

Percutaneous Retrieval of a Cannulated Screw with a Fish-Hooked K-wire in Slipped Capital Femoral Epiphysis

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Abstract : There is still controversy surrounding the routine removal of a cannulated screw after treatment of a slipped capital femoral epiphysis. Removal may be a problem when needed either due to parental concern over implant retention or due to symptoms after physeal closure. We have devised a fish-hooked K-wire to help remove the cannulated screw in the same small incision as in its percutaneous insertion.

Introduction

There is still controversy surrounding the routine removal of a cannulated screw after treatment of a slipped capital femoral epiphysis. Removal may be a problem when needed either due to parental concern over implant retention or due to symptoms after physeal closure. The frequently encountered problem is dislodgement of the screw in the middle of thick soft tissue after the screw moves from the femoral neck bone bed (1-4). We have devised a fish-hooked K-wire to help remove the cannulated screw through a small incision at the same site as the percutaneous insertion.

Surgical technique

The surgical situation for percutaneous remov-

Fig. 1.

The patient is supine on the table. The skin incision is determined using a guide wire aligned with the screw under fluoroscopic observation in both anteroposterior view and lateromedial view.



al of a screw is the same as for its insertion (Fig. 1) ; A guide wire is inserted into the cannulated screw under fluoroscopic observation through a small skin incision (Fig. 2). Insert the screwdriver onto the screw through the guide wire (Fig. 3). Unscrew the cannulated screw halfway out from the femoral neck bone bed. Remove the guide

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Fig. 2.

A guide wire is inserted into the cannulated screw under fluoroscopic observation.



Fig. 3.

Insert the screwdriver onto the screw over the guide wire. Unscrew the cannulated screw half way out from the bone



Fig. 4.

Bend the first 3 mm of the tip of a 1.0 mm K-wire into a fish-hook with the width about the size of the cannula



Fig. 5.

Change the guide wire for the fish-hooked K-wire, through the screwdriver and the screw



Fig. 6.

Clamp the tail of the F-H K-wire with a large needle holder or a vise



Fig. 7.

The screw can be unscrewed out from the bone with the screwdriver and out from the soft tissue with the fish-hooked K-wire.

wire. Bend the first 3 mm of the tip of a 1.0 mm Kirschner wire (K-wire) into a fish-hook shape with the width about the size of the cannula (Fig.4). Insert the fish-hooked (F-H) K-wire through the screwdriver and the screw (Fig. 5). Then, withdraw the F-H K-wire till hooked on the tip of the screw thread. Also, clamp the tail of F-H K-wire with a large needle holder or a vise (Fig. 6). The screw can then be unscrewed out from the bone using the screwdriver and out from the soft tissue with the F-H K-wire (Fig. 7).

No disengagement occurs using this technique, and a big surgical incision is avoided to remove a trapped screw from the thick soft tissue.

Discussion

The controversy surrounding removal of a cannulated screw after treatment of a slipped capital femoral epiphysis may be associated with the high frequency of complication, especially in patients with a slipped capital femoral epiphysis. We have devised this new technique because we

have often encountered disengagement of the screw and its entrapment in the thick soft tissue after unscrewing from the femoral neck bone bed. In those cases, had to retrieve the screw through a large incision. With this new technique using a fish-hook K-wire, the screw could be safely removed through a short skin incision.

Conclusion

We can safely remove a cannulated screw through a small incision percutaneously with the aid of this F-H K-wire.

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