Cervical spine infection presenting as angina

M Gadour, SM Rajbhandari, S Tesfaye

The exact diagnosis for the cause of chest pain is not always straightforward as some unusual conditions may present with this symptom. We report one case of 'cervical angina' where a diabetic patient with infective discitis presented with a pain mimicking anginal chest pain.

INTRODUCTION

Chest pain is one of the commonest reasons for emergency admission. Although in the majority of cases the diagnosis is apparent, some cases of chest pain pose a diagnostic challenge and consequently more than 50% of these continue to have significant morbidity from this causing a heavy burden on health resources and GPs' time (Aisenberg and Castell, 1994). A diagnosis of musculoskeletal chest pain is made in 10% of cases of non-cardiac chest pain (Minocha and Joseph, 1996). Although the majority of these are ill understood, the clinical course is usually benign. However, some have specific and rarely potentially serious causes, which need to be excluded. One of these is cervical nerve root compression leading to chest pain, which mimics true cardiac angina. This phenomenon is known as cervical angina or 'pseudo-angina' (Wells, 1997).

DISCUSSION

As this case illustrates, a detailed history and clinical examination is very important in reaching a diagnosis of a case of chest pain. However, in a busy medical emergency ward this is often difficult, and potentially treatable conditions such as this case may be missed. Disc prolapse and cervical spinal cord tumours have been reported as causes of cervical angina (Mitchell and Schafermeyer, 1991), with chest pain as the main presenting feature. Thus, when patients present with atypical chest pain and common causes are considered unlikely, rarer causes of chest pain such as cervical angina should be considered.

Usually compression of the C7 nerve root causes cervical angina (Wells, 1997). Useful clues such as neck pain, stiffness, occipital headache and sensory symptoms in the upper limbs should be sought from the patient in these conditions. The pain typically changes with posture, and may be precipitated by sneezing or coughing. It is sometimes reproduced by a lateral head tilt, which involves extension and rotation of the cervical spine to the symptomatic side in

CASE REPORT

A 61-year-old male presented to the accident and emergency department with left-sided chest pain radiating to the back and down to both arms. He had a history of insulin-dependent diabetes, hypertension and hiatus hernia. Physical examination and a resting 12-lead electrocardiogram (ECG) were normal. The serial ECGs and cardiac enzymes did not show any evolving changes. The diagnosis of musculoskeletal chest pain was made and the patient was discharged home 3 days later, having been started on a non-steroidal anti-inflammatory drug.

A week later he attended the diabetes clinic for routine follow-up of his diabetes. During the consultation it was apparent that the chest pain had not improved. On specific questioning he admitted to having neck pain for the previous 4 weeks in addition to the chest pain. As the pain was also accompanied by bouts of sweating, episodes of hypoglycaemia were excluded by blood sugar monitoring, which were in fact elevated during this period. There was also a weight loss of 3 kg over the previous 6 weeks. Full clinical examination was normal except for a pulse rate of 100/min and an extensor plantar response in the left foot. The erythrocyte sedimentation rate (ESR) was markedly elevated at 50 mm/hour (normal reference range 1–10), although the white cell count was normal. X-ray of cervical spine showed destruction of the lower part of C6 vertebral body with soft tissue swelling (*Figure 1*). An urgent magnetic resonance imaging (MRI) scan of the cervical spine showed features suggestive of cervical discitis at C6 level (*Figure 2*). Even though blood cultures failed to grow any organism, a clinical diagnosis of cervical angina due to infective discitis was made. In consultation with neurosurgeons, a decision was made to treat this medically with intravenous flucloxacillin and fucidic acid. A repeat MRI scan after 2 weeks of treatment showed marked improvement. The patient felt better and his chest pain, neck pain and diabetes control improved remarkably.

Antibiotics were changed to oral preparations after 6 weeks and were continued for 3 months. The ESR came down to normal. On follow-up 6 months later, he was symptom free and a follow-up MRI scan showed significant improvement. He had regained all the weight he had lost. The abnormal physical signs had disappeared.

Figure 1. Cervical spine X-ray showing disc space narrowing at C5/6 and C6/7 with destruction of the inferior part of the 6th vertebral body and a soft tissue swelling on the front of the vertebrae.

Dr M Gadour is Specialist Registrar in the Diabetes and Endocrinology Centre, Northern General Hospital, Sheffield S5 7AU, **Dr SM Rajbhandari** is Research Fellow and **Dr S Tesfaye** is Consultant Physician in the Diabetes Centre, Royal Hallamshire Hospital, Sheffield

Correspondence to: Dr M Gadour

combination with downward compression by the examiner (Akiryama et al, 1994). Pain may be relieved by shoulder abduction (Fast et al, 1989). Positive diagnosis is made by a magnetic resonance scan of the cervical spine.

Figure 2. Sagittal T2 weighted image of cervical spine showing areas of increased signal intensity in the C6/C7 vertebrae with compression and narrowing of the epidural space.

Pyogenic infective discitis is an uncommon but serious disorder, with frequent involvement of neural structures including the spinal cord (Kapeller et al, 1997). In one series of 41 patients Kapeller et al reported that the most prevailing clinical symptom was focal pain aggravated by percussion and evidence of inflammations were elevated erythrocyte sedimentation rate (ESR), leukocytosis and fever (Kapeller et al, 1997). Magnetic resonance imaging is the most appropriate method for diagnosis and signal change in T2-weighted images may be the first sign of disc space infection (Kuker et al, 1997).

Delay in diagnosis of this condition can have serious consequences. In this patient, careful clinical history alerted us to the possibility of cervical angina as a cause for his chest pain, and appropriate treatment was therefore undertaken. A delay could have resulted in cervical cord damage leading to quadriplegia (Sawada et al, 1996). In retrospect, the deterioration in diabetes control, weight loss, bouts of sweating and high ESR did point to an infective process.

CONCLUSIONS

Patients presenting with chest pain which is atypical for cardiac, respiratory, oesophageal or other common causes of chest pain should be asked if they have coincidental neck pain. If they do, this needs to be investigated further to exclude cervical angina, which is potentially treatable. HM

Aisenberg J, Castell DO (1994) Approach to the patient with unexplained chest pain. *Mount Sinai J Med* **61(6):** 476–83

Akiryama H, Lamura K, Kondo M (1994) Spinal cord tumour appearing as unusual pain. *Spine* **19(12):** 1410–12

Fast A, Parikh S, Marin EL (1989) The shoulder abduction relief sign in cervical radiculopathy *Arch Phys Med Rehabil* **70(5):** 402–3

Kapeller P, Fazekas F, Krametter D, Koch M, Roob G, Scmidt R, Offenbacher H (1997) Pyogenic infectious spondylitis: clinical, laboratory and MRI features. *Eur Neurol* **38(2):** 94–8

Kuker W, Mull M, Mayfrank L, Topper R, Thron A (1997) Epidural spinal infection. Variability of clinical and magnetic resonance imaging findings. *Spine* **22(5):** 544–50

Minocha A, Joseph AS (1996) Pathophysiology and management of non-cardiac chest pain. *J Kentucky Med Assoc* **93(6):** 196–201

Mitchell LC, Schafermeyer RW (1991) Herniated cervical disk presenting as ischaemic chest pain. *Am J Emerg Med* **9(4):** 343–6

Sawada M, Iwamura M, Hirata T, Sakai N (1996) Cervical discitis associated with spinal epidural abscess caused by methicillin-resistant staphylococcus aureus. *Neurol Med Chir Tokyo* **36(1):** 40–4

Wells P (1997) Cervical angina. *Am Family Physician* **55(6):** 2262–4

IN THE PUBLIC'S VIEW...

The three Rs of medicine: regulation, rationing and retirement?

Bad teachers? No problem. We'll watch them and assess them and warn them, and if they're no good it's name and shame. Bad teachers should be sacked. Do I hear the teachers complaining? Pah! That's just self-interest! Sack them!

Bad doctors? No problem. We'll revalidate and audit and warn them. Name and shame: bad doctors must be struck off. Do I hear doctors complaining? Well, that's just evidence that we may have to look carefully at self-regulation. Strike them off!

Foreign office made a mistake in Sierra Leone? No problem. We set up a select committee of MPs from all parties who investigate impartially. The committee decide that indeed the FO were incompetent so, adhering to their principles and treating incompetence in the FO with the same rigour they wish to bring to bear on teachers and doctors, the government...rubbish the report and carry on as normal.

So let's stick with politics. For years doctors have been asking politicians to speak the r-word: rationing. We've watched new treatments emerge, and been aware that patients are getting treated for some conditions not because of clinical need but because of where they live. The Conservatives denied all knowledge of the r-word; Labour allowed the p-word, prioritization, but still denied the r-word. Then along came Viagra, and at last — as I hoped in a 'Public's View...' last year — we got some real discussion of rationing. Frank Dobson, to his credit, realized that we could not stretch NHS finances to breaking point for the sake of anyone who couldn't get an erection. I don't think he got his criteria quite right, but at last a politician was facing up to the truth.

And what reward did he get? The BMA told doctors to ignore his advice and give Viagra to anyone on the sole criterion of clinical need. Admittedly, the media somewhat distorted the BMA's view, but the BMA should know enough about how the media work not to allow themselves to appear as foolish as they did.

That's not the only quarrel I've got with the BMA at the moment. When the latest Review Body report and salary increases were announced, the BMA was miffed that consultants were not to receive an extra increase for their increasing workload. I don't want extra pay for extra work; I don't want to have to do any extra work. And I reckon that's what most of my colleagues think too. We were appointed to full-time jobs. If those jobs are now more than full-time jobs we need more consultants, not more pay.

Newspaper articles and television programmes tell us constantly how people in the UK work longer hours than anyone else in Europe, and that long working hours are bad for us. Asking for more pay for more work leads in the future to yet more work, but for proportionally less and less pay. No wonder I have so few colleagues who intend sticking with it beyond their 60th birthday. HM

Dr Neville W Goodman is Consultant Anaesthetist at Southmead Hospital, Bristol