Technical Section [TECHNICAL NOTES AND TIPS

Introduction of antibiotic-loaded cement during hip hemiarthroplasty washout to reduce the need for full revision surgery

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BACKGROUND

Infections in prosthetic joints are an uncommon (but disastrous) complication of arthroplasty. Infections associated with hemiarthroplasty for intracapsular fractures of the femoral neck can be fatal.¹

Polymethylacrylate cement can be used to deliver antibiotics directly to an area of infection, thereby reducing the need for long-term administration of antibiotics.² This method is used commonly in two-stage revision arthroplasty for infected total hip replacements.

TECHNIQUE

During washout for suspected infection of a prosthetic joint after modular hemiarthroplasty (Exeter Unitrax®; Stryker, Kalamazoo, MI, USA;

Fig 1a), the head component is removed, followed by sampling for microbiology and pulse lavage. Foam from the packaging is placed into the collar insert (Fig 1b). Antibiotic-loaded cement is prepared without use of a vacuum to allow optimum elution of the antibiotic.³ This cement is inserted into the space between the collar insertion and inner surface of the head using a McDonald elevator. The cement is allowed to set, the foam insert is removed, and the head replaced.

This technique allows delivery of antibiotics directly around the prosthesis, as well as removing a potential space for collection of debris and microbial colonisation.

DISCUSSION

In cases of suspected infected hemiarthroplasty, introduction of additional antibiotic-loaded cement at the time of washout may be desirable compared with revision procedures. The aim is to reduce the systemic load of antibiotics, remove dead space for biofilm formation, and prevent the need for full revision surgery.⁴

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(a) Modular head of Exeter Unitrax®

(b) Antibiotic-eluting cement within the Exeter Unitrax® head with a foam collar insert protector

Figure 1 Introduction of antibiotic-loaded cement using the Exeter Unitrax® system (Stryker)

An efficient method of soft tissue preparation of amputated digits for replantation

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Many techniques have been described to improve the efficiency of preparing amputated digits.^{1,2} The amputated part is examined to assess for viable vessels before replantation is undertaken. This task is often done without an assistant.

We describe a simple technique that allows the operator to maintain stability of the amputated digit while performing dissection under the microscope. Vascular slings are placed over the digit and pinned down on either side using 22G needles (Fig 1). Furthermore, the stabilised digit can be adjusted by turning it under the sling, thereby allowing easier midlateral access for the surgeon.

Figure 1 Amputated digit secured with vascular slings

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Positioning tips for distal fibula ankle fracture fixation

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Patient positioning is key to successful fixation of distal fibula fractures. When supine, the leg rests in an externally rotated or neutral position. The leg must be rotated internally throughout the operation to enable adequate visualisation of the lateral ankle. Exposure is improved by elevating the ipsilateral hip with a sandbag. However, in patients with a stiff hip or excessive external rotation, this is not enough. In these cases, exposure can be improved further by placing a size 7.5 or greater glove over the foot and securing the glove fingers

Figure 1 Ankle positioned in external rotation using a glove over the foot

over the contralateral foot. This provides internal rotation throughout the operation and covers dirty toes.

A novel technique to reduce the likelihood of proximal junctional failure

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BACKGROUND

Proximal junctional kyphosis is a common complication of adult spinal deformity (ASD) surgery, occurring in 20–39% of cases.¹ When associated with structural failure, PJK is defined as proximal junctional failure (PJF). Half of patients with PJF require revision surgery within six months.²

The Complex Spine Study Group classification includes implant–bone interface failure as a cause of PJF.³ Introducing a preload by forcing an undercontoured rod into the proximal screws of a construct is thought to contribute to this failure mode.¹ According to the Scoliosis Research Society, attempting to avoid this pitfall is the most common surgical PJF prevention strategy employed.⁴ We believe that our technique will help surgeons achieve this goal of avoiding the proximally undercontoured rod.

TECHNIQUE

Having introduced a rod into an all pedicle screw construct, insert set screws loosely at every level. Following this, lock the set screws at each level, except the proximal two levels, using a torque limiting set screw driver and counter torque. Next, remove the loose set screws at the proximal two levels. If the rod rises above the level of the pedicle screw heads, it is undercontoured. In this case, using in situ sagittal benders, bend the rod until it sits snugly inside the pedicle screw heads without the use of any external force. Finally, lock the now properly contoured rod into the proximal two pedicle screws using set screws.

Figure 1 Undercontoured proximal rod held in place with set screws