SURGICAL SAFETY UPDATE

Cases from the Confidential Reporting System for Surgery (CORESS)

Missed breast tumour in pooled case

A 50-year-old woman presented through the Breast Screening Programme with a right breast cancer. At the time of assessment the tumour was easily palpable as a 2cm mass. She was listed for wide local excision and sentinel lymph node biopsy.

During pre-assessment she required cardiac investigations prior to surgery, leading to a delay in the procedure. She was, therefore, commenced on primary hormonal therapy because she was oestrogen receptor positive. Her surgery was undertaken approximately six weeks later.

On the day of surgery the patient was examined by a different surgeon and the tumour was no longer palpable. The consultant who carried out the initial assessment was on leave and the operating list was undertaken by another experienced surgeon. The surgeon spoke to the on-site breast radiologist, who placed a skin mark over the site of the tumour under ultrasound control. Uneventful surgery was undertaken.

At the post-surgery MDT, it was reported that no tumour was present in the excised breast specimen. The patient was reassessed radiologically and the persistent tumour was identified adjacent to the surgical bed. A second procedure under wire-guidance was undertaken and the tumour was successfully removed.

Reporter's comments

This highlights the pressure to use operating capacity to its maximum. It was complicated by an unusually fast response of the tumour to hormone therapy, such that it became impalpable. Despite efforts to localise the tumour with a skin mark, this was ineffective. A protocol has now been introduced dictating that in similar circumstances a guide wire should be placed under imaging control prior to surgery.

CORESS comments

Where cases are pooled, standards need to be protected through use of common protocols. Options here might have included placement of a coil or clip, under radiological control, prior to chemotherapy to aid tumour localisation. Placement of a guide wire to aid dissection under ultrasound control remains an effective method of localising an impalpable tumour prior to resection.

Complications after surgery for thoracic outlet syndrome

A 38-year-old woman underwent first rib resection and scalenectomy with pectoralis minor tenotomy for neurogenic thoracic outlet syndrome (NTOS). Preoperatively, the procedure and potential complications were discussed in detail with the patient while obtaining informed consent. Surgery was uneventful and the first rib was excised via a supraclavicular approach. Scalenus anterior was detached from the scalene tubercle on the first rib and a substantial portion excised, relieving compression of the subclavian artery and brachial plexus. The operating surgeon searched for the phrenic nerve, which lies on the anterior border of scalenus anterior, beneath the scalene fat pad, but was unable to identify the nerve.

The patient made a satisfactory recovery and was discharged on the first postoperative day. Four weeks later she attended her GP, unwell with a cough and a fever. She was referred to hospital, where she was diagnosed with pneumonia. On auscultation of her heart, a mitral-valve murmur was noted. Blood cultures were obtained and the patient underwent chest x-ray, which showed consolidation in the base of the right lung and an elevated right hemidiaphragm. Echocardiography confirmed mitral-valve regurgitation with the suggestion of vegetations on the valve.

She was treated with intravenous antibiotics, but remained breathless and unwell. Eventually the cardiac surgery team intervened, in the presence of normal blood cultures, to undertake mitral-valve annuloplasty and debridement via median sternotomy. Six months post-surgery, on long-term antibiotics, the patient remains well with improvement of her NTOS symptoms and normal cardiac function.

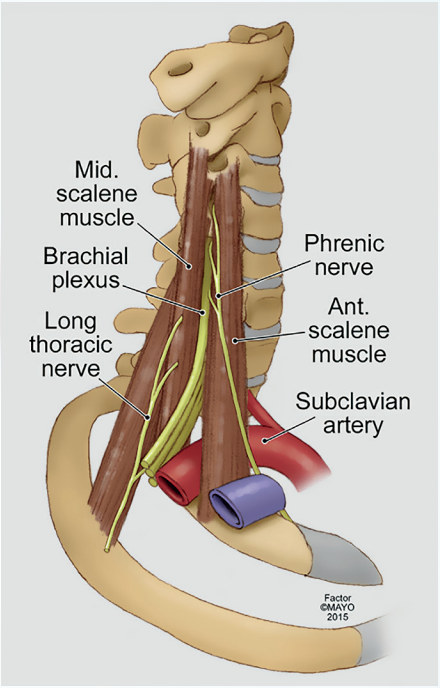

FIGURE 1: The anatomy of the thoracic outlet illustrating nerves at risk during surgical decompression. The clavicle is not illustrated in this diagram. (Taken from: Illig KA et al. Reporting standards of the Society of Vascular Surgery for thoracic outlet syndrome. J Vasc Surg 2016; 64: e23-e35.)

Reporter's comments

Surgery for NTOS represents a small niche in surgical practice. The procedure involves decompression of the scalene triangle by resection of the scalenus anterior and scalenus medius muscles to decompress the roots of the brachial plexus and subclavian artery, with resection of the first rib. During surgery the brachial plexus, phrenic nerve and long thoracic nerve to serratus anterior are at risk (see Figure 1).

As the operating surgeon I had discussed the potential risks with the patient in detail and had documented these on the consent form. Nonetheless, having failed to identify the phrenic nerve, despite looking for it and documenting this in the operation note, it would appear that the nerve was injured during the procedure, giving rise to the elevated hemidiaphragm. Subsequent development of a pneumonia predisposed the patient to septicaemia and the resultant endocarditis. This was not a complication previously encountered. Identification and protection of the phrenic nerve during dissection in this procedure is paramount. The elevated hemidiaphragm subsequently recovered, suggesting nerve paresis.

CORESS comments

The Advisory Board accepted the reporter's comments. The anatomy relating to this procedure is illustrated in Figure 1.

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Programme Director on behalf of the CORESS Advisory Board
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The online reporting form is on our website, coress.org.uk, which also includes previous Feedback Reports.

Published cases will be acknowledged by a Certificate of Contribution, which may be included in the contributor's record of continuing professional development.

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Abscess confusion

A 45-year-old man presented to the emergency department on a Friday with a left-buttock abscess of two-week duration. He was seen and consented for incision and drainage by the surgical SHO, who marked the side and site with a large arrow pointing towards the abscess from laterally. In the event the emergency list ran late and the patient was cancelled for surgery that night. He was sent home and told to come back after the weekend. When he reattended he was listed for incision and drainage of a pilonidal abscess. The skin was re-marked over the site of the still-visible inked arrow and he was consented for drainage of a buttock abscess, but he was not seen by the registrar due to undertake the procedure, who was already operating.

The patient was brought to theatre and placed in the left lateral position, with the marked arrow and abscess obscured. With the patient draped and anaesthetised, the registrar was unable to find a pilonidal abscess. He called in the consultant who thought he felt some localised induration and undertook an exploratory incision in the natal cleft, which he left open and packed. No sample was sent for microbiology.

When the patient returned to the recovery area and was awoken, he was disturbed to find that the symptoms from his undetected, and untreated, left buttock abscess persisted. He subsequently required a further procedure and a formal complaint was submitted.

Reporter's comments

Confusion arose between the classification of the various abscesses that arise around the buttocks, perineal and natal cleft regions. The patient was inappropriately listed for the wrong operation and was not seen prior to surgery by the operating surgeon, who positioned the patient according to the procedure described on the list. In this position neither the abscess nor the marked arrow could be seen.

CORESS comments

Multiple errors contributed to this adverse event. There was failure to apply the correct nomenclature to the disease, which was described differently on the consent form and operating list. Of paramount importance was the fact that the operating surgeon did not examine the patient and confirm the site of disease prior to anaesthesia.

The site of the marked abscess was not visible in the position in which the patient was placed. A preoperative brief and a formal WHO check should have prevented this occurrence. This is a systemic problem compounded by individual failures, referred to by the Advisory Board psychologist as 'organisational amnesia'.