Removal of screws with damaged heads—A technical tip

Aneel Ansari*, Roy Twyman

Department of Orthopaedic Surgery, Epsom General Hospital, Dorking Road, Epsom, Surrey, KT18 7EG, United Kingdom

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Introduction

Although many trainees feel that removal of metal work is a simple operation, experience soon teaches them to offer this procedure more respect. Removal of a bone screw can change from being easy to impossible if the head is damaged. The screwdriver is unable to grip the screw no matter how much force is applied. Although the surgeon can then turn to the use of a high-speed drill and carbide-point drill-bit to assist removal,* but this is not an easy process. We report a simple technique that utilises an AO locking plate star shaped screwdriver to assist with removal of damaged hexagonal head screws.

Technique

In our experience we have found that an AO locking plate star shaped screwdriver (Fig. 1) can allow much easier removal of screws with damaged hexagonal heads. The screwdriver tip is placed in the centre of the damaged head and a mallet is used to impact the screwdriver in a controlled fashion (Fig. 2). This results in the formation of a new star shaped head corre-

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* Corresponding author at: 42 Falmouth House, Royal Quarter, Seven Kings Way, Kingston, Surrey, KT2 5AH, United Kingdom.

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sponding to the screwdriver. The screw can then be removed by normal means using the screwdriver.

Discussion

Although the hexagonal head of bone screws should allow controlled insertion and removal of screws, studies have confirmed that slippage between screwdriver and bone screw can occur at low levels of torque.¹ Slippage of the screwdriver is probably the commonest cause of damage to the screw head. Once this damage has occurred, the screwdriver cannot obtain grip within the screw head resulting in it twisting freely. Many different techniques have been described to assist in removal of the screw once the head has been damaged. Although some of these techniques are relatively simple, such as wrapping a swab or suture packing foil around the screwdriver head to create an interference fit,² ³ they are not always successful resulting in the need for more specialised equipment such as the AO broken-screw removal kit or high-speed drill and carbide-point drill-bit.⁴ We have reported a simple technique to assist in removal of these screws with damaged heads. The only equipment that is required for the procedure is an AO locking plate star shaped screwdriver and in our experience it has been successful at removing these screws with ease. Although the screwdriver tip did not sustain any damage in the process, one must be aware of this possible complication.

References


Tel.: +44 7956 957814.

E-mail address: a.ansari@doctors.net.uk (A. Ansari).