infant feeding tube and a '2-way Foley' of lesser calibre than the commercially available one are introduced simultaneously through the strictured urethra.

DISCUSSION

This technique provides a means of tiding patients over the situation of difficulty in introducing a standard 3-way catheter when bladder irrigation is required in cases of stricture.

References

1. Daly S. (ed) *Nursing Procedures*, 2nd edn. Springhouse, PA: Springhouse Corp., 1996; 582.
2. Vose JM, Reed EC, Pippert GC, Anderson JR, Bierman PJ, Kessinger A *et al.* Mesna compared with continuous bladder irrigation as uroprotection during high-dose chemotherapy and transplantation: a randomized trial. *J Clin Oncol* 1993; 11: 1306–10.

Bone grafting of the un-united docking site in bone transport: description of a percutaneous approach

CP CHARALAMBOUS, RA WILKES
Lower Limb Reconstruction Unit, Hope Hospital, Salford, UK

CORRESPONDENCE TO

CP Charalambous, Department of Trauma & Orthopaedic Surgery, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, UK
E: bcharalambos@hotmail.com

BACKGROUND

Non-union of the docking site is estimated to occur in up to 50% of bone transport cases. Bone grafting for such cases is traditionally done using a formal open approach, where the skin and periosteum are incised and elevated off the bone, the docking

Figure 1 The limited space between rings a and b and the poor soft tissues make an extensive open approach to the docking site extremely difficult.

Figure 2 (A) Non-union of docking site; (B) docking site post drilling; (C) docking site post insertion of bone graft dowel.

site is exposed, any fibrous tissue is removed, the bone ends are freshened and bone graft is packed in the remaining gap. Occasionally, such an extensive open approach is made technically difficult by the transport frame rings being too close or the soft tissues being too poor (Fig. 1) to allow extensive dissection. In such cases, a percutaneous approach is of value.

TECHNIQUE

A 2–3 cm skin incision is made at the level of the docking site and the periosteum is incised. Using a 6-mm drill or a Dynamic Hip screw reamer, 2–3 drill tunnels are made at the docking site. Initially, a vertical anterior–posterior drill hole is made. Further drill holes are made at an angle to this if, and as, needed. A corresponding number of bone graft dowels is harvested from the iliac crest using a percutaneous harvester kit. These are inserted and punched into the pre-drilled docking site and the soft tissues are closed (Fig. 2).

A new technique for removal of fractured locking screws from intramedullary nails

SHANTANU MANDAL, NIGEL PATRICK COLEMAN
Department of Trauma and Orthopaedics, Queen Elizabeth Hospital, King's Lynn, UK

CORRESPONDENCE TO

Shantanu Mandal, Department of Trauma and Orthopaedics, Queen Elizabeth Hospital, King's Lynn, Norfolk PE30 4TH, UK
T: +44 (0)1553 613836; F: +44 (0)1553 613700;
E: mandels@hotmail.com

BACKGROUND

Locking screw or bolt breakage in fractures treated by intramedullary nailing can cause difficulty in exchange nailing as the fractured screw may prevent nail extraction (Fig. 1a) resulting in a bigger incision, extensive soft tissue dissection and cortical disruption for its retrieval. Methods described to push out the

Figure 1 (a) Broken screw remnant preventing nail extraction. (b) Angulation of fractured screw due to nail migration. (c) Trocar tapping away fractured screw remnant.

Figure 2 Trocar, drill sleeve, tissue protection sleeve.

broken screw from the nail include using K wires,¹ another screw² and thin punch.³ We describe a new technique, which utilises instruments available in a standard nailing tray.

TECHNIQUE

A radiolucent operating table is used. The broken screw head is removed with an appropriate screwdriver. Sometimes, the nail may have migrated distally with the broken screws lying at an angle to the bone and nail (Fig. 1b). Nail extractor is attached to the nail which is then moved to align the locking holes in the bone and nail with the broken screw. A trocar from the proximal/distal locking system (consisting of tissue protection sleeve, drill sleeve and trocar; Fig. 2) is passed through the skin incision and, under image-intensifier guidance, is aligned with the screw remnant to tap it out of the nail and bone into the soft tissues (Fig. 1c). In some nails, it may be necessary to enlarge the near cortex using a proximal/distal locking drill if the trocar diameter is larger.

DISCUSSION

The trocar is an ideal instrument for this purpose as it is of narrow bore, long enough to reach the broken screw and has a tapping end. All the instruments thus used are part of a standard nailing set obviating the need for any special tool.

References

1. Sancineto CF, Rubel IF, Seligson D, Ferro GV. Technique for removal of broken interlocking screws. *J Orthop Trauma* 2001; **15**: 132–4.
2. Davies NM, Farnell RD, Unwin AJ, Jones JR. A technique for removal of fractured locking screws from an intramedullary nail. *Injury* 1997; **28**: 159.
3. Matthews SJ, Landsmeer RE, Thomas TL. Removal of broken drill bits and locking screws from an intramedullary nail. *Ann R Coll Surg Engl* 2006; **88**: 316.

A useful assistant for shoulder arthroscopy: the Mayo table

KIRAN SINGISETTI, ANDREAS HINSCHKE

Department of Orthopaedics, Queen Elizabeth Hospital, Gateshead, UK

CORRESPONDENCE TO

Kiran Singiseti, Department of Orthopaedics, Queen Elizabeth Hospital, Gateshead NE9 6SX, UK
E: kirsingiseti@gmail.com

BACKGROUND

The set-up during shoulder arthroscopy does not allow easily, for the placement of a Mayo stand at a suitable location. We have, therefore, adopted the use of a 'Mayo table' as an attachment to the operating table via its adjustable leg, opposite to the operating surgeon.

Figure 1 Arrangement of the Mayo table.