Syringe-pressurised bone wax to stop bleeding from vertebral body pin sites during anterior cervical discectomy and fusion (ACDF)

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Anterior cervical discectomy and fusion (ACDF) is a common spinal procedure, with over 500,000 cases performed between 1990 and 1999 in the USA alone.¹ ACDF is well-established for the management of patients with radiculopathy and/or myelopathy secondary to degenerative disc disease and/or spondylosis.²

In 2007, Fountas et al reported a postoperative haematoma rate of 5.6% (n=57) in a series of 1015 ACDFs, with emergent surgical evacuation of a haematoma required in 2.4% (n=24) of cases.² No patients who developed haematomas had a bleeding diathesis and, at the time of evacuation, no active bleeding points were seen.

Many surgeons place distraction pins in the vertebrae above and below the disc to facilitate the procedure (Figure 1). In our experience, removal of these pins towards the end of the procedure can lead to bleeding from the resultant holes that can be hard to control (Figure 2).

We present a technique to stop bleeding from the vertebral body pin sites via the use of syringe-pressurised bone wax.

TECHNIQUE

A piece of bone-wax is rolled by hand into a 'sausage shape' to fit into a 1 ml syringe (Figure 3). The syringe tip is placed over the bleeding pin-site and the wax pressurised by depressing the plunger (Figure 4). This leaves a bone wax plug that integrates into the trabeculae, thus stopping bleeding (Figure 5).

DISCUSSION

We describe a technique for accurately pressurising bone wax into a pin-site to stop a potential bleeding point. This may reduce haematoma formation following ACDF. This technique can be translated to other orthopaedic procedures in which cortical bone is breached and not subsequently filled by an implant.

Figure 1 Distraction pin in situ

Figure 3 Preparation of bone wax syringe

Figure 2 Bleeding from the pin site

Figure 4 Pressurisation of bone wax

Figure 5 Bone wax plug in situ

References

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