Critical analysis of a case series after arthroplasty with the free interposition pyrocarbon implant, Amandys®

L. Estermann, E. S. Bodmer, M. Marks, D. B. Herren
Schultess Klinik, Zürich, Switzerland

Background / Study Goal
The Amandys® implant is an interpositional pyrocarbon implant for wrist arthroplasty (Fig. 1). For patients with well-aligned wrists and competent capsuloligamentous structures, this implant offers a good alternative to more invasive procedures involving a total wrist prosthesis or total fusion. We mainly used Amandys® for revision surgery after failed wrist procedures but noted complications, which led to further revision surgery. The objective of this analysis was to investigate possible factors explaining the problems we encountered with this implant.

Material & Methods
This retrospective analysis focused on five consecutive patients who underwent wrist interposition arthroplasty with the Amandys® implant (i.e. index revision surgery). The indication for this procedure was persisting wrist pain after proximal row carpectomy (PRC) in three patients, scapholunate advance collapse (SLAC Stage III) in one patient, and Kienböck’s disease (Stage IIIb) in the last patient. All patients underwent clinical and radiographic examinations to determine total range of motion, improvement in the level of pain and carpal bone alignment after 6 weeks, 3, 6 and 12 months postsurgery.

Results
Due to persisting postoperative wrist pain in two patients, we had to remove the Amandys® implant and perform wrist fusion after 12 and 23 months, respectively (Tab. 1). These patients had undergone PRC prior to the index revision surgery. Of these two patients, one required an additional intervention before the wrist fusion to excise the proximal part of the hamate bone due to osseous impingement (as detected by SPECT/CT scan, Fig. 2).

Discussion / Conclusion
Based on our small patient series, we could not confirm the promising results from previously published studies. Our failure rate after interposition arthroplasty with the Amandys® implant is high, particularly for PRC patients. We hypothesize that PRC, in conjunction with a certain degree of intrinsic ligament destabilization, may primarily lead to proximalization of the hamate. This process could provoke an impingement with the implant, resulting in subsequent pain and failure of this procedure. In cases of obvious distal carpal row instability, additional stabilization may therefore be considered. More patients are needed to find the optimum indication for this implant, and we encourage further reports on this issue.

References

Contact
Dr. med. L. Estermann
Schultess Klinik, Lengghalde 2, 8008 Zürich
E-Mail: lea.estermann@kws.ch