Parapharyngeal abscess: a diagnosis not to miss

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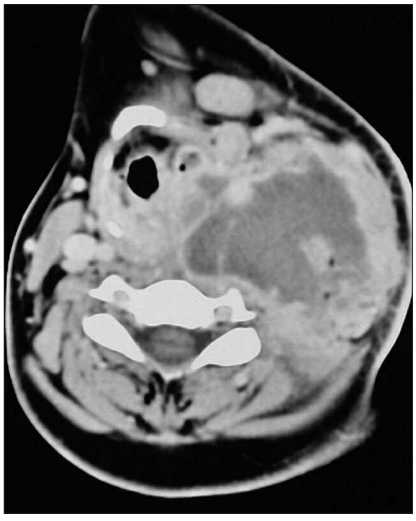
INTRODUCTION

Parapharyngeal abscess is uncommon. Over 60% of them arise from tonsillitis or quinsy, and the remainder from periodontal infections, particularly of the lower third molar. The association with conditions that affect immunity and resistance to infection such as diabetes or acquired immune deficiency syndrome (AIDS) should also be remembered.

Because of the close proximity of the parapharyngeal space to the carotid sheath and other major structures, parapharyngeal abscess has several potentially life-threatening complications associated with it, such as internal carotid artery rupture and mediastinitis.

This article reports a case in which a delay in the diagnosis may have contributed to the development of one of its rare complications.

Figure 1. Computed tomography scan showing a large left parapharyngeal abscess.



CASE REPORT

A 15-year-old girl presented with a 3-week history of sore throat, which had been unresponsive to penicillin. She had also recently developed a painful swelling in the left side of the neck. On examination she had tonsillitis and a large tender mass in the jugulodigastric region on the left side. This was hard and non-fluctuant with no overlying cellulitis or erythema. Ultrasound confirmed cervical lymphadenitis and she was commenced on intravenous antibiotics.

Despite an initial improvement in her symptoms, on the third day after admission she remained pyrexial and developed a left spastic torticollis. A computed tomography (CT) scan was performed which showed a large parapharyngeal abscess (*Figure 1*). This was incised and drained immediately and she was discharged home 4 days later having made an excellent recovery.

A week later, however, she was reviewed in clinic and was found to have an ipsilateral Horner's syndrome. After 6 months, this has yet to recover (*Figure 2*).

DISCUSSION

The parapharyngeal region is a potential space containing loose areolar tissue, lying just lateral to the pharynx and medial to the carotid sheath and pterygoid muscles. Infection in this area can extend into the retropharyngeal space and anteriorly into the submandibular region. The cervical part of the sympathetic trunk runs free in this space, in front of the prevertebral fascia and posterior to the carotid sheath.

Figure 2. Fifteen-year-old girl with left Horner's syndrome.

It is easy to see how damage to the sympathetic trunk can occur in paraphayrngeal infections, therefore leading to Horner's syndrome. However, interruption in the sympathetic pathway from the brainstem to the pupil at this level is typically caused by neoplastic lesions such as thyroid carcinoma or the result of thyroid or carotid surgery.

The clinical features normally associated with Horner's syndrome are ptosis and failure of the pupil to dilate, which were both demonstrated in this patient. Occasionally, upside-down ptosis or elevation of the lower lid can occur which results in apparent enophthalmos. Facial anhydrosis may also be found, as well as conjunctival injection resulting from parasympathetic vasodilatation.

In the case described, it is thought unlikely that the injury was caused during the operation, because only minimal finger dissection was used to open up the abscess. The delay in diagnosis was presumably a contributory factor as one can appreciate from the computed tomography (CT) scan (*Figure 1*), which demonstrates a large abscess deep to sternomastoid with significant compression and displacement of the oropharynx. It

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therefore raises the question of whether ultrasound is reliable in this situation.

Although there are no studies directly comparing the use of ultrasound *vs* CT scanning in the diagnosis of parapharyngeal abscesses, the sensitivity of CT scanning is approximately 90% with a false positive rate of 13% (Lazor et al, 1994). As one can assume that ultrasound would not improve these figures, it would seem that the advantages of ultrasound over CT (e.g. more easily obtained, no radiation exposure) are outweighed by the fact that an inaccurate result may risk a delay in the diagnosis, which could lead to potentially lethal complications (Gaglani and Edwards, 1995).

Paediatric deep neck space infections are associated with an even higher complication rate. In a review by Flanary and Conley (1997), 30% of children developed airway obstruction, with a significantly higher rate seen in children under the age of 36 months.

CONCLUSIONS

The possibility of deep neck space infections such as parapharyngeal abscess should be considered in the management of any acute infective neck swelling. CT scanning is probably the most useful diagnostic aid, particularly in children where fine needle aspiration of the abscess is more difficult (Sichel et al, 1996). Surgical intervention should be based on the clinical status of the patient and the failure of response to appropriate intravenous antibiotics (Gidley et al, 1997). HM

Flanary VA, Conley SF (1997) Pediatric deep space neck infections: the Medical College of Wisconsin experience. *Int J Pediatr Otorhinolaryngol* **38**(3): 263–71

Gaglani MJ, Edwards MS (1995) Clinical indicators of childhood retropharyngeal abscess. *Am J Emerg Med* **13**(3): 333–6

Gidley PW, Ghorayeb BY, Stiernberg CM (1997) Contemporary management of deep neck space infections. *Otolaryngol Head Neck Surg* **116**(1): 16–22

Lazor JB, Cunningham MJ, Eavey RD, Weber AL (1994) Comparison of computed tomography and surgical findings in deep neck infections. *Otolaryngol Head Neck Surg* **111**(6): 746–50

Sichel JY, Gomori JM, Saah D, Elidan J (1996) Parapharyngeal abscess in children: the role of CT for diagnosis and treatment. *Int J Pediatr Otorhinolaryngol* **35**(3): 213–22

IN THE PUBLIC'S VIEW...

Let's clone again, like we did last winter

When cold fusion burst onto the front pages in 1989, we happened to be staying with a friend who is a research physicist. Cold fusion, if it happened and could be controlled, would solve the world's energy problems. All the electricity you want from a beaker of cold water and a few strips of precious metals. The media went mad, as did the price of the precious metals. Reading the newspaper reports, I was pretty excited. I was looking forward to a weekend of speculation, with someone who really understood, about how the world was about to change.

'So what do you think?' I asked.

'It's an artefact: that much energy would produce so many neutrons that the experimenters would be dead.' End of conversation.

It was indeed an illusion, the result of poor scientific method, and partly caused by scientists tinkering outside their own discipline. The creators of the illusion were physical chemists, not nuclear physicists. However, the sort of knowledge needed to understand what they were doing, and why what they were doing could not work, was pretty deep and certainly not in the public domain. The media can't really be blamed for their reaction. And, after all, other teams didn't just dismiss the results out of hand. Other teams tried to replicate the work and failed. It took 6 months for the story to come off the boil.

At the turn of this year, the media went equally bonkers about something that from the outset was plainly either extremely misguided science or – and I think more likely – a publicity stunt. A spokeswoman for a cult headed by a man who claims he was abducted by aliens, where he was gifted the services of a number of beautiful women while learning the secret of life, announced that the first human clone was due to be born. Acres of newsprint followed.

The same old talking heads from both sides of the religious and ethical fences said their pieces and were put in the box for next time. That last sentence was taken from the last time (*In the Public's View...* January 2002). This time the media should have known better. It's now common knowledge that Dolly the sheep was a difficult experiment. It's also common knowledge that respected scientific laboratories are trying, with little success, to clone humans for therapeutic reasons. They have vast resources and there will be immense rewards, both personal and financial, for success.

How could anyone believe success was first achieved by a bunch of nutcases, via their company Clonaid, who think that all life was placed on Earth 25 000 years ago by a superior intelligence? The Raelians' aim (they are called Raelians after their leader, who took the name Rael after his experience with the beautiful women) is immortality through cloning: old minds being serially downloaded into their specially grown clones.

Doubtless the Raelians' coffers are now overflowing with donations from rich deluded people desperate to deny their own mortality. Most of those donations are probably in dollars. Acres of free advertising in our media may have improved the donations in pounds sterling. HM

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