Technical Section

TECHNICAL NOTES & TIPS

TECHNICAL NOTES

Hip arthrodesis in the paediatric and young adult patients: the use of hip resurfacing reamers

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BACKGROUND

Hip arthrodesis is a good option in young active patients in whom the risks of failure of alternative treatments such as total hip replacement (THR) are high or where other bone-conserving techniques are not indicated.¹ The success of fusion and later conversion to THR depends upon accurate hip positioning, conservation of bone and preservation of abductor function. A simple, unique method of achieving these factors is described.

TECHNIQUE

The patient is positioned supine on a radiolucent table with both hips prepared and the perineum shut off. An abductor-sparing anterior approach is then performed. The acetabulum is prepared

Figure 1 An arthrodesed hip prepared using hip resurfacing reamers.

with sequential powered hemispherical hip resurfacing reamers to reach bleeding subchondral bone. The femoral head is prepared using the reciprocal resurfacing reamer of an appropriate size to facilitate congruent reduction of the joint. The hip is then easily placed in the desired position prior to intra-articular fixation using a pin and plate system via a lateral approach to the proximal femur (Fig. 1).

DISCUSSION

The difficulties of arthrodesis are: achieving the desired position, non-union, pain and a high complication rate following conversion to THR. Accurate positioning minimises adjacent pain and the requirement for THR. The reciprocal geometry of the hip created by the resurfacing reamers allows ease of positioning which is confirmed by Thomas' test and fluoroscopy in this supine exposure. The reamers also create a large contact area of subchondral bone promoting fusion while preserving the proximal femoral anatomy and abductor muscles. Primary and revision arthroplasty is technically easier due to bone conservation.

Reference

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Arthroscopic debridement of docking site in Ilizarov bone transport

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BACKGROUND

Ilizarov bone transport is well established in the management of osteomyelitis, non-union and bone defects. A common complication of bone transport is docking site non-union. This often requires further procedures to aid docking,^{1,2} ranging from freshening of the bone ends with a curette and osteotome to bone grafting.^{3–5} Open procedures may be technically difficult due to

Figure 1 Fluoroscopic image of the docking site.

Figure 2 Arthroscopy of the docking site.

Figure 3 Use of the ArthroWand® to debride fibrous tissue at the bone end.

restricted access caused by the frame and poor soft tissue quality. We describe an innovative, arthroscopic technique to aid union at the docking site.

TECHNIQUE

The technique is performed when the docking site gap is ≤ 10 mm. The level of the docking site is located fluoroscopically (Fig. 1). Medial and lateral arthroscopy portals are created (Fig. 2) and the arthroscope is introduced into the docking site. Fibrous tissue is debrided from the bone ends using an ArthroWand® (ArthroCare UK Ltd; Fig. 3). Once the bone ends are visible, they are freshened using an arthroscopic burr. A fluid management system is used to maintain low pressure flow through the docking site. Bone graft or synthetic graft substitute may be applied percutaneously in cores using a trephine.⁵ Bone transport continues thereafter and union at the docking site is achieved by compression.

DISCUSSION

It is postulated that a fibrous cap develops at the bone ends during the transport process. Freshening of the bone ends stimulates union by exposing fresh bone, releasing inflammatory mediators and marrow contents. Arthroscopic debridement of docking site achieves this whilst respecting the soft tissue envelope, which is vital in the post-infected or traumatised limb.

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The 'golf-tee' incision for lower mid-pole peri-areolar cancers

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BACKGROUND

Breast-conservation treatment is an acceptable alternative to mastectomy for the treatment of early breast cancers¹ and provides