

3. CERVICAL EPIDURAL ABSCESS PRODUCING ACUTE PARAPLEGIA

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Pyogenic spinal epidural abscess was one of the subjects presented in the King Edward VIII Hospital Silver Jubilee Number of this *Journal*.¹ The authors quoted articles which stressed the rarity of the condition, and the extreme rarity of localization of the abscess in the cervical region.²

Early diagnosis is of the utmost importance because the slightest delay in instituting treatment may, if the patient survives, result in permanent and crippling disability.

CASE REPORT

A 17-year-old male was admitted to the New Somerset Hospital on 24 May 1961 with the provisional diagnosis of 'pneumonia complicated by acute retention of urine'.

Cough and interscapular pain had been present for 2 weeks. Five days before admission both these symptoms became much worse, and he felt too ill to get out of bed. Four days before admission he was unable to urinate and had severe lower abdominal pain; the following day he could not move his legs.

He was extremely ill with a pyrexia of 103.5°F. and was sweating profusely about the head and neck, while the skin was absolutely dry below the level of the clavicles. The entire abdomen was swollen owing to distension of the intestine and bladder. Crepitations were present at the base of the left lung.

The neck was stiff and extremely painful on movement (both on attempted forward and lateral flexion) and the cervical and upper thoracic spine was very tender on palpation. There was no spinal deformity.

Both legs were paralysed. The left plantar reflex was extensor and the right equivocal. There were no definite sensory abnormalities, but the patient was too ill to cooperate in the examination, so this point could not be confirmed with certainty.

He was catheterized and an indwelling catheter was left *in situ*. The urine was normal apart from 2-plus albuminuria.

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Special Investigations

The white-blood count was 24,000 per c.mm.

X-ray of the cervical and thoracic spine was normal. There was mottling at the left lung base.

At this stage the provisional diagnosis of *acute epidural abscess* was made. A blood culture was taken in case pyaemia was present, and antibiotic therapy was instituted forthwith—novobiocin, 500 mg. 12-hourly, and oxytetracycline, 250 mg. 8-hourly, both intramuscularly. Arrangements were made for transfer to Groote Schuur Hospital for urgent myelography.

The cerebrospinal fluid was turbid, with 200 mg. per 100 ml. of protein and 3-plus globulin.

Subsequent Progress

Within the next 18 hours abnormal neurological signs appeared in the arms, viz. absent biceps jerks and slight weakness of the shoulders. Patchy hypoalgesia was definitely present on the legs, and both plantar reflexes were now unquestionably extensor.

The myelogram (performed by Mr. J. P. van Niekerk) by the cisternal route indicated a block at the level of the 4th cervical vertebra, and urgent laminectomy was performed. An epidural abscess was encountered and evacuated. The pus was sterile.

Subsequently the blood culture confirmed the presence of a *Staphylococcus aureus* pyaemia, and fortunately the organism was sensitive to the antibiotics which had been selected and given to the patient.

The patient's constitutional symptoms improved within a few days after operation, but the first definite evidence of neurological improvement occurred only after approximately 3 weeks. Bladder function had returned to normal by 28 June 1961. In October 1961 he was still grossly weak and ataxic, with bilateral ankle clonus, extensor plantars, and spasticity, but was beginning to walk in a walking-machine. By March 1962 he was able to walk with the aid of a stick, but was still recognizably spastic with some ataxy; however, improvement was continuing. His general health was good.

DISCUSSION

The onset of an acute paraplegia, not preceded by a fracture-dislocation of the spine, immediately suggested the possibility of acute spinal compression.

The high pyrexia, leucocytosis, and extreme tenderness of the cervicodorsal spine led immediately to the suspicion of acute epidural abscess as the aetiology of the spinal compression. The cerebrospinal-fluid abnormalities were in keeping with this diagnosis, and it was confirmed by myelography and then by laminectomy.

The positive blood culture confirmed the presence of a pyaemia. It is possible that the primary illness was a staphylococcal pneumonia, complicated by pyaemia and by an epidural abscess. This also illustrates the diagnostic (and therapeutic) value of doing a blood culture in extremely ill pyrexial patients, even if they have localizing signs in the chest or the spine.

The rarity of acute epidural abscess in the cervical region may have been overstressed. Apart from this patient, epidural abscess was present in the cervical region in 1 out of the 8 cases described by Dus.³

Weber, from a survey of reported cases, observed that the mortality rate of epidural abscess was 42.1%.⁴ This high figure is probably due to late diagnosis and late treatment.

Most of the patients treated at an early stage recover completely, or show only slight residual neurological signs. The surgical principle that 'pus, if present anywhere, must be drained' is of particularly vital importance in the epidural space—failure to do so promptly can cause not only death, but also permanent neurological damage.

SUMMARY

1. A case of acute epidural abscess of the cervical spine is described. The presenting features were pyrexia, respiratory symptoms and signs, then retention of urine, followed by acute paraplegia.

2. The diagnosis was suspected on general principles, and was aided by noting the exquisite tenderness of the cervical and upper dorsal spines. Cisternal myelography confirmed the presence of a spinal block, and laminectomy led to the evacuation of an epidural abscess. Neurological improvement has been progressive, and the patient was walking a year later.

3. Although the pus was sterile (24 hours after the institution of antibiotic therapy) the pre-operative blood culture was positive for *Staphylococcus aureus*. This illustrates the potential diagnostic usefulness of taking a blood culture in a seriously-ill pyrexial patient, even if there are localizing signs in the chest or spinal column on which to focus attention.

4. When a patient presents with acute paraplegia accompanied by constitutional features, one should immediately suspect and investigate the possibility of acute epidural abscess, because only early diagnosis and treatment will avert death or permanent disability.

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