Comment on: Shape memory Ni-Ti alloy swan-like bone connector for treatment of humeral shaft nonunion

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Dear Editor,

We read with interest the article on “Shape memory Ni-Ti alloy swan-like bone connector for treatment of humeral shaft nonunion” [1]. We would like to congratulate the authors for the original and outstanding work and would like to raise some queries.

How was the implant sterilised? Does routine autoclaving have any effect on the material properties of the implant?

In our experience, while reducing nonunions, the bone adjacent to the fracture is often denuded of soft tissues (as is also seen in Fig. 2e of this article [1]) and the radial nerve is at risk. The authors have themselves in another study reported neuropraxia in 4:105 cases operated with shape memory connector [2]. Moreover, the implant embraces the bone, and the radial nerve is further at risk. We would like to know how often the radial nerve was explored? A circumferentially placed implant is more likely to cause damage to vascularity.

How was the implant size to be placed decided? Were the patients given any postoperative supplementary stabilisation?

The authors state that implant removal was easy. If bone graft was placed around the implant, then at the time of removal, the implant should have been surrounded by bone, making the removal difficult.

Nitinol implants have been used in spine [3], non-cemented hip replacement, and in staples for osteosynthesis [4]. What is the authors view on use of these implants in femur and forearm nonunions? Do they suggest shape memory connectors (SMC) to treat fresh fractures?

Corrosion resistance properties of Ni-Ti shape memory alloys have been questioned [5] and their in vitro behavior studied [6]. The alloy has been stated to be comparable or inferior to steel. Biocompatibility needs to be time tested.

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