trapezium is removed with preservation of all the surrounding soft tissues. No bone is removed from the metacarpal base. A 3/0 polypropylene suture is passed percutaneously at the base of the trapeziectomy defect through the flexor carpi radialis tendon. The end of the suture is pulled out from within the cavity and this suture is passed through the tip of the capsular flap. The suture is tied, creating a capsular interpositional flap (Fig. 2). The radial capsule is plicated and the base of the flap is sutured to the divided joint capsule over the scaphoid (Fig. 3). The capsular repair interposes soft tissue, adducts the base of the first metacarpal and secures the base of the first metacarpal into the trapeziectomy defect.

DISCUSSION

This simplified method utilises excess joint capsule, which remains after removal of the trapezium. Further studies are needed to confirm the utility of this method in clinical practice. It is worth noting that the capsular flap steers the metacarpal base into adduction at the trapeziectomy defect. Local tissue is used for the soft tissue interposition and creates a secure capsular repair, which is necessary for a stable and pain-free result. The need to import tissue from elsewhere or use an artificial implant is avoided.

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A novel introducer for the Hardinge Cement Restrictor used in cemented total elbow arthroplasty

WJC THOMAS, DA WOODS

Department of Orthopaedic Surgery, Great Western Hospital, Swindon, UK

CORRESPONDENCE TO

WJC Thomas, Department of Orthopaedic Surgery, Great Western Hospital, Swindon SN3 6BB, UK
E: williamthomas@doctors.org.uk

BACKGROUND

Contemporary cementing techniques aim to improve cement penetration into bone, resulting in increased initial fixation strength, a more enduring micro-interlock fixation and reduced failure by aseptic loosening.¹ Intramedullary plugging is integral to this and in humeral preparation prevents cement migration towards the shoulder, which may hinder future surgery. Several humeral plugs

Figure 1 Hardinge Cement Restrictor on a 2-mm threaded guide wire.

Figure 2 Postoperative anteroposterior X-ray.

have been described.^{2–4} The humeral canal lumen is, however, narrowest distally and insertion of an introducer can compromise this canal. We believe that the Hardinge Cement Restrictor (DePuy UK, Leeds, UK) is in popular use but have found the bulky size of the Hardinge introducer problematic.

TECHNIQUE

We describe a technique of introducing the Hardinge Cement Restrictor into the humeral canal on a readily available and cheap 2.0-mm threaded guide wire. The flanges of the restrictor are trimmed to the appropriate size then threaded onto the guide wire producing a secure construct for insertion (Fig. 1). Once inserted at the correct level, the wire is unscrewed and removed, leaving the restrictor *in situ*.

DISCUSSION

The Hardinge Cement Restrictor is familiar to most orthopaedic surgeons and benefits from being on-hand in most orthopaedic units. However, the differences in humeral and femoral anatomy

make the use of the Hardinge introducer a threat to the integrity of the bone. The use of a 2.0-mm threaded guide wire produces a sound, safe and accessible construct for the insertion of the cement restrictor. In our experience, migration of the restrictor has not been observed. Figure 2 demonstrates the device's efficacy.

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The use of a mechanical lithotripsy device as an adjunct to common bile duct exploration

SM ROBINSON, A AL-MUKHTAR, M NAYAR, SA WHITE
Department of HPB and Transplant Surgery, Freeman Hospital, Newcastle upon Tyne, UK

CORRESPONDENCE TO

SM Robinson, Department of HPB and Transplant Surgery, Freeman Hospital, Heaton Road, Newcastle upon Tyne NE7 7DN, UK
E: sturobinson@doctors.org.uk

BACKGROUND

Laparoscopic common bile duct exploration is an accepted alternative to laparoscopic cholecystectomy with endoscopic retrograde cholangiopancreatography (ERCP) and is of particular use in those patients who are unable to undergo ERCP for whatever reason as an alternative to open surgery.^{1,2} Recent UK guidelines recommended laparoscopic common bile duct exploration as the treatment of choice for patients with common bile duct stones undergoing laparoscopic cholecystectomy.³ Commonly, stones are retrieved using a choledochoscope and Dormier basket technique; however, this technique can prove inadequate for management of particularly large stones impacted at the ampulla.

TECHNIQUE

Standard laparoscopic cholecystectomy with on-table cholangiogram via the cystic duct is performed. Where the on-table cholangiogram or pre-operative imaging suggests an impacted large stone, a longitudinal choledochotomy is made and the findings confirmed on choledochoscopy. Where it proves impossible to remove the stone with a Dormier basket, the stone can be

Figure 1 Demonstration of the set-up with the mechanical lithotripsy device inserted within the common bile duct alongside the choledochoscope.

Figure 2 Stone fragments being withdrawn using the Dormier basket.

crushed using a Lithocrush Mechanical Lithotripter (Olympus UK Ltd). Whilst it is not possible to pass this device down the 3-mm working channel of a choledochoscope, it can be inserted into the abdomen through a 5-mm port and then passed into the common bile duct through the choledochotomy alongside the choledochoscope (Fig. 1). The stone is then grasped with the lithotripter under direct vision and crushed into small fragments which can then be extracted with ease using the Dormier basket (Fig. 2). After confirming that the duct is clear, the choledochotomy is closed in a standard manner.

DISCUSSION

Our method for managing impacted large common bile duct stones with a mechanical lithotripsy device provides an acceptable alternative to open surgery for patients unable to undergo ERCP.