Royal College of Surgeons of England
ADVANCING SURGICAL CARE

CORESS is a confidential reporting system for surgery. The purpose of CORESS is to promote safety in surgical practice, both within the NHS and in the independent sector.

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coress feedback

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PICC line fracture on removal (Ref 255)

A 65-year-old man had been treated successfully for a pelvic sarcoma over a period of 5 years. He had required placement of three successive long-term venous access lines during that period for chemotherapy. The last peripherally inserted central catheter (PICC) line had been placed in situ via a left antebrachial route, into the left basilic vein and then centrally, and was currently redundant. The oncology service had planned removal of this line so the patient could go swimming. When the oncologist met resistance while trying to remove the line, the on-call vascular team was asked to help. An experienced vascular surgeon attended and removed the line, perhaps with a little more force than the oncology team had deployed.

The next day, the patient complained that something did not 'feel right' and that he had felt a 'snap' when the line was removed. Imaging confirmed the presence of the distal residual line, which had broken off when the 6F gauge catheter was removed. As the patient was asymptomatic, the decision was taken to leave the fractured line tip in place.

Reporter's comments

> If a PICC line cannot be removed in the standard fashion, further attempts to remove it via the insertion site with increased traction should not be attempted.
> PICC lines should only be removed by clinicians familiar with the devices.
> Patients should carry information with them about the invasive device; lines should not be removed without reference to this.
> If a line is stuck and cannot be removed, this should be discussed with the interventional radiology team, and image guidance should be employed. This may reveal why the line is stuck. Various radiological techniques including retrieval of the line over a guidewire or use of an endovenous snare may then be deployed.

CORESS comments

> When removing a PICC line, it is useful to know how long it is. Imaging is required to check this. Ensure that it is intact on removal. Some lines will have a black marker at the tip.
> Vein spasm may contribute to difficulty in removal. Warming the arm for a few minutes may cause venodilation, facilitating removal.

Unnecessary block neck dissection (Ref 256)

A 40-year-old man, a smoker, attended his general practitioner with a 4-week history of a lump in the right side of his neck. The general practitioner described the case as: 'throat and ears clear, lymph node 5cm x 7cm at right anterior angle, not fixed, non-tender, feels cystic, freely mobile, chest clear'. The patient was referred to the ear, nose and throat team, who arranged fine needle aspiration (FNA) of the lesion. FNA cytology showed 'atypical squamous cells, and a background of inflammatory cells and cellular debris'. This report was confirmed by three cytologists.

Computed tomography (CT) of the neck and chest, panendoscopy and right tonsillectomy were performed. On CT, the observed mass was described as a 2cm x 2cm x 3cm right level II lymph node mass with retropharyngeal and jugulodigastric nodes of 'uncertain significance'. Chest and abdominal CT showed 'no significant abnormality'. The tonsil histopathology report stated: 'hyperplastic, no malignancy'.

The patient was discussed at a head and neck multidisciplinary team (MDT) meeting with a referring comment that 'despite panendoscopy and right tonsillectomy, primary has not been found'. The MDT minutes did not list attendees. The resultant plan was: 'Right neck dissection in the next few weeks with postoperative radiotherapy, with or without chemotherapy'.

The risks indicated on the consent form, signed by the patient, were 'bleeding, scar, nerve damage'. The operating note indicated that the surgeon was a senior trainee and stated: 'Modified radical neck dissection, accessory nerve preserved'. The histopathology on the operative specimen was reported as: 'Lesion 35mm x 20mm x 15mm, contains cystic pus-filled cavity. Microscopy: branchial cyst with squamous lining. No evidence of metastatic squamous cell carcinoma in a total of 20 lymph nodes examined'.

The outpatient follow-up letter dictated by the operating surgeon stated: 'I have explained to the patient and his wife that he does not have cancer. The operation that he has had has removed the branchial cyst. No further treatment is required.' The patient was left with chronic neck pain, which had a significant effect on his earning capacity as a labourer.

CORESS and reporter's comments

> Although the FNA specimen was considered by three cytopathologists, such reports are unsuitable for evaluating

the presence of invasion and for discriminating between certain benign and well differentiated malignant neoplasms. Cytology in the best hands has a 10–20% error rate.

> Preoperative investigations, panendoscopy and tonsillectomy were negative for malignancy. In this situation, the proper course of action mandated by the MDT would have been to remove the primary lesion with intraoperative frozen section analysis. There would have been the option to continue to block neck dissection if malignancy was confirmed. Any frozen section histopathology report, other than confirmation of an invasive squamous cell lesion requiring continuation to block neck dissection, should have halted the operation procedure at the local excision point and subsequent confirmatory histopathology on paraffin sections should have been awaited.

> The MDT meeting notes were inadequate. There was no list of attendees and no mention of a differential diagnosis or of who proposed the block neck procedure and whether there was concordance with this approach. The management of this complex case was undertaken by a trainee without comment from the responsible consultant in the documentation. Duty of candour regulations were not observed.

Mismanagement of abdominal trauma (Ref 257)

A 14-year-old girl fell from her horse at a Saturday afternoon gymkhana. The horse stumbled and trod on her abdomen. The attending ambulance technician recorded 'complaints of pain to abdomen; on examination – rigid and guarding, hoof print to abdomen, pain suprapubically'. The hoof print trauma sign was confirmed on arrival at the emergency department. The girl was seen by a surgical registrar, who arranged immediate computed tomography of the abdomen and pelvis. This was reported as showing 'no evidence of any contused bowel loops or intra-abdominal pelvic haematoma, no pelvic fracture'. The child was admitted under the paediatricians.

At 10pm, she vomited blood. The paediatric registrar reviewed the child and prescribed intravenous ranitidine and ondansetron, recommending that she could 'eat and drink as comfortable/tolerated'. This opinion was supported by the junior surgical team. There was no consultant involvement overnight.

At 9am the following morning, the girl's pain score was 9/10 and her respiratory rate was 35 breaths per minute. On the post-take ward round led by a consultant paediatrician, she was noted as having 'bouts of excruciating pain every 2–3 minutes, relieved by paracetamol and codeine'. An F2 doctor then prescribed oral morphine. She was not seen by a consultant surgeon.

In the next 12 hours, nurses encouraged her to drink and mobilise. They told the parents that the imaging was normal and the girl was 'making a fuss'. On the following morning, 46 hours after the injury, the patient complained of blurred vision. Nurses continued to encourage oral intake. However, half an hour later, she collapsed. After rapid resuscitation, she was taken to theatre, where a two-thirds laceration of the fourth part of the duodenum, with 3l of free fluid in the abdominal cavity, was identified.

Postoperatively, the child was intubated, ventilated and transferred to a paediatric intensive care unit, where she remained for 11 days. She required multiple antibiotics, antifungal agents and drainage of a pleural effusion. The original laparotomy wound had to be debrided and left to heal by secondary intention. This took four months. The patient subsequently had episodes of subacute intestinal obstruction. She was off school for six months.

Reporter's comments

> Mechanism of injury: This should have alerted the admitting team. Consultant review on admission was mandatory. Haematemesis following trauma should have resulted in immediate consultant surgeon review and laparotomy.

> Treat the patient – discount imaging that is contrary to observations.

> The case highlights potential danger of non-surgical observations on a paediatric ward. Analgesics may camouflage progressive symptoms.

> Believe and act on the evidence of trained paramedics in their assessment of emergency cases.

CORESS comments

The CORESS Advisory Committee agreed with the reporter's comments and that the patient should have been admitted under the surgical team. Initial and subsequent assessments should have involved a consultant surgeon, and regular reviews should have been undertaken.

Missed pulmonary malignancy (Ref 258)

A 59-year-old man with a long history of smoking, dyspepsia and Barrett's oesophagus presented to his general practitioner with a sore throat, an altered (bovine) cough but no dysphagia. Throat examination by the general practitioner was normal. Based on the smoking history, a chest x-ray was undertaken and reported as normal. The patient was referred without delay to an ear, nose and throat (ENT) surgeon, who confirmed a left vocal cord palsy. Magnetic resonance imaging (MRI) of the neck and computed tomography (CT) of the chest was arranged. The MRI was normal; CT showed an enlarged left lobe of the thyroid causing mild tracheal deviation and 'a 6mm subpleural soft tissue nodule in the apex of the left upper lobe of the lung'. The report stated that 'a small pulmonary metastasis cannot be excluded'.

The patient was subsequently seen by a maxillofacial surgeon at a different hospital for temporomandibular joint problems. He stated in a letter that he did not have access to the x-rays. The patient was then seen by a neurologist because of his voice change. This consultant planned MRI of the brain. The original ENT surgeon decided to refer the patient to an endocrinologist, who confirmed a large multinodular goitre and referred the patient on to another consultant ENT surgeon.

Six months after the initial presentation with vocal cord palsy, the second ENT consultant recommended thyroidectomy, which was performed. The recurrent nerve was 'not seen to be specifically compressed or stretched. The nerve was preserved'.

Histopathology revealed a benign multinodular goitre. The ENT surgeon planned to review the patient six months later and to consider a bioplastic injection into the paralysed vocal cord. However, liver function tests at this time were abnormal. Despite this, the patient was taken back to theatre for microlaryngectomy, and injection and medialisation of the left vocal cord.

The patient was at this time referred for cervicothoracic MRI because of upper thoracic pain and longstanding scoliosis. An incidental finding was an irregular left-sided pulmonary hilar/mediastinal mass (lung cancer staging T4 N3). Endobronchial ultrasonography and biopsy confirmed non-small cell lung cancer. The patient was commenced on palliative chemotherapy and radiotherapy. He died of progressive carcinomatosis two-and-a-half years after his initial presentation with a hoarse voice.

Reporter's comments

The original chest CT report was ignored/missed by the ENT consultant. In the first year after presentation to his general practitioner, who had concern about the possibility of lung cancer, this patient passed through the hands of seven teaching hospital consultants, none of whom made the link between a bovine cough and recurrent laryngeal nerve infiltration by left bronchogenic carcinoma. Two anaesthetists took the patient to theatre for benign conditions when he had an enlarging left upper lobe carcinoma, which might have been apparent on auscultation. This case illustrates the downside of ultra-specialisation. The failure to review all antecedent history and imaging at different clinics as the patient was moved between different hospitals in a single trust may have contributed to the premature death of this patient.

CORESS comments

There was a disconnect between review of the medical evidence and the classic clinical presentation of recurrent laryngeal nerve invasion by a pulmonary neoplasm. The CORESS Advisory Committee felt that the reporter's criticism of the ENT surgeon was harsh but that the case should have been flagged for review by a respiratory multidisciplinary team when the original comment concerning the pulmonary nodule (seen on CT) was made. The dangers of failing to follow up all investigations when a patient is handed between specialists are apparent.

Missed opportunity to intervene for critical ischaemia (Ref 259)

A 72-year-old man was seen by the on-call vascular consultant in an on-call 'hot clinic'. The patient had been referred with a dry gangrenous toe of four weeks' duration, rest pain and a history of peripheral vascular disease for which he had previously undergone femoropopliteal bypass. The consultant performed duplex imaging and booked urgent computed tomography angiography. As the patient had come to hospital unprepared for admission and his symptoms had been unchanged for a considerable period, the consultant allowed him to go home from the clinic on that day, and wrote to the vascular waiting list coordinator requesting urgent admission for review and toe amputation.

In the interim, there were administrative delays to the admission, which were not communicated to the consultant. The patient's admission was finally prompted 18 days after the hot clinic appointment by a call from the general practitioner, who was concerned about deterioration in the patient's condition. At admission, there had been progression of ischaemia and development of forefoot sepsis. Computed tomography angiography confirmed occlusion of the previous bypass graft and a revision bypass was undertaken, which occluded within 48 hours. The patient eventually required below-knee amputation.

Reporter's comments

The patient had evidence of critical ischaemia (albeit of longstanding duration) when he was seen in the hot clinic. Irrespective of the logistical difficulties, computed tomography angiography should have been obtained urgently on that day, the results should have been reviewed by the on-call surgeon and admission probably should have been arranged on the same day. In the event, delays ensued that were not communicated to the on-call consultant, who by that time was 'off call' and undertaking his routine daily practice, and the patient's admission slipped through the net. It is possible that the outcome of below-knee amputation may have been avoided had intervention been undertaken more expeditiously.

Critical ischaemia is never a benign condition, and it may deteriorate suddenly and rapidly, particularly if sepsis ensues. Early assessment of inflow and perfusion is essential to determine whether revascularisation is feasible. Whenever an investigation is ordered, the requesting physician has a duty of care to review the outcome of that investigation as soon as possible.

CORESS comments

The CORESS Advisory Committee agreed with the reporter's comments. A clear protocol for dealing with acute cases requiring intervention in the hot clinic might have reduced the risk of the patient's delayed admission. Formal on-call handover of a list of all outstanding patients would have helped the incoming on-call consultant to be aware of the patient. In some trusts and specialties, digital referral systems are used to ensure specific actions in the patient pathway are completed.