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Case Report

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Bilateral peritonsillar abscess: a case series

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ABSTRACT

Peritonsillar abscess (PTA) is one of the most common deep neck abscesses. Unlike unilateral peritonsillar abscess, bilateral peritonsillar abscess is rather rare. We report 3 cases of bilateral peritonsillar abscess which were proven by either computerized tomography imaging or needle aspiration. One of the patients was treated with intravenous antibiotics and corticosteroid. The other 2 patients underwent needle aspiration for confirmation of diagnosis and subsequent incision and drainage. All patients were treated successfully with complete resolution. Bilateral PTA should always be considered when there is presence of bilateral peritonsillar swelling with non-deviated uvula and trismus. Despite surgical drainage being the most common management, the option of medical therapy alone may be sufficient. To the best of our knowledge, this is the first case of bilateral PTA reported being treated successfully with medical therapy.

Keywords: Peritonsillar abscess, Pharyngitis, Tonsillitis

INTRODUCTION

Peritonsillar abscess (PTA), commonly known as quinsy, is one of the most common deep neck infections.[1] It is defined as presence of pus collection in the peritonsillar space between palatine tonsillar capsules medially, tonsillar pillars, and pharyngeal constrictor muscles laterally. Anatomically, palatine tonsils are paired lymphoid organs located between palatoglossal and palatopharyngeal arches. They are covered with fibrous capsule and surrounded by loose areolar tissues which act as a pathway for blood vessels. Peritonsillar space often becomes the site for pus collection due to active infection. Since tonsillar fossa has a rich network of lymphatic drainage, infection may spread to parapharyngeal space and ipsilateral upper cervical lymph nodes.[2] Although unilateral PTA is rather common, bilateral PTA is rare.[3] Here, we describe a rare series of bilateral PTA and provide an overview of the disease.

CASE REPORT

Case 1

A 27-year-old female with background history of bronchial asthma, presented to emergency department for worsening odynophagia, dysphagia, low-grade fever, change of voice and poor oral intake for 1-week. She had been having frequent tonsillitis for more than 7 years, with 4 to 5 episodes per year. There was one episode of PTA which was treated conservatively few years prior to current presentation. There was no history of suggestive of gastro-esophageal reflux disease or allergic rhinitis.

On physical examination, the patient was alert conscious, not septic looking. Her voice was muffled but there was no respiratory distress or stridor. Her vital signs were stable under room air. There was trismus with mouth opening of 1 finger breath. Examination of oral cavity revealed bilateral peritonsillar erythematous bulge with kissing tonsils. Uvula was central and inflamed. Rigid

laryngoscopy noted swollen left arytenoid and epiglottis with pooling of saliva. Other supraglottic and glottic structures were normal. There was no medialisation of lateral pharyngeal wall or posterior pharyngeal bulge. Airway was patent. There were palpable tender cervical lymphadenopathies over bilateral level 1, level 2a and level 3, largest measuring 1×2 cm. Neck movement was good. Otherwise, other systemic examination was unremarkable.

Her full blood count on admission showed leukocytosis with raised white cell count, 16×10^9/L, neutrophil-predominant. Other blood parameters were normal. In view of rare presentation of bilateral peritonsillar swelling, IV contrast-enhanced computed tomography of neck was done to localize the site of abscess collection and to rule out extension towards deep neck spaces. There were bilateral well defined rim enhancing collection in the peritonsillar region measuring 1.2 cm×1.5 cm (left side) and 1.5 cm×2.2 cm (right side). There was close proximity within these 2 collections at the midline of the oropharynx (kissing tonsils) causing narrowing of the space. Nasopharynx and oropharyngeal were noted to have diffuse circumferential edema extending interior to left arytenoid region, obliterating left piriform fossa. There was no definite collection over the retropharyngeal and bilateral parapharyngeal space.

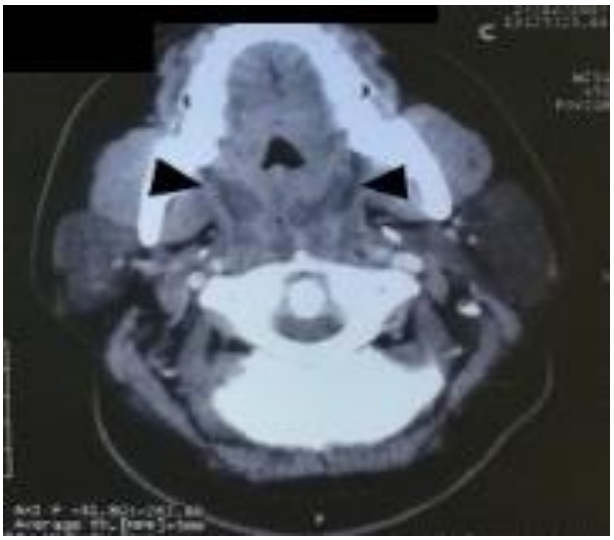

Figure 1: Contrasted computed tomography of neck, at level of oropharynx, axial view.

There were bilateral well defined rim enhancing collection (arrowheads) in the peritonsillar region measuring 1.2 cm × 1.5 cm (left side) and 1.5 cm × 2.2 cm (right side). There were close proximity within these 2 collections at the midline of the oropharynx (kissing tonsils) causing narrowing of the space.

The patient was counseled for surgical drainage of the bilateral PTA which patient refused. She was treated conservatively with IV cefuroxime 750 mg TDS, IV metronidazole 500 mg TDS, IV fluids, oral analgesics, and benzydamine hydrochloride 0.15% w/v gargle. She was also given a 3-day course of IV dexamethasone 8 mg TDS to reduce supraglottic edema. She was discharged home after 5 days of IV antibiotics, and to complete oral antibiotics for a total of 2 weeks. Supraglottic edema subsided upon discharge.

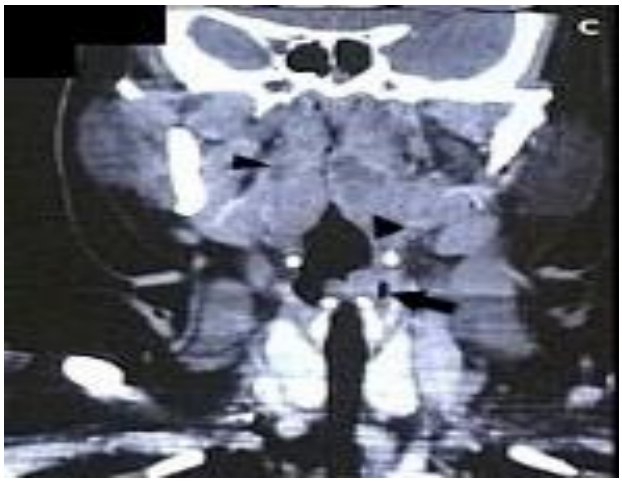

Figure 2: Contrasted computed tomography of neck, coronal view.

Diffuse circumferential edema extending interior to left arytenoid region (arrow), obliterating left piriform fossa. There were well defined rim enhanced collections in the peritonsillar region. (arrow heads).

Case 2

A 19-year-old male with no known medical history, presented to hospital for odynophagia, fever and change of voice for 1 week. There was his first episode of such presentation. These symptoms worsened over past a week.

On physical examination, he was alert and not in respiratory distress. His vital sign was stable upon admission. There was marked muffled voice but no stridor noted. Upon oral examination, there was bilateral inflamed peritonsillar swelling with bilateral grade 3 tonsils. There was trismus with mouth opening of 2 finger breath. No dental carries were noted. There was no cervical lymphadenopathy and neck movement was good. Endoscopic examination of larynx was normal. Blood investigation revealed raised white cell count of 15.98×10^9/L, predominantly neutrophils).

Aspiration was done to confirm the diagnosis of bilateral PTA. Subsequently, incision was made over bilateral superior aspect of bilateral anterior pillars. A total of 4cc yellowish pus was drained bilaterally. He was started on IV amoxicillin-clavulanic acid 1.2 g TDS and IV metronidazole 500 mg TDS. The incision site was reopened on day 2 of admission and further drained 4cc on the right peritonsillar region and 1cc on the left peritonsillar region. He was discharged well after completed 3 days of IV antibiotics. A further one week of oral amoxicillin-clavulanic acid 625 mg BD and oral metronidazole 500 mg TDS was given.

Case 3

A 23-year-old female with no known medical illness, presented with odynophagia, fever, change of voice and dysphagia for 4 days with inability to tolerate both solids and liquids. She also complained of pain over bilateral neck, which is more severe at the right. There was no previous history of recurrent tonsillitis or PTA. There was no dyspepsia or nasal symptoms. No history of foreign body ingestion was reported.

Upon examination, her voice was muffled but she was not in respiratory distress nor having stridor. Her vital signs were all normal. Oral examination revealed bulging of bilateral peritonsillar region, with swelling more over the right side. Peritonsillar mucosa was congested and inflamed. The uvula was slightly deviated toward the left. There was trismus with mouth opening of 2 finger breath. Her oral hygiene was good. There was no cervical lymphadenopathy and neck movement was good. Endoscopic examination showed slough and inflammation over the pharyngeal wall. However, there was no medialisation of lateral pharyngeal wall that suggestive of parapharyngeal extension. The supraglottis and glottis were normal and not edematous.

On admission, there was leukocytosis with total white cell count of 22.0×10^9/L, predominantly neutrophils. Diagnosis of bilateral PTA was confirmed with positive findings from aspiration over the bilateral most bulging region. Incision and drainage were done. There was 10 cc pus drained over the right and 4 cc pus over the left respectively. She was started on intravenous amoxicillin-clavulanic acid and metronidazole. Bilateral incision sites were reopened on the following day, and more pus were drained. After 3 days of intravenous antibiotics and analgesics, she was discharged with a further 1 week of oral antibiotics. Reassessment during clinic follow up after 2 weeks, revealed complete resolution of the symptoms. Tonsillectomy was counseled.

DISCUSSION

PTA is estimated to have an annual incidence of 30 per 100,000 persons.[4] All patients in this series were young adults as PTA is most common among adolescents and young adult.[5] Smokers have been reported to have increased risk of PTA.[6] The diagnosis of PTA should also be considered in children with poor oral intake and trismus as PTA has also been reported in early childhood as young as 7 months old.[7] Unlike unilateral PTA, bilateral PTA is rather rare. There were cases reported in several series which discovered incidental finding contralateral PTA in quinsy tonsillectomy with an overall incidence of 4.9%.[3]

There are two main theories which explain the progression of PTA. The most commonly accepted theory explains the progression of acute tonsillitis into abscess formation. This involves the spread of bacteria from tonsillar mucosa to peritonsillar tissue resulting in pus formation if left untreated. Another theory hypothesizes the origin of PTA from Weber glands, type of minor mucous salivary glands similar to sublingual glands which are commonly found in the superior aspect of peritonsillar space. This hypothesis suggests that chronic tonsillitis may lead to infectious fibrosis over the peritonsillar tissue and causes scarring. Subsequently, scarring of peritonsillar tissue causes ductal obstruction of Weber's gland. Recurrent untreated peritonsillar cellulitis and chronic infection of Weber glands precipitate the formation of pus collection.[8] This supports the findings of the most common location of PTA behind the upper pole of tonsils, which is the most common site of Weber gland.[9] All of the mentioned cases in this series presented with onset of symptoms for at least 1 week which were not treated during the early presentation. The relatively high prevalence of bilateral PTA in our setting may be due to the social demography of patients coming from remote areas which are less reachable to tertiary healthcare. Early initiation of antibiotics in treating bacterial cause of upper respiratory tract infection, especially acute tonsillitis, may have a role in reducing the progression into PTA.

The typical clinical presentation of unilateral PTA often involves severe unilateral odynophagia, fever, muffled voice, and fever. Trismus should always be a warning sign as it signifies the irritation of internal pterygoid muscle leading to reflex spasm. Unlike unilateral PTA which often exhibits deviation of uvula from the affected side, bilateral PTA often shows a different set of presentations. The uvula may be central, or displaced anteriorly with bilateral peritonsillar swellings. Clinical presentation can also be less severe in recurrent PTA compared to the first episode of PTA.[10] In our first case, initial assessment revealed supraglottic edema resulting from the disease. The most important initial evaluation of a patient with possible deep neck space infection should always include upper airway assessment. PTA could lead to edema of supraglottis and glottis, extending into other deep neck space spaces as far as reaching mediastinum causing mediastinitis. Progression of infection may also involve skull base causing severe complications.[11]

Diagnosis of bilateral PTA is mainly be based on clinical presentation of the disease. In our setting, needle aspiration is often used as a diagnostic approach. All positive finding on needle aspiration will be followed by incision and drainage. Laboratory evaluation is not mandatory for the diagnosis of bilateral PTA, but complete blood count with differentials of white blood cell count (WBC) could be used to dictate the level of severity and for monitoring of progression. Imaging is not compulsory in such cases, however, it could differentiate other deep neck space infections, epiglottitis, or peritonsillar cellulitis.

Treatment of PTA mainly consists of intravenous antibiotics, surgical drainage via needle aspiration or

incision and drainage. There is no universal consensus on the most optimal technique for the drainage of PTA. Needle aspiration could be both diagnostic and therapeutic which is less painful and easier to perform. Incision and drainage is a more invasive procedure but is more effective and reduces the risk of the remaining collection in the abscess cavity. Incision and drainage can be done under general or local anesthesia depending on patients' pain threshold. Most of the cases in our setting are done under local anesthesia with lidocaine spray. Daily monitoring and repeating procedure of drainage are encouraged to ensure a complete drainage of PTA.

Failure of resolution with incision and drainage may indicate the need for immediate tonsillectomy (quinsy tonsillectomy). A study by Qureshi at el noticed an increasing trend of incision and drainage in managing peritonsillar abscess with a significant drop in the rate of tonsillectomy.[12] Other possible indications of quinsy tonsillectomy include previous episodes of PTA or recurrent tonsillitis and significant upper airway obstruction. As compared to other surgical drainages, quinsy tonsillectomy is more expensive and requires general anesthesia. Despite quinsy tonsillectomy during infective phase theoretically having increased risk of blood loss, a case series which involves 34 children revealed no significant differences compared to interval tonsillectomy.[13] Interval tonsillectomy could be done after the infection settles and it is surgically more challenging due to post-infectious fibrosis.

Although surgical drainage of bilateral PTA is the mainstay of treatment, one of the cases reported in this series was treated successfully with medical therapy of intravenous antibiotics. To the best of our knowledge, this is the first case of Bilateral PTA reported being treated successfully with medical therapy. A case series by Battaglia at el, which involves 307 randomly sampled patients with PTA concluded that medical therapy appears to be equally safe and efficacious, with less pain, opioid use and days off work.[14] This study, however, it tempered by the limitation as such that more severe cases were often treated surgically rather than medical. Future studies which involve the inclusion of bilateral PTA, and with objective criteria such as the size of abscess, severity of disease, age group and comorbid are much needed to draw a conclusion on the effectiveness of medical therapy. If medical treatment is proven to be effective even in bilateral PTA, it can improve the patients' comfort, save costs and reduce procedural risks.[14] In addition to intravenous antibiotics, a short course of glucocorticoids could also beneficial in reducing the edema of upper airway and relieving pain. However, the role and benefits of glucocorticoids in treating PTA remained controversial with conflicting evidence.[15,16]

CONCLUSION

Bilateral PTA is an uncommon deep neck infection. It should always be considered when there is presence of odynophagia, fever, trismus, muffled voice and bilateral peritonsillar swelling. Uvula may be non-deviated in bilateral PTA unlike unilateral PTA. Upper airway assessment should always be conducted in managing the disease. Despite surgical drainage being the most common management of bilateral PTA, medical treatment alone can be considered in cases with no significant upper airway obstruction.

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