented joint replacement may also be in question. Although a cemented titanium femoral stem is no longer recommended, it is important to point out the importance of maintaining an adequate cement mantle in Gruen zones 1 and 7 as failure to do so may result in micromotion and subsequent stem fracture irrespective of the metal used.

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Books and Other Media Received

Livres et autres documents reçus

This list is an acknowledgement of books and other media received. It does not preclude review at a later date.

Cette liste énumère les livres et autres documents reçus. Elle n'en exclut pas la critique à une date ultérieure.

Atlas of Breast Disease Management. 50 Illustrative Cases. A.J. Evans, A.R.M. Wilson, R.W. Blamey, J.F.R. Robertson, I.O. Ellis and C.W. Elston (The Breast Unit, Nottingham City Hospital, Nottingham, UK). 146 pp. W.B. Saunders Company Ltd., London, UK; Harcourt Brace & Co. Canada Ltd., Toronto. 1998. Can$130. ISBN 0-7020-2252-7

Stents in Endovascular Surgery. Basic Concepts and Techniques. Frank J. Criado. 124 pp. Illust. Futura Publishing Company Inc., Armonk, NY. 1996. US$49.