



Salvaging a stripped drive connection when removing screws

G. Pattison, J. Reynolds, J. Hardy*

Department of Orthopaedics, Southmead Hospital, Westbury on Trym, Bristol BS10 5NB, U.K.

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1. Introduction

Removing metalwork following fracture fixation is a common operation with a high complication rate [1, 2]. The quick and easy removal of screws and plates requires the localisation of the screw head and the firm seating of the screwdriver. The drive connection is most commonly a hexagonal recess.

The stripping of the drive connection, so that the recess becomes circular, is a common and frustrating intra-operative complication. Overtightening at the time of screw insertion as well as when attempting to remove stubborn screws may damage a drive connection. This usually means that the screw head has to be drilled off and the screw shaft overdrilled (often throughout its entire length) to facilitate screw removal. The operation is prolonged, wound infection becomes more likely, the bone is weakened and the wound may become contaminated with metal swarf or the implant cannot be removed.

The interposition of the foil from a suture packet between the screwdriver and the drive connection enhances the stability of the connection between the screwdriver and the screw. This often enables removal of a screw not previously removable with a screwdriver alone.

2. Technique

The screw heads should be identified, using image intensification if necessary and the drive connection cleared of soft tissue using curved artery forceps. The

drive connection should be carefully inspected for damage.

The screwdriver should be placed in the drive connection of the screw taking care that the long axis of the screwdriver is in the same axis as the screw. The screw should be initially tightened and then unscrewed. If the screwdriver does not feel secure in the drive connection, or the screwdriver slips it should be immediately removed. The foil from a suture packet can then be moulded over the end of the screwdriver. When replaced the screwdriver has a tighter fit thus facilitating screw removal (Fig. 1).

If the screwdriver slips, even on only one occasion, this foil wrap technique should be employed immediately. After three or four attempts without the foil the loss of drive connection may not be remediable even with this technique.

3. Conclusion

The stripping of the drive connection when removing screws is an important complication to avoid. The foil wrap method may prevent this and, as such, is a useful additional technique for the trauma surgeon.

References

- [1] Sanderson PL, Ryan W, Turner PG. Complications of metalwork removal. *Injury* 1992;23(1):29-30.
- [2] Langkamer VG, Ackroyd CE. Removal of forearm plates, a review of the complications. *J. Bone Joint Surg. [Br]* 1990;72-B:601-4.

* Corresponding author. Tel.: 0117 959 5198; fax: 0017 959 5924; E-mail: John.Hardy@bristol.ac.uk.

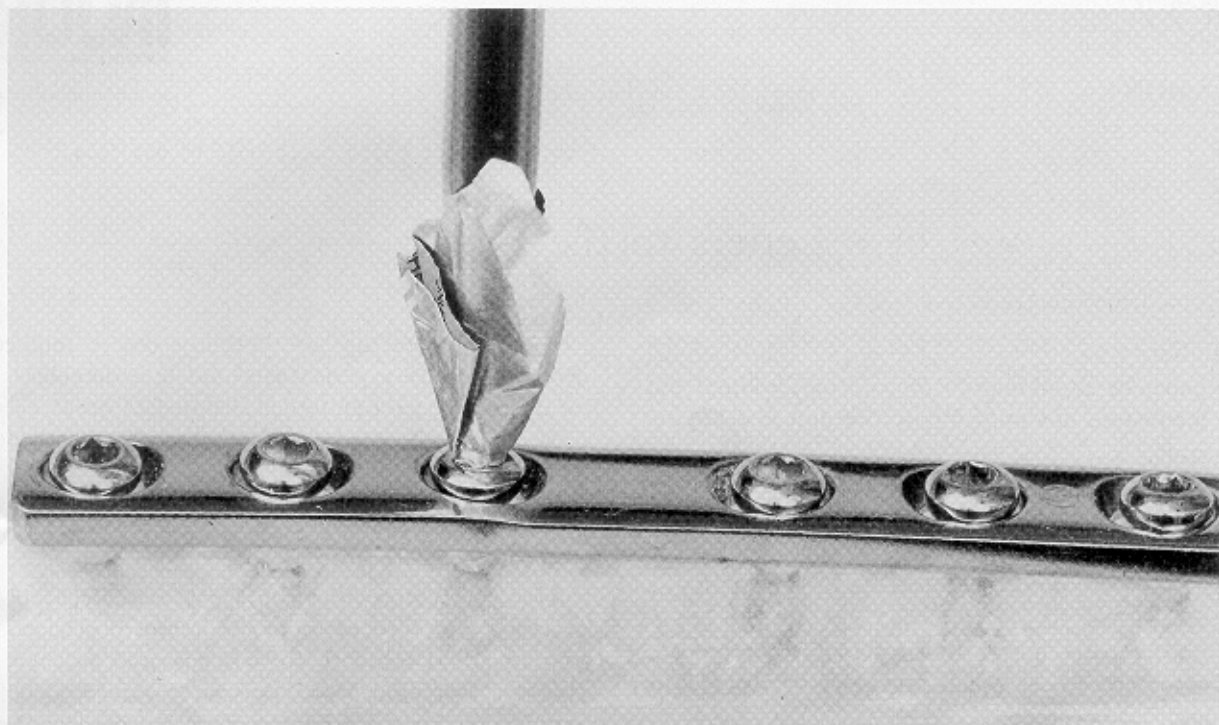


Fig. 1. The foil from a suture is interposed between the screwdriver and the drive connection of the screw.