The use of wedges for improving visualisation of the joint space in wrist radiographs

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BACKGROUND

With the increased use of dorsal distal radial plate and screw fixation for distal radial fractures, there is a need for improved accuracy in imaging the wrist joint. The concern with plate fixation is a screw penetrating the joint space. Postero-anterior and lateral radiographs are currently performed after internal plate fixation; if screw penetration of the joint space is suspected, the patient is referred for a CT scan. To avoid further radiation exposure and possibly even unnecessary surgery, the original radiograph must be as accurate as possible.

The articular surface of the radius at the wrist joint has a palmar tilt ranging from 3–20%;¹ this is not accounted for in standard radiographs. Cadaveric studies² suggest that performing anatomical tilt radiographs on the wrist following radial plate and screw insertion shows an increased accuracy of evaluating screw penetration of the wrist joint of 0.93 versus 0.64 for standard radiographs.

TECHNIQUE

In Stepping Hill Hospital, Stockport, this issue has been addressed with the introduction of two wrist wedges for use in wrist radiographs. An 11-degree wedge is used for postero-anterior wrist radiographs (Fig. 1) and a 22-degree wedge for lateral wrist radiographs (Fig. 2).

Figure 1 Position of the forearm and hand for a PA wrist radiograph using a foam wedge to create an 11-degree angle.

Figure 2 Position of the forearm and hand for a lateral wrist radiograph using a foam wedge to create a 22-degree angle.

DISCUSSION

The use of these wedges gives a clearer view of the wrist joint increasing accuracy and reducing the use of unnecessary CT scans from unclear or false positive radiograph images. Stepping Hill Hospital is now using the wrist wedges for all wrist radiographs due to the superior field it provides in analysis of the joint space and carpal bones.

REFERENCES

1. Mann FA, Kang SW, Gilula LA. Normal palmar tilt: is dorsal tilting really normal? *J Hand Surg* 1992; **17**: 315–317.
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Laparoscopic stenting of the common bile duct

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BACKGROUND

Laparoscopic exploration of the common bile duct is a useful adjunct in the surgical management of common bile duct stones. If exploration is performed through a choledochotomy, placement of a biliary stent allows internal drainage of the biliary tree into the duodenum and facilitates primary closure of the common bile duct without the need for T-tube placement.¹

TECHNIQUE

A Terumo guide-wire is fed through the choledochotomy into the duodenum via the epigastric port using a cholangiogram clamp for directional control (Fig. 1). The guide-wire is held in place with a 5-mm grasper while the cholangiogram clamp is removed. A 4-cm, 7-Fr pigtail biliary stent is fed over the guide-wire and slid into place using a stent pusher while keeping the guide-wire under tension (Fig. 2). Correct stent place-

Figure 1 A Terumo guide-wire is fed through the choledochotomy into the duodenum.

Figure 2 The biliary stent is slid into place over the guide-wire using a pusher.

Figure 3 Correct stent placement is confirmed radiologically.

Figure 4 With the stent in place, the choledochotomy is closed primarily.

ment is checked radiologically before the guide-wire is removed (Fig. 3). The choledochotomy is then closed primarily with interrupted 3/0 pds sutures (Fig. 4). A small tube drain is placed in the subhepatic space and left for 24 h following surgery in case of bile seepage through the choledochotomy closure. The stent is removed endoscopically 8 weeks after surgery.

DISCUSSION

This safe and simple method of stenting the common bile duct allows primary closure of the choledochotomy after laparoscopic exploration avoiding the need for a T-tube. We have performed 24 cases in the last 8 years with no significant complications.

REFERENCE

1. Rhodes M, Nathanson L, O'Rourke N, Fielding G. Laparoscopic ante-grade biliary stenting. *Endoscopy* 1995; **27**: 676–678.

A low-cost, convenient model for the teaching of tendon repair

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BACKGROUND

Tendon repair is a core surgical skill. Its training is currently undertaken in animal specimens or artificial simulations but existing models are limited in terms of accessibility and the scope for feedback on the technique. The humble drinking straw has unique characteristics that meet these needs.

TECHNIQUE

Drinking straws are held at the ends by taping to a table top. Tendon repair is rehearsed using conventional instruments and sutures. Once complete, the straws are held up to the light or placed on a light-box for analysis (Fig. 1 shows a modified Kessler repair). Suture-placement can be clearly seen; furthermore, the marks made by toothed Adson forceps show clearly if the 'tendon' has been poorly handled. The strength of the repair can then be tested by pulling the straws apart.

DISCUSSION

Figure 1 A modified Kessler repair.