Lesson of the Week

Sternoclavicular joint infection as a cause of chest pain

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The sternoclavicular joint is affected in up to 9% of cases of septic arthritis¹ but there are few reports concerning the clinical features and diagnosis of infection at this site. The onset is often insidious, the physical signs unusual, and the diagnosis may be difficult. We report three such cases.

Sternoclavicular joint infection may be a cause of atypical upper anterior chest pain and may be difficult to diagnose

Case 1

A 57 year old Polish man with longstanding haemochromatosis, compensated cirrhosis, and diabetes controlled by diet and glibenclamide presented with right sided chest pain in May 1982. He was feverish and the pain was diffuse, poorly localised, and exacerbated by deep inspiration and coughing. Examination showed signs of chronic liver disease and skin pigmentation, and coarse crackles were heard at the right lung base. There was no visible abnormality of the sternoclavicular joints. *Staphylococcus aureus* was grown from blood cultures, and *Haemophilus influenzae* was grown from sputum cultures. Chest radiography showed consolidation of the right lung base but the sternoclavicular joints appeared normal.

Ampicillin and flucloxacillin were instituted and the fever resolved, but the chest pain persisted. Antibiotics were stopped after 14 days but the fever returned seven days later; *Staph aureus* was again isolated from blood cultures, although the sputum was sterile and the chest radiograph clear. The right sternoclavicular joint was then noted to be prominent and tender on palpation. Conventional radiography again showed no abnormality, but tomography showed radiolucent areas at the medial end of the right clavicle and a soft tissue mass behind the joint. Gallium scan showed a pronounced increase in activity in the right sternoclavicular joint.

At operation pus was aspirated from the joint and the medial end of the clavicle, which appeared necrotic, was excised. *Staph aureus* was isolated from the pus and bone.

The patient made a good postoperative recovery and the pain and swelling resolved with further antibiotics and local treatment.

Case 2

A 65 year old man with a four year history of steroid treated fibrosing alveolitis and two years of polyarthritis presented with a three week history of a painful swelling in the neck and a feverish illness. Examination showed a red, hot, fluctuant mass

extending from the region of the left supraclavicular fossa to the right anterior chest wall. He also had signs of fibrosing alveolitis but his polyarthritis was inactive.

Pus was aspirated from the mass in the neck and *Streptococcus milleri* isolated. Conventional x ray pictures of neck, sternoclavicular joints, and chest showed signs of lung fibrosis only. Tomography of the left sternoclavicular joint disclosed erosions in the head of the clavicle. Under local anaesthesia the sternoclavicular joint was explored and an abscess drained, from which the same organism was isolated.

He was treated with intravenous benzylpenicillin and made a good recovery.

Case 3

A 62 year old woman had bilateral hip osteotomies with plate fixation for congenital dislocation of the hip in 1967. She presented in 1981 with sudden onset of a feverish illness and flitting polyarthralgia while on holiday in Barbados. She was initially treated with prednisolone but her condition worsened when she returned home. On admission two weeks after the onset of the illness she was feverish (39°C) and there was pronounced swelling round the right sternoclavicular joint, which had not been noted previously. There was also mild tenderness of the left elbow and right wrist. *Staph aureus* was isolated from cultures of blood and urine. X ray appearances of chest, wrists, elbows, and sternoclavicular joints were normal, and the hips showed an unchanging picture from previous films. Tomography of the right sternoclavicular joint showed irregularity and destruction of the joint margin, and a gallium scan showed increased activity in the right sternoclavicular joint and both hips.

The sternoclavicular joint was opened surgically, pus was aspirated, and *Staph aureus* isolated. She was treated with intravenous flucloxacillin and fusidic acid and the septic arthritis slowly resolved.

Comment

These three cases illustrate the difficulties which may be encountered in diagnosing septic arthritis of the sternoclavicular joint. The onset is insidious, and other conditions causing anterior chest pain may be mimicked. Linscheid *et al*² reported two cases in which lung disease was wrongly diagnosed because of atypical thoracic pain and in which sternoclavicular swelling was slow to appear.

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Our cases also illustrate the inadequacy of conventional radiography in assessing the sternoclavicular joint. Tomography and scanning techniques provide more useful information and were instrumental in reaching the correct diagnosis.

Several different bacteria may be implicated, and a wide variety of organisms have been reported in previous series, including *Pseudomonas* in heroin addicts. *Str milleri*, however, has not been reported. An association with sternoclavicular joint sepsis and diabetes has also been noted,³ and one of our patients was diabetic and the other two receiving steroids, which may have contributed to their susceptibility to the infection.

Sternoclavicular joint sepsis must be included in the differential diagnosis of atypical upper anterior chest pain. A wide variety of organisms may be implicated, the signs may be minimal, and conventional radiographs are often unhelpful. Tomography and scintigraphy are helpful, and joint aspiration

to isolate the causative organism is necessary to make the diagnosis.

We thank Professor A E Read for permission to report on his patients, and Dr Iain Watt for his help.

References

- ¹ Yood RA, Goldenberg DL. Sternoclavicular joint arthritis. *Arthritis Rheum* 1980;**23**:232-9.
- ² Linscheid RL, Kelly PJ, Martin WJ, Fontana RS. Monarticular bacterial arthritis of the sternoclavicular joint. *JAMA* 1961;**178**:421-2.
- ³ Teleisnik J, Peterson LFA, Martin WJ. Monarticular bacterial arthritis of the sternoclavicular joint due to *Diplococcus pneumoniae*: report of case and review of the literature. *Proceedings of the Staff Meetings of the Mayo Clinic* 1962;**37**:582-5.

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Letter from . . . Chicago

Burning up the files

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From time to time the files used in preparing these letters grow so bulky, bulging with reprints and countless other scraps of paper, that the only solution is to take whole folders and throw them in the fire. They give but little heat, but at least they make the living room look a little less like the famous library of Alexandria.

A prime candidate for such unceremonious treatment is the collection on compulsory postdoctoral education. Not that doctors would be expected to be anything but perpetual students. But sometime in the mid-'seventies, as I noted earlier (29 July 1978),¹ the process of learning was formalised, apparently to satisfy consumer demand and fend off the threat of periodic relicensure by examination. Within a few years many states legislated arrangements by which doctors would receive credits for going to lectures. Relicensure would be conditional on the doctors certifying that they had satisfied the prescribed requirements; and the licensing departments, like the Internal Revenue Service, were to conduct random audits to make sure that nobody had cheated and cut classes.

These arrangements proved to be an immense success. Within a short time they gave rise to a profitable industry, with a potential market of some \$2 billion a year. Everybody set up continuing education programmes, the hospitals, the schools, the medical societies, and soon more than 20 000 courses became available, ranging from brief local meetings to luxury cruises abroad. According to reports some institutions earned up to \$50 000 from three-day seminars attended by 500 doctors. Enterprising faculty members were always on the

road with their slides; and the profits trickled down to travel agencies, cruise organisers, audio and video tape manufacturers, and producers of computer software.

Not surprisingly, this compulsory commercialised instruction was viewed with disgust by many members of the profession. But then these were the difficult consumerist antidoctor days of the early 'seventies, when it was widely predicted that within 10 years periodic recertification would be a reality. "The public is demanding more accountability from the doctors," was the wisdom of the time; and everybody seemed resigned to the fact that the era of lifetime licensing was over and that the profession had lost control of the education of its members. It was also noted that what had begun as a voluntary educational programme leading to no more than a plaque on the wall had been seized on by hospitals, medical societies, and eventually the licensing bodies, and made into a mandatory requirement. Some doctors wrote irate articles about stamping out compulsory education. Others composed clever Socratic dialogues about the meaning of different types of credits. But most doctors fell into line, so that it became a matter of course to sign in at conferences and then file away the certificates for the unlikely possibility of an audit.

Probably nobody was really hurt by compulsory education. Indeed, many more lived on it. It became just another formality, like saving receipts for the income tax. But this year something unexpected happened in Springfield, in the last wild days of the Illinois legislature, when all the bills that had lain dormant in committee suddenly emerge on the floor so that even the legislators cannot keep up with what is going on. Bills abolishing continuing education as a requirement for licensure were introduced in both houses. They passed. A multimillion industry may have been irreparably harmed—at least in this state. Some professors may have to stay home. Some continuing education experts may become unemployed or will need to be retrained for other jobs. And I will take a chance

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