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Mediastinitis - a rare complication of a peritonsillar abscess

T. R. NIELSEN, M.D.*, F. CLEMENT, M.D.*, U. K. ANDREASSEN, M.D.†

Abstract

We report a case of mediastinitis, in an otherwise healthy 25-year-old man, resulting from a peritonsillar abscess with extension through the parapharyngeal and retropharyngeal spaces.

In our case the patient was primarily treated with needle aspiration, a method described in many publications as a safe alternative to incision and drainage.

We emphasize that for peritonsillar abscesses a tonsillectomy or wide incision and drainage, instead of needle aspiration, might prevent the extension of the condition, thus preventing serious complications.

Key words: Peritonsillar abscess; Mediastinitis; Parapharyngeal abscess

Introduction

Deep neck space infections have declined dramatically since the introduction of antibiotics. The morbidity of this disease however is still high, which necessitates early diagnosis and appropriate treatment.

Dental sepsis and tonsillitis are the commonest causes of deep neck infections, which are peritonsillar, parapharyngeal and retropharyngeal abscesses (Crewson, 1973; Wenig *et al.*, 1984). We would like to present a recent case of deep neck infection and mediastinitis, which developed as a complication of a peritonsillar abscess, in spite of needle aspiration and antibiotic treatment.

Case report

A 25-year-old man from the former Yugoslavia was referred with a suspected peritonsillar abscess. The patient was otherwise in good health.

The patient had been taking ampicillin 12 mg/kg/day, for seven days, as prescribed by a dentist on the suspicion of infection in a wisdom tooth. The day before admission the patient had increasing pain and swelling in the throat and high fever.

On examination the patient appeared moderately toxic. Both tonsils were enlarged and covered with exudate. There was a peritonsillar swelling on the left side and large-bore needle aspiration revealed a small peritonsillar abscess, but only 0.5 ml of pus could be aspirated. Cultures from the aspirated material grew group F *Streptococcus* and *Bacteroides* species sensitive to penicillin and metranidazole. Blood tests showed leucocytosis but were otherwise normal and blood-cultures were negative. The patient was put on intravenous treatment with penicillin G 44 mg/kg/day and metronidazole 23 mg/kg/day. Soft-tissue radiographs of the neck, taken three days after admission, revealed air in the soft tissues and thickening of the prevertebral soft tissues, consistent with a parapharyngeal abscess. A chest X-ray showed some opacity of the right lung field. A tonsillectomy was performed and on the left side large parapharyngeal and retropharyngeal abscesses were drained.

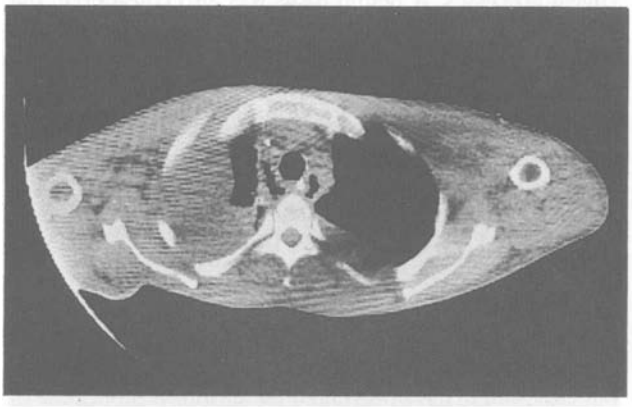

FIG. 1

CT scan of the chest showing massive pleural effusion most pronounced on the right side, widened mediastinum and air on both sides of the midline.

The day after the tonsillectomy the patient deteriorated, with shallow respiration, fast pulse and decreased conscious level. Conventional radiographs and CT scan of the chest revealed a large right-sided pleural effusion, atelectasis and mediastinitis (Figure 1).

The patient was transferred to a thoracic department. A thoracotomy and an exploration of the neck were performed. Eleven hundred ml of pus, in total, was found in the pleural cavity, along the oesophagus and inside the carotid sheath on the left side, continuing up to the previously treated parapharyngeal and retropharyngeal abscesses. The patient had a tracheostomy and was later returned to the ENT department. The patient made a full recovery. The tracheostomy was successfully reversed and he was discharged 22 days after admission.

From the Departments of Otolaryngology, Hillerød Hospital* and Gentofte Hospital,† University of Copenhagen.
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Discussion

Acute tonsillitis is a common infection in which Group A beta-hemolytic *Streptococcus* has been recognized as the most important bacterium, followed by, more rarely, groups B, C or G and others (Snow *et al.*, 1991; Brodsky, 1993). The most common complication of acute tonsillitis is the development of a peritonsillar abscess (Wenig *et al.*, 1984; Brodsky, 1993; Cliven *et al.*, 1993), and more rarely parapharyngeal and retropharyngeal abscesses (Stage and Bonding, 1988; Cliven *et al*, 1993). It is apparently uncommon for deep neck space infections to extend into mediastinitis (Wenig *et al.*, 1984). A peritonsillar abscess, which is normally unilateral, develops in the peritonsillar space between the capsule of the tonsil and the superior constrictor muscle. The infection can extend from here through the superior constrictor muscle into the parapharyngeal and retropharyngeal spaces, into the carotid sheath and down into the mediastinum (Scott and Stiernberg, 1993).

Mediastinitis as a complication to deep neck infection has only been described in a few cases and mostly in patients with concurrent diseases such as diabetes mellitus or agranulocytosis, or in drug addicts (Wenig *et al.*, 1984; Scott and Stiernberg, 1993).

Our patient most probably had acute tonsillitis as the cause of the peritonsillar, parapharyngeal and retropharyngeal abscesses. A dental focus was also considered, but radiographic examination of the teeth was negative and a dental examination only revealed pericorinitis of the left lower wisdom tooth. Large-bore needle aspiration is an accepted procedure in treating peritonsillar abscesses (Brodsky, 1993; Scott and Stiernberg, 1993). The method is well described and has become an alternative to the classical incision and drainage or tonsillectomy à chaud (Herzon, 1984; Spires *et al.*, 1987; Jensen, 1990). Puncture is performed both by ENT-surgeons and non-specialists (Ophir *et al.*, 1988). When using needle-aspiration one should be aware of the risks of a higher incidence of residual and recurrent disease compared to incision and drainage (Wolf *et al.*, 1994).

Whether a primarily performed tonsillectomy à chaud in our case, would have prevented the serious complication of abscesses and mediastinitis is unknown, but it would certainly have given better surgical drainage.

We therefore stress that although treatment with needle aspiration and antibiotics is normally sufficient in cases of peritonsillar abscess, one should always be aware of the danger of progression to a parapharyngeal and/or retropharyngeal abscess and mediastinitis. If there is no significant improvement after needle-aspiration and relevant antibiotics, then surgical intervention should take place within 48 hours, as the complications which occurred in our patient are commonly avoidable (Scott and Stiernberg, 1993).

With a prolonged history, as in our patient, it might be preferable to bypass the needle aspiration and perform a primary tonsillectomy à chaud or wide incision and drainage, which provides, without doubt, a much better surgical drainage than aspiration.

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Address for correspondence:
Torfinnur Rubek Nielsen,
Department of Otolaryngology,
Hillerød Sygehus,
Helsevej 2,
DK-3400 Hillerød,
Denmark.