Implant Removal After Fracture Healing

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Patients who continue to suffer inconvenience after a healed bone fracture may be better off having any plates, pins and screws removed. Scientific research headed by Dagmar Vos, who took her doctoral degree at University Medical Center (UMC) Utrecht on 17 September, demonstrates that most complaints and symptoms, such as pain and restricted motion, improve after removing these so-called osteosynthesis materials.

After a bone fracture has mended, metal implants such as pins, plates and screws (usually made from surgical steel or titanium) are in fact no longer useful. The question then arises: do these implants have to be removed from the bone after the fracture has healed or is it better to leave them in place? Such questions often come from patients or their caretakers, sometimes even before the patient has even had the bone fracture operation. In the medical world a debate is going on as well, not least because—surprisingly enough—little high-quality scientific research has been done in this field this until now.

In her doctoral research, Dagmar Vos studied the consequences of surgically removing implants in almost 300 patients from five Dutch hospitals (UMC Utrecht, Amphia Hospital in Breda, St. Elisabeth Hospital in Tilburg, Diakonessenhuis in Utrecht and Medisch Spectrum Twente in Enschede). The removal operations were usually successful, but were not completely free of risk. Complications such as haemorrhage, wound infections and sensory impairment in the operation section occurred in about 30 per cent of the operations.

In general, patients said that their expectations had been met after the operation, and reported a clear improvement in pre-surgical complaints. Almost all patients (over 95 per cent) say they would again opt to have the material removed in a similar case in the future.

Vos also researched the effect of removing implants in children. Here, 10 percent of implant removals resulted in complications, but these were generally mild and transitory. Nonetheless, she recommends removing the osteosynthesis materials in children, regardless of whether or not the child suffers from it. Vos explains: “With children, the discussion rather concerns the potential future problems and not necessarily any symptoms that might be present at that moment. Even though we have no reason to believe that plates, pins and screws are harmful in the long term, we still think that, in children, we should remove these materials as a precaution.”

After a bone fracture has mended, patients often experience residual complaints, such as pain or restricted mobility. Patients and practitioners often believe that the presence of osteosynthesis materials is to blame for these complaints. Patients also request to have these materials removed because they experience them as foreign. In the Netherlands, doctors remove the osteosynthesis materials after fracture

healing in 30 to 40 percent of the cases, resulting in about 18,000 surgical procedures each year.

Dagmar Vos (1965) took her doctoral degree at Utrecht University Medical Center on 17 September 2013. Prof. Dr Yolanda van der Graaf and Prof. Dr Chris van der Werken supervised the research, which was in part made possible by a subsidy from the AO Foundation in Switzerland. Dagmar Vos works as a (trauma)surgeon at Amphia Hospital in Breda.

Reference

Vos DI (2013). Implant removal after fracture healing – facts and fiction. Thesis, Utrecht University, Utrecht (the Netherlands)

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