ses the underlying subcutaneous tissue (not the subdermal space). The same steps are repeated on the ipsilateral skin edge (Fig 1B). Both the ends are pulled caudally (Fig 1C) to attain adequate skin approximation (Fig 1D) that finishes with a secure 'figure-of-eight' configuration (Fig 1E).

DISCUSSION

In this method, the end result of the transversely (rather than longitudinally) configured coaptation of the skin edges tends to achieve the original anatomical elevation of the umbilical mound. Moreover, the firmly suture approximated wound edges are likely to decrease the rate of wound dehiscence. Although supplementary studies are needed, we encountered no wound complications in 1,853 patients over the last 3 years. Thus, it may be proposed as a standard technique for umbilical port closure.

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Air arthrography to confirm intra-articular positioning for hip injections

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BACKGROUND

The addition of contrast to confirm intra-articular needle placement is not without risk. Complications may mask the benefits of steroid injection. We present a safe and effective method of using air arthrography to confirm intra-articular location of hip injections.

TECHNIQUE

An anterolateral approach avoids the femoral neurovascular bundle. The needle is positioned using standard landmarks and positioning is confirmed using an image intensifier. Local anaesthetic is administered to the skin. Following this, an 18G spinal needle is inserted at a 30° angle along the neck. When bone is touched, the needle is

Figure 1 Plain radiography demonstrating an intracapsular air ring following air arthrography

withdrawn to ensure it is suprapariosteal, aspirated and then 5–10ml of air is injected. The air should pass without resistance, producing an intracapsular air ring on radiography (Fig 1). A further x-ray can be taken after injection of fluid to confirm air displacement.

DISCUSSION

Intra-articular injection of contrast medium can cause severe reactions such as septic arthritis, anaphylaxis and vascular complications, with minor reactions including chemical synovitis, vagal reaction and urticaria.^{1,2} A study with a large retrospective questionnaire on 262,000 arthrograms reported a complication rate of 3.6% and 0.03% of these complications were severe.¹ Another study reported sterile chemical synovitis as the most common adverse reaction following arthrography.²

We have used this technique for several years without any known infection and have conducted a prospective study on 40 patients using an air arthrogram with subsequent contrast arthrography confirming a 100% success rate. Air arthrography of the hip offers a safe, free and accurate alternative to conventional contrast arthrography.

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