



Forearm pain associated with loose radial head prostheses

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Background: After post-traumatic radial head replacement, pain caused by a loose prosthesis might incorrectly be assumed to be post-traumatic. Reliable guidelines for diagnosing a symptomatic loose radial head prosthesis are lacking. We noted that pain from a loose stem within the proximal radius may present as proximal radial forearm pain.

Methods: The medical records and radiographs of 14 consecutive cases (13 patients) with proximal radial forearm pain associated with a loose radial head prosthesis were reviewed retrospectively. The indication for revision surgery was painful loosening of the prosthesis within the canal of the proximal radius in 7 patients (8 cases) and pain without preoperative confirmation of the loosening in 2 patients (2 cases). Various prosthetic designs had been used in the primary operations.

Results: In 12 of 14 cases, the loosening was evident radiographically, but in 2 the only indication of a loose prosthesis (confirmed surgically) was proximal radial forearm pain. One patient was lost to follow-up. Revision or prosthetic removal eliminated the pain in 7 of 9 cases and decreased it in 1. One patient with moderate pain had an arthritic elbow and had no significant lasting relief from surgery. Follow-up averaged 27 months.

Conclusion: The presence of proximal radial forearm pain in a patient with a radial head prosthesis is an indicator of symptomatic mechanical loosening. If the prosthesis has a textured surface for bone ingrowth, and was inserted without cement, we now consider this a strong indicator of loosening, even in the absence of radiographic signs.

Level of evidence: Level IV, Case Series, Treatment Study.

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With the advent of multiple options for prosthetic replacement of the radial head in recent years, it is necessary to develop tools for evaluating their clinical success. In

particular, many of the patients for whom a radial head replacement is indicated have, or have had in the past, pain in the region of the elbow that could be due to various etiologies. Because there are no published reports of large series of radial head replacement with long-term follow-up, and little has been written about failure of radial heads and revision surgery for symptomatically loose radial head prostheses, we lack reliable guidelines for diagnosing a loose radial head prosthesis that is symptomatic.

Early experience with uncemented femoral stems in total hip arthroplasty was associated with a significant incidence

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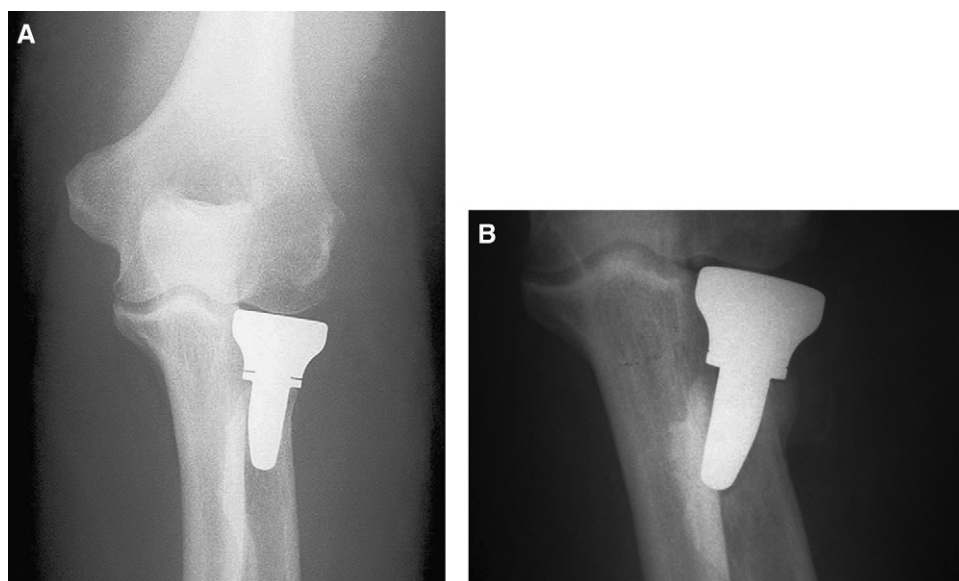


Figure 1 Radiographs of a 57-year-old man in whom proximal radial forearm pain developed from a loose radial head prosthesis. (A) Early postoperative radiograph showing Avanta rHead. (B) Radiograph taken 7 months postoperatively showing angular displacement of stem, bony reaction under the collar, and a lucent zone around the stem.

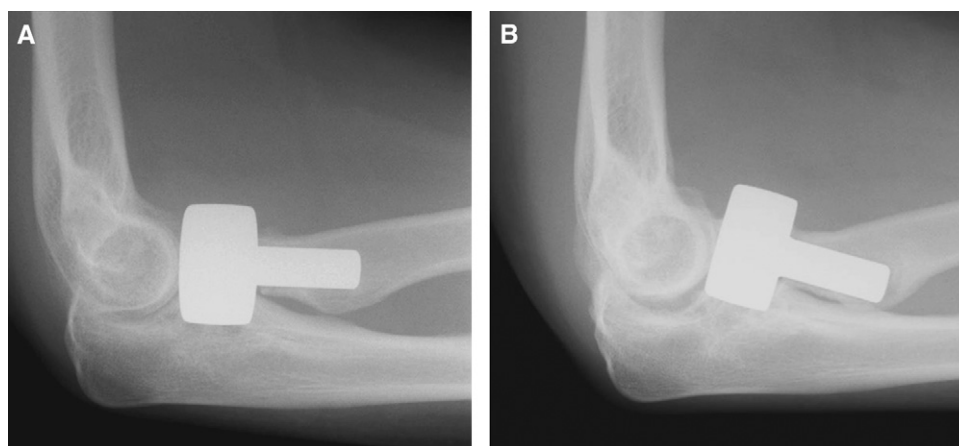


Figure 2 Forearm pain can also be seen with a smooth polished stem, as observed on these radiographs of a 24-year-old woman with progressive loosening and instability of the prosthesis within the canal. (A) Early postoperative radiograph showing a well-aligned uncemented Evolve prosthesis. (B) Radiograph taken 33 months postoperatively showing lucency and tilting of the prosthesis.

of thigh pain. In many cases, the etiology remained obscure because radiographs failed in many cases to show any evidence of loosening.^{1-4,6} Over time as experience accumulated, thigh pain became recognized as originating from the bone-prosthesis interface in the femoral canal, as opposed to originating from the acetabulum or hip joint itself.

We have recognized a similar phenomenon with radial head prostheses. Pain from a loose stem within the proximal radius may present as proximal radial forearm pain. The purpose of this report is to document this observation in a series of patients treated for symptomatic loosening of a radial head prosthesis and to offer suggestions as to

potential implications of the design and methods for implantation of radial head prostheses.

Materials and methods

From August 1999 to December 2006, 9 consecutive patients (10 cases) required revision surgery for painful aseptic loosening of a primary metal prosthetic radial head implant. One of the nine patients required re-revision with a longer stem. A further 4 patients with symptomatic aseptic loosening declined revision surgery. The indication for revision surgery was painful loosening of the

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