

Neurological symptoms 27 years after tiger bite

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Attacks by big cats on humans often result in severe spinal injuries. Such assaults are well described by zoologists, but only two reports have ever appeared in medical publications^{1,2}.

CASE HISTORY

A man aged 49 gave a six-month history of pain, numbness and weakness in the legs. More recently his right arm had become weak and he had developed tingling in the hands. 27 years earlier he had been attacked from behind by a Bengal tiger in a safari park. The tiger had grabbed him by the neck and tried to sever his spinal cord with its teeth. Seven tranquillizer darts were required to down the tiger, which then fell on top of the injured man. He had since been troubled by neck stiffness, but the neurological symptoms were of recent onset. On this admission his right arm and both legs were weak (4/5 on the MRC scale) with normal tone and reflexes. Pin-prick and light touch sensations were reduced over the left calf and foot. Proprioception was impaired to the knees. Lhermitte's sign was present. Magnetic resonance studies showed tethering of the posterior aspect of the cord and a small syrinx at C5 (Figure 1). He underwent C4-6 laminectomies and dural opening. The adherent cord was dissected off the dura and the dura was closed. Magnetic resonance imaging three months later showed cord detethering but persistence of the syrinx (Figure 2). The weakness in his right arm, the tingling in his hands and Lhermitte's phenomenon disappeared.

COMMENT

Tigers hunt alone by sneaking up on their prey and then charging from behind. It is for this reason that eye contact or large eye spots on the back of a cap deter them from attacking. The most dangerous are the young adults seeking

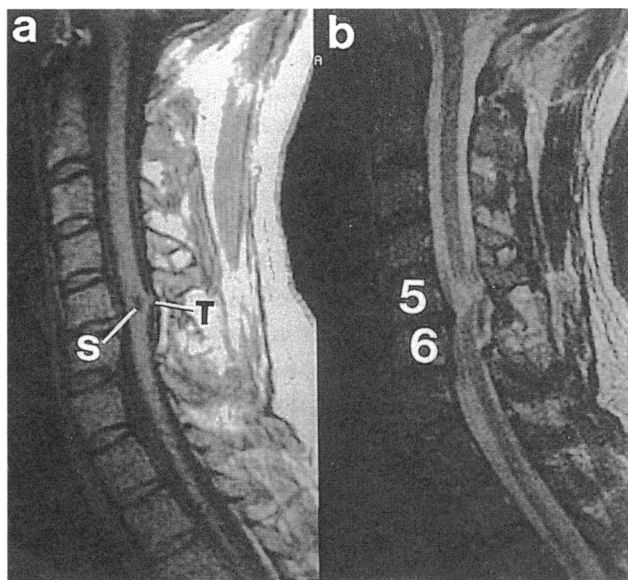


Figure 1 Preoperative magnetic resonance images: (a) T1-weighted and (b) T2-weighted sagittal images showing a small syrinx (S) and tethering of the cord (T) at C5

to establish a territory and tigresses protecting their young. Tigers bite the victim's neck to sever the cord, or the throat to cause suffocation.

Only two citations of tiger assaults were found in Medline, both describing acute neck injuries. Kohout *et al.*¹ reported fractured C1 and C2 vertebrae, cord laceration and vascular and pharyngeal injury in a 33-year-old man. Wiens and Harrison² reported a 28-year-old man with fractured cervical spine and pharyngeal injury. Our case emphasizes two long-term complications that may result—syrinx and cord tethering.



Figure 2 Postoperative magnetic resonance images: (a) T1-weighted and (b) T2-weighted sagittal weighted scans through the cervical spine. The syrinx (arrow at C5 level) persists but the tethering has resolved

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Syrinx was an Arcadian virgin who, when pursued by Pan, turned into a reed, from which Pan made his pipes. She gave her name to the tubular cavitation of the spinal cord. Post-traumatic syrinx is well described in patients with delayed neurological deterioration after spinal cord injury^{3,4}. The period from injury to onset of symptoms is up to 33 years³. Proposed pathophysiological mechanisms include the slosh theory, the suck theory and coalescence of microcysts⁴. There is probably no benefit in operating on a patient with a small post-traumatic syrinx⁴.

Cord tethering has only occasionally been reported as a late complication of spinal trauma^{5,6}. Repeated abnormal movement at the damaged region and the spinal canal stenosis occurring with age might explain its delayed onset⁶. Once tethering occurs, it impairs cord function by mechanical distortion or ischaemia⁵. Detethering has been reported to improve the clinical condition^{5,6} and in our

patient it abolished Lhermitte's sign and the upper limb symptoms.

REFERENCES

- 1 Kohout MP, Percy J, Sears W, Yeo JD. Tiger mauling: fatal spinal injury. *Aust N Z J Surg* 1989;**59**:505-6
- 2 Wiens MB, Harrison PB. Big cat attack: a case study. *J Trauma* 1996;**40**:829-31
- 3 Hida K, Iwasaki Y, Imamura H, *et al.* Post-traumatic syringomyelia: its characteristic magnetic resonance imaging findings and surgical management. *Neurosurgery* 1994;**35**:886-91
- 4 Rossier AB, Foo D, Shillito J, *et al.* Posttraumatic cervical syringomyelia. *Brain* 1985;**108**:439-61
- 5 Berrington NR. Posttraumatic spinal cord tethering. *J Neurosurg* 1993;**78**:120-1
- 6 Ragnarsson TS, Durward QJ, Nordgren RE. Spinal cord tethering after traumatic paraplegia with late neurological deterioration. *J Neurosurg* 1986;**64**:397-401

Neck pain with fever

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Cervical osteomyelitis is an uncommon but wholly treatable condition; the diagnosis is frequently delayed and is considerably aided by magnetic resonance imaging.

CASE HISTORY

An Afro-Caribbean man aged 71 was referred by his general practitioner because of inability to cope at home. He had an indwelling urinary catheter and was complaining of rigors which had not improved despite a course of trimethoprim. He also complained of back and shoulder pain for which he had been given a non-steroidal anti-inflammatory drug. Two weeks earlier he had been discharged from hospital with an indwelling catheter after a transurethral prostatic resection. Postoperatively a trial without catheter had been unsuccessful on two occasions. He was an insulin-requiring diabetic and was being followed up by a community psychiatric nurse because of recurrent bouts of depression.

On admission he was pyrexial and the catheter was draining cloudy urine. Although he complained of pain in the right shoulder there was no local tenderness or

restriction in movement. Haemoglobin was 8.3 g/dL and white cell count $16.2 \times 10^9/L$ with neutrophilia. Urine culture grew *Pseudomonas aeruginosa*. Blood cultures were sterile. He was rehydrated with intravenous fluids, given a single dose of intravenous gentamicin and had his urinary catheter changed. Clinically, initial progress was good; but on the third day after admission there was a spike in temperature to 38°C. Blood cultures at this stage grew *Staphylococcus aureus* and he responded well to a 10-day course of intravenous flucloxacillin with rapid loss of pyrexia. However, he continued to complain of persisting pain, first in the right shoulder and then in the cervical area, despite an increase of his analgesia from regular paracetamol and codeine to transcutaneous nerve stimulation (TENS) and oral opioids. There was no evidence of cervical myelopathy or restriction in any joint movements. Cervical spine X-rays taken at this time were reported as showing only minor degenerative disease. A full biochemical profile including tumour markers was normal.

Over the next month, his clinical condition steadily deteriorated, with recurrent bouts of pyrexia and rigors. Repeat blood and urine cultures were negative; and there was no response to empirical treatment with cephalosporin antibiotics. At this stage the erythrocyte sedimentation rate (ESR) was 72 mm/h and C-reactive protein (CRP) 75 mg/L; while a myeloma screen was negative. The patient became more anaemic, requiring a 2-unit blood transfusion, and complained bitterly of worsening neck pain. High-dose opioids were used for analgesia, as well as topical capsaicin cream. Diazepam was added for the associated cervical muscle spasm and dothiepin was given at night. Despite these measures, the pain severity was such that the patient was unable to sleep and he became profoundly depressed

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