Technical Section [TECHNICAL NOTES AND TIPS

Single-incision distal biceps tendon repair using spinal retractors to achieve optimum exposure

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doi 10.1308/rcsann.2017.0084

BACKGROUND

Achieving and maintaining adequate, safe exposure during single-incision distal biceps repair can be a challenge, particularly in well-muscled individuals. To maintain visualisation of the radial tuberosity, it is necessary to fully supinate the forearm and to place deep right-angled retractors rather than levered retractors to protect the posterior interosseous nerve.^{1,2} It can be difficult for the assistant to simultaneously maintain retraction and forearm supination and to operate accessory instruments, especially if the elbow must be flexed to reduce the tendon to the tuberosity. Consequent loss of visualisation may compromise safety and efficiency.

TECHNIQUE

The authors advocate the use of a cervical spine retractor as a solution to these issues (Fig 1). The retractor is modular, with a variety of blade length and width options to suit individual patient morphology. It has articulated arms, which maintain a low profile and do not interfere with other instruments. Controlled retraction is applied with a ratchet mechanism, which is easily released and reapplied when not working on the radial tuberosity, to avoid prolonged soft tissue traction.

Figure 1 Biceps retractor (© Joideep Phadnis)

DISCUSSION

The main advantage is that controlled, effective retraction is applied through all positions of elbow flexion while freeing the assistant to maintain supination and help with the procedure. The curved tips and ratchet mechanism prevent any loss of position or visualisation while the retractor is in use, which also makes training and supervision more straightforward.

To date, the senior author has used this technique in 15 cases and it now constitutes his standard practice. We have not seen any complications related to this method of retraction.

References

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Surgery for popliteal artery entrapment syndrome: use of an intraoperative tibial nerve stimulator and duplex ultrasound

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doi 10.1308/rcsann.2017.0099

BACKGROUND

Popliteal artery entrapment syndrome (PAES) is a rare cause of intermittent claudication in younger patients. Compression of the popliteal artery may be caused by a variety of anatomical abnormalities and physiological hypertrophy of the medial head of gastrocnemius. Surgery involves resection of the structures causing arterial compression using either a posterior or a medial approach to the popliteal fossa. However, intraoperatively it can be difficult to be certain the extent of resection needed. Failure to relieve compression effectively may account for a significant number of treatment failures.^{1,2} We describe a technique in which a tibial nerve stimulator and pedal Doppler assessment are used intraoperatively to guide effective surgical release.

TECHNIQUE

In most patients with PAES, distal blood flow is diminished with forced plantar flexion at the ankle. The tibial nerve is stimulated using a nerve stimulator (Fig 1). Doppler ultrasound documents normal flow in the pedal vessels. Application of an increasing electric current causes tetany and forced plantar flexion at the ankle. This mimics popliteal artery entrapment and results in a cessation of distal blood flow identified by