

Correspondence

Role of granulomas in prosthetic loosening

To the Editor:

Reigstad and Røkkum (6) recently reported an intrapelvic granuloma induced by loosening of a Christiansen acetabular component and suggested that the foreign body reaction against wear products was the cause. The large intrapelvic granuloma was detected in 1990. However, the hip was painful very soon after the first revision 1984.

Recent research indicates that loosening is a result of an early prosthetic instability (5). In case of loosening, joint fluid (and wear debris) may be pumped with high pressure into the interface by prosthetic micro-movements (1), i.e., a loose prosthetic component does not only cause bone resorption, but also transportation of wear particles (cement, polyethylene, metal) into the loose interface, where they can be found prior to major radiographic changes. In course of time the bone resorption may grow locally as a response to the pressure waves interfering with the perfusion and oxygenation of the bone. Thus, the wear particles in the granulomatous lesions adjacent to loose prosthetic components may be rather innocuous passengers (2, 4). Further, the more frequent failure of the polyacetal compared with the polyethylene acetabular component is better explained by the higher frictional torque than by a more severe foreign body reaction (3).

To the Editor:

In our case report we suggested that foreign body reaction against wear products caused the large intrapelvic granuloma. In his letter Mjöberg describes interesting theories of prosthetic loosening. These theories, however, do not explain the origin of the granuloma. Moreover, whatever the exact mechanism of the preceding prosthetic loosening might be, this is considered being of minor importance related to the granuloma formation. Consequently, in our paper the cause of prosthetic loosening was not discussed. On the other hand, the loose prosthesis probably accelerated the granulomatous process by increasing the production of wear debris and destroying the bony barrier against the granuloma.

References

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In our opinion the demonstration of inferior wearing properties of polyacetal and severe foreign body reaction around polyacetal components, comprise strong evidence for this to be the main explanation of the granuloma formation. Hence, rather than being innocuous passengers, polyacetal wear particles may cause substantial clinical problems.

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