Case Report



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Parapharyngeal Abscess Treated with Long-Term Medical Therapy: A Case Report

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Abstract

Deep neck infections are seen even in this age of modern antibiotics, and can lead to life-threatening complications.

In this article, we are presenting our case diagnosed with parapharyngeal abscess who was cured fully with an antibiotic therapy of 6 weeks.

In conclusion, surgery can be deferred if good clinical response is obtained within 24 to 48 hours under close follow-up even significant remission is not observed with control images. However, in case the disease advances in control computerized tomography (CT), spreads to other spaces or if there are complications, surgical drainage must be employed.

Keywords: Parapharyngeal abscess, Deep neck infection, Treatment, Abscess

Introduction

Although the antibiotics are used rather frequency in the early treatment of head and neck infections, the deep neck infections are relatively frequent (1). While parapharyngeal abscesses are relatively less frequent, they can lead to lifethreatening complications including the rupture of the internal carotid artery, thrombophlebitis of the internal jugular vein or spread of the infection to mediastinum (2).

While it is accepted that the treatment for the parapharyngeal abscesses is intravenous administration of antibiotics together with surgical drainage, it has been reported in many articles published recently that intravenous antibiotic therapy alone could suffice (2-5).

In this article, we are presenting our patient who recovered completely with 6-

week antibiotic treatment despite the slow radiologic regression.

Case report

The seven-year old patient had applied elsewhere with sore throat 3 days before she applied to us. She had been discharged after treatment with 400/57 mg amoxicillin/clavulanate twice a day and 120 mg paracetamol three times a day. However, she applied to us upon development of sore throat and dysphagia. It was found in her physical examination that a swelling was present on the right side of the pharynx that created asymmetry in the air passage, and there were multiple painful lymph nodes in the neck in bilateral jugulo-digastric area, biggest 1cm in size. The systemic examination results were natural. Her body temperature was 37.2 °C. Other vital findings were stable. Laboratory tests



revealed that white blood cell (WBC) was 16.8 K/uL, sedimentation rate was 60 mm/hour and CRP was 0.24. In the contrasted neck computerized tomography (CT) study taken on the day of application, a cystic lesion 2.7x1.7cm in size and periphery retaining the contrast material was observed in the right parapharyngeal region (Figure 1-2).



Figure1. Axial plane computerized tomograpy (CT) imaging before treatment



Figure 2. Coronal plane computerized tomograpy (CT) imaging before treatment

As treatment, 4x4 MU Penicillin G IV, 2x250 mg ornidazol infusion, and 2x250 mg metamisole sodium intravenosus (IV) were started. Sore throat and dyphagia were relieved at day 1 after the start of the treatment. The body temperature did not exceed 36.8 °C in the follow-ups. Normal throat flora grew in



the culture prepared on the day of admission. In the laboratory test three days later, WBC was 12 K/uL, sedimentation rate was 50 mm/hour and CRP was 0.21. In the blood tests on day 7, WBC was 10 K/uL, sedimentation was 45 mm/hour, and CRP was 0.20. In the contrasted CT study carried out on day 7, a cystic lesion 1.6x1.4cm in size and consistent with abscess with peripheral contrasting was observed in the right parapharyngeal region (Figure 3).



Figure 3. Axial plane computerized tomograpy (CT) imaging at 7. day of treatment

Since the vital signs of the patient were stable and her complaints were relieved, the medical treatment under close follow-up was continued. In the contrasted MR images taken at day 14 of hospitalization, a lesion 10x8cm in size and consistent with abscess was observed in the right parapharyngeal area with peripheral constrating, heterogeneously hyper-intense in T2 and STIRA and isointense with muscle in T1 A (Figures 4 and 5).



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Figure 5. Magnetic resonance (MR) imaging at 14. day of treatment

The patient was discharged with oral 2x1 250 mg cefuroxime axetil prescription. Oral treatment was continued for 4 weeks. It was seen in the contrasted MR images taken following the oral treatment that the lesion had remitted fully (Figure 6).





Figure 6. Magnetic resonance (MR) imaging after treatment

Discussion

Parapharyngeal is an upside-down pyramidal space with the base sitting on the cranial base, and apex extending to the greater horn of the hyoid boner. Laretal border is made by the medial pterygoid muscle, the anterior face by mandibular ramus, the deep lobe of the parotid gland and the porterior ventricle of the digastric muscle. Medial border involves the buccopharyngeal and alar fascia; while the posterior border is made by the carotid sheath (6).

The most frequent causes of parapharyngeal abscesses include the odontogenic pharyngeal, tonsillar, saliva glands, middle ear and mastoid infections (7). Among these, the cause is dental infections in about one-thirds, and tonsillitis in about another one-thirds (8). signs and findings of The typical parapharyngal abscesses include swelling of neck, torticollis, disphagia, odinophagia, fever, trismus and lateral oropharyngeal swelling (9). The most frequent ones among these include pain, odinophagia and swelling of the neck. Fever is seen in half of the cases, and, trismus is seen in onethirds (10).

The most frequently observed microbiologic agents deep in neck infections include Streptococcus viridans, A-hemolytic Streptococci, group Haemophilus influenzae. Klebsiella pneumoniae, Staphylococcus aureus and Bacteroides (10-11). In an article published Parhiscar and Har-El, while poly-microbial culture was obtained in 62% of the patient, no growth was observed in 13% of patients (11). There was no bacterial growth seen in our case. The reason may be the use of medical antibiotherapy before sample taken time.

Computerized tomography (CT) has important place in diagnosis. Choi et al. found in their study that CT was rather useful in these 4 groups: cellulites, parapharyngeal abscess, retropharyngeal abscess and para/retro pharyngeal abscess (12). Together with this; they did not find abscess during the surgery in 25% of the patients diagnosed with abscess based on CT (12). In a study carried out by Page et al, sensitivity of CT in detecting abscess was found as 72.3% and specificity was found as 59.1% (13). In the same study, the general accuracy rate of CT was found as 68.6% (13). Nicolai et al. had published a study suggesting that CT is not very reliable in the differentiation of cellulites and abscess from edema (6).

Parapharyngeal abscesses must be considered as medical emergencies and must be treated as such. Thick needle aspiration can give negative results in viscous abscesses. Since many diverse microorganisms can be responsible for the abscessi wide-spectrum antibiotics must be started. The selected antibiotic must be effective on the possible causative organisms and can be changed based on the response or culture results (14). The surgical treatment involves the drainage of the abscess through an external cervical incision insizvon intra-orally. The cranial nerves VII, IX, X, XI or XII, internal jugular vein, or common, internal or external carotid arteries can be injured during the surgery (15). There are reports showing that anti biotherapy alone could suffice (2-5,16). McClay et al. reported in their parapharyngeal abscess series of 11 patients that they treated ten patients only



with intravenous antibiotics (16). In another study, Sichel et al. showed in their series of 12 patients with parapharyngeal abscess that medical therapy was capable of curing the parapharyngeal abscess without successfully in cases complications (including respiratory distress, septic shock or invasion to other regions) (4). In a study of Page et al., it was concluded that CT should be repeated at days 5 or 7, and the cases that the condition is continuing or progressing should be taken to surgery. However, because of the low specificity and sensitivity of CT, we think that it will be wiser to make decision for surgery not based on the appearance in control CTs, but based on the clinical conditions of the patient.

Conclusion

decision for surgical The a approach must be made based on the clinical condition of the patient. Emergency drainage must be applied in case of airway obstruction or development of complications. Parenteral anti biotherapy must be administered to the remaining cases. Surgery can be deferred if good clinical response is obtained within 24 to 48 hours under close follow-up even significant remission is not observed with control CT. However, in case the disease advances in control CT, spreads to other spaces or if there are complications, surgical drainage must be employed. However, it must still be kept in mind that the clinical picture can be deteriorated very rapidly in pediatric patients.

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