Orthopaedic Metal Implants and Contact Allergy

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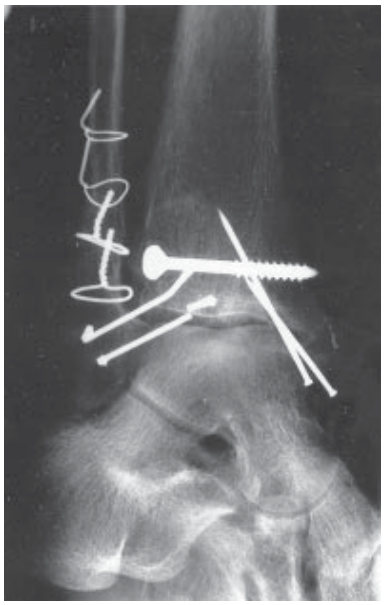
The Swedish Contact Dermatitis Research Group (Chairman: Magnus Lindberg, Stockholm) is a working group and subdivision of the Swedish Society for Dermatology and Venereology. The group has understood that many colleagues, dermatologists not the least, are often questioned about the risk, with regard to contact allergy, of inserting a metallic implant during orthopaedic surgery. The group has decided upon the following guidelines to be used as support in answering questions on this subject.

A worryingly high frequency of contact allergy to chromium, nickel and cobalt was earlier reported in patients following hip arthroplasty and similar deep metal implantations. The allergic state may have been initiated by an increased friction in metal-to-metal arthroplasties. It was speculated that a contact allergy, acquired in connection with the operation or previously established, might play a causative role in orthopaedic complications, such as loosening or infection.

From this period, the 1960s and 70s, there are no controlled studies on the subject. Later on, such studies were carried out but they have not been able to demonstrate an induction of contact allergy due to metal-to-plastic implants (1, 2). Instead, the presence of metal allergy seems to be an expression of the allergic state in the general population. There is even a study on hip arthroplasties with metals to which the patients had a previous contact allergy, but with no observations of dermatologic or orthopaedic complications (3). With regard to an alternative material such as titanium, it is quite doubtful if on the whole a definite contact allergy has been ascertained (4).

Nevertheless, there are casuistic reports on eczematous reactions considered to be elicited by way of contact allergy towards metals implanted. In most cases, it has been the orthopaedic material of stainless steel or vitallium used for fixation of extremity fractures and thus deposited just beneath the skin (Fig. 1). However, in prospective (!) studies on patients operated in emergency situations for extremity fractures, no induction of contact allergy to metals or any eczematous reactions have been observed (5, 6).



Stainless steel or vitallium used for fixation of extremity fractures and deposited just beneath the skin

The conclusion is thus that contact allergy to metals used in modern orthopaedics does not imply a medical problem in arthroplasties and only exceptionally in extremity fractures.

References

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