Adult Retropharyngeal Abscess

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ABSTRACT

Introduction

The proportion of adults suffering from retropharyngeal abscess (RPA) has increased in comparison to children.

Materials and methods

Eight cases of adult retropharyngeal abscess were reviewed. The diagnostic criteria were radiological evidence of widening of pre-vertebral soft tissue shadow and presence of pus in the swelling.

Results

Sore throat, fever, muffled speech, painful swallow and stiffness of the neck were common presenting symptoms. Lateral X-ray of the neck was diagnostic. Commonest organism isolated was Streptococcus pyogenes. Airway obstruction was the commonest complication.

Discussion

Most of the patients had history of trauma prior to the development of RPA. CT scan has an important role in planning the management in addition to lateral X-ray of the neck. Transoral surgical drainage in association with antibiotics is the treatment of choice in abscesses confined to the retropharyngeal space.

Conclusion

Tuberculosis is no longer the commonest cause of adult retropharyngeal abscess. Sore throat or dysphagia, disproportionate to clinical findings in the throat should arouse suspicion of RPA. Early intervention with antibiotics reduces the chances of the development of complications.

Keywords

Retropharyngeal abscess, Deglutition disorders, Esophagus/Radiography

Retropharyngeal abscess (RPA) is described as uncommon but potentially lethal infection usually affecting the paediatric age group. More than 90% of cases occurred in children below the age of six years.[1] Availability of antibiotics and improvement in medical care has brought down the incidence of RPA over the years. Its clinical presentation and microbiology have also changed.[2] There has been a gradual shift in this disease from children below 6 years of age to older children and adults.[3,4] Numerous articles and textbooks of Otolaryngology and Emergency Medicine describe the presentation, management and complications of RPA in children. However, there has been a paucity of information on the subject in case of adults.[5] Eight cases of adult RPA were analysed for this article along with review of the available literature.

Materials and Methods

A retrospective review of eight cases of adult RPA admitted from 2007 to 2013 was performed. Diagnoses were based on the radiological evidence of widening of the prevertebral soft tissue shadow to at least more than the width of the corresponding cervical vertebra[6] and demonstration of pus, either drained surgically or aspirated by wide-bore needle aspiration. Age, sex, history, clinical presentation, methods of diagnosis,

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microbiology, treatment modalities, need for airway intervention, complications and outcome of the cases were reviewed.

Results

A total of eight adult patients who were admitted under the first author in a tertiary care hospital between 2007 and 2013 were reviewed. Five were males and three females. The mean age was 44 ± 15.9 years with a range of 18 to 72 years. During the same study period, a total of 13 paediatric RPA patients were encountered. Thus, the percentage of adults among RPA patients was about 38%.

Six patients presented with sore throat, fever, muffled speech, odynophagia without airway obstructive symptoms. Two patients had partial airway obstruction but its onset was preceded by symptoms of sore throat, dysphagia and neck pain for a few days.

Aetiologically, the RPA was divided into idiopathic (with no prodrome / precipitating illness), secondary to preceding illness or traumatic. Traumatic cases were sub-classified into foreign body ingestion or other trauma to neck and pharynx. Four of the patients in this series had history of previous trauma. Two cases were secondary to impaction of foreign body in the throat, one had undergone spinal surgery with screw-plate fixation of the cervical vertebrae (iatrogenic trauma)and one patient developed RPA following attempted suicide by hanging. Two of the abscesses were tubercular in nature. One patient had a history of upper respiratory tract infection while a definite cause could not be established for another patient.

The most common presenting signs were fever, torticollis, pharyngeal mucosal congestion and pharyngeal swelling. Lateral x-ray film of the neck showed widening of the pre-vertebral soft tissue space in all cases. CT scan was done in five cases. Treatment consisted of surgical drainage or aspiration in all cases and IV antibiotics. Tracheostomy was done in two cases which presented with difficulty in breathing. The single most common organism isolated was Streptococcus pyogenes followed by Klebsiella species. Antibiotics were chosen empirically in various combinations of ceftriaxone, co-amoxiclav, amikacin and metronidazole.

One case of tubercular RPA required repeated aspirations with wide bore needle and one patient with simultaneous involvement of the parapharyngeal space required external drainage.

Airway obstruction was the main complication observed in our patients. There was no death in our series.

Discussion

Retropharyngeal abscess (RPA) is usually described as a disease secondary to suppurative lymphadenitis in infants suffering from upper respiratory infection, pharyngitis and otitis media. Regression of retropharyngeal lymph nodes in children may account for the low incidence of RPA in adults.[7] Available studies have documented an overwhelming majority of the patients to be infants and reported the incidence of RPA upto 100% in children below the age of six years. [8,9,10,11]

The declining incidence of RPA was reported since 1970s but the proportion of affected adults was found to be on the rise.[3,4,5] A literature search from 1970 to 1995 produced reports on 51 cases of RPA in adults.47% of the RPAs, in a retrospective study between 1985 and 1996, were adults (n=19).[4] Our report on eight cases of RPA also underscores the prevalence of the disease in adults with them forming 38% of the total RPA patients. 64% of this series were males. The male predominance have also been reported in other studies.[4,5]

RPA in adults has traditionally been associated with tuberculosis of cervical spine.[12] Although tuberculosis is common in our country, only two of the eight adult RPAs (25%) in this series were tubercular in origin.

Recent reports suggest URTI,[3] trauma,[2] foreign body ingestion,[3,13] or odontogenic infection[13] as predisposing factors for RPA in adults. Goldenberg et al. (1997) found most of the RPAs in adults to be of idiopathic origin.[4] 50% of the patients in our series had history of some form of trauma prior to the development of RPA. None of the patients in this series was immunocompromised

due to HIV infection. Two patients had pre-existent diabetes.

Majority of patients presented with sore throat (100%), fever (88%), dysphagia (88%), torticollis (75%) and muffled speech (63%). The presenting symptoms were largely the same as those in the published literature.[4,5] Only 25% of the patients presented with symptoms of airway obstruction.

63% of the patients presented with a pharyngeal bulge but sometimes it is very difficult to examine the pharynx or there may not be any visible swelling at all on physical examination. Tannebaum (1996) reported a series, where only 37% of the adult RPAs had visible swelling on the posterior pharyngeal wall. Negative physical examination does not in any way rule out RPA.[5]

Lateral neck X-rays were taken in all cases and widening of the pre-vertebral soft tissue shadow was considered to be diagnostic (Fig. 1). Wholey et al. measured the normal RP diameter on lateral X-ray studies in 1954. He concluded that measurements greater than 7 mm at C2 and 14 mm (children) or 22 mm (adults) at C6 are abnormal and strongly support the diagnosis of RPA.[14] A lateral radiograph is considered diagnostic of a RPA, if the retro-pharyngeal space, measured from the posterior wall of the pharynx to the anterior border of the C2 is widened to more than the width of the cervical vertebra.

Fig.1. Lateral radiograph of neck showing widening of the prevertebral soft tissue shadow with loss of lordosis of the cervical spine

Other suggestive radiological signs include gas in the prevertebral tissue, air-fluid level (Fig. 2), evidence of a foreign body and loss of the normal curvature of the cervical spine (Fig. 1). Widening of the retropharyngeal space can be caused by retropharyngeal cellulitis or oedema or may even be an artefact due to over-flexion of the neck while filming.[4] A CT scan play an important role in differentiating retropharyngeal cellulitis from an abscess and in defining its extension across fascial planes of the neck (Fig. 3).[4,5]

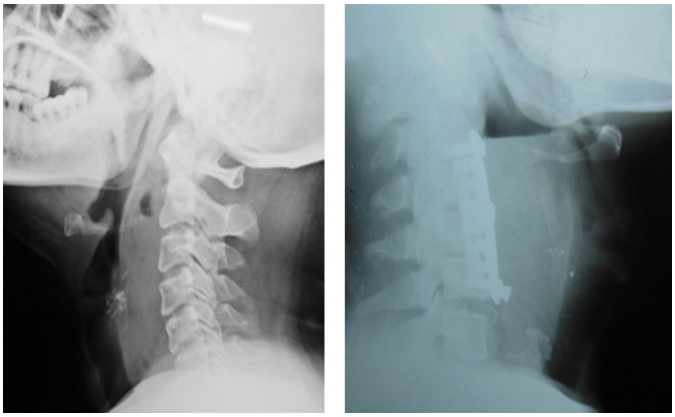

Fig. 2. Lateral radiograph of neck showing prevertebral gas shadow (left) and air-fluid level in another patient who had undergone plating and anterior fixation of C3-C6 (right)

Fig. 3. A contrast enhanced CT scan showing an abscess involving the left retropharyngeal and parapharyngeal spaces with erosion of the vertebral body

Six of the RPAs were drained by transoral incision on the posterior pharyngeal bulge under general anaesthesia (Fig. 4). One patient of tubercular RPA underwent repeated aspiration through wide-bore needle. The lone case with associated parapharyngeal space involvement was drained through external approach. Criteria for external drainage should be clinical or radiological suspicion of spread of the abscess across fascial planes to include other deep neck compartments.[4]

Fig. 4. Photograph showing a left sided pharyngeal bulge in a tracheostomised patient undergoing operation (white arrow on the left) and the incision line after evacuation of the abscess (black arrow on the right)

Pus drained from the RPAs was subjected to Gram and ZN staining and culture. Single most common organism isolated was Streptococcus pyogenes(3 out of 8) which was sensitive to Coamoxiclav (3 out of 3) and Ceftriaxone (2 out of 3). ZN stain detected presence of AFB in one sample. PCR confirmed tuberculosis in another case with negative culture. No growth was also reported in another sample. Other common organisms found in RPAs are Staphylococcus aureus, Klebsiella species and Haemophylusinfluenza.[2,3,4,5,13,15] All the cases of RPAs in this series were treated with empirical antibiotics in combinations. The culture sensitivity reports in our series suggest the choice of antibiotics in non-tubercular cases should include cephalosporin, amikacin, clindamycin and penicillin to cover various organisms including anaerobes.

None of the patients in this series died. Airway obstruction was the main complication observed in our patients which was relieved by tracheostomy.

Conclusion

Retropharyngeal abscess is usually associated with some form of trauma in adults, although tuberculosis needs to be excluded as a cause. Sore throat or dysphagia, disproportionate to pharyngeal findings in clinical examination should arouse suspicion of RPA. Early intervention with antibiotics reduces the chances of the development of complications. Airway obstruction is the commonest complication. Drainage of the abscess through the trans-oral approach is usually sufficient.

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