

Case report:

Intraoral Approach Drainage of Submasseteric Abscess in a 14-Month-Old Child

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Abstract

Submasseteric abscess is a rare head and neck abscess. It may mimic a parotid abscess due to very close anatomical relationship. We present a 14-month-old child presented with fever, poor oral intake, irritability, and left-sided cheek swelling. Contrast-enhanced computed tomography of the neck showed an abscess formation in left submasseteric space. Intraoral drainage of abscess was successfully performed under general anesthesia. Patient recovered well and was discharged on day three post operatively. Subsequent follow up at one-week post operatively showed no recollection of the abscess.

Keywords: Submasseteric abscess; head and neck; intraoral approach

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Introduction

A submasseteric space is one of the three spaces within the masseteric space; the other two are infratemporal and pterygomaxillary space.¹ These potential spaces developed due to the complex insertion of the masseter muscle and are prone to collection of abscess secondary to oral infection.^{1,2} Although rare, the collection of abscess within this space is an important entity as the clinical presentation mimics abscess collection arising from other surrounding structure or space which make the diagnosis challenging.

Case report

A 14-month-old child presented with a painful left cheek swelling for one-month duration. Initially the swelling was small and gradually increased in size with the overlying skin became inflamed. It was painful on touch and during suckling. He also has limited mouth opening causing poor oral intake. The child became easily irritable. He was feverish on the day of presentation. Mother denied of child having recent history of trauma, insect bite or dental infection. He also has no history of upper respiratory tract infection prior to the symptoms. Oral antibiotic was started by health clinic but the symptoms did not improve.

On examination, child was having fever, irritable and mildly dehydrated. The left cheek was swollen with the overlying skin look blue-reddish in color. The swelling extends to left angle of mandible (Figure 1). It was tender on palpation. Intraoral examination showed small induration at left buccal mucosa with no discharge upon milking and minimal trismus upon mouth opening. No lymph node enlargement found on neck examination. Ear and nose examinations were also unremarkable.

The initial diagnosis was acute parotitis and patient was started on intravenous (IV) amoxicillin-clavulanic acid 200 mg 8-hourly (20mg/kg/dose) for three days. However the swelling did not improved thus a computed tomography (CT) scan of neck was performed which revealed a well-defined lobulated rim-enhancing collection at left cheek between the masseter and ramus of mandible suggestive of left submasseteric abscess (Figure 2). The abscess locule also extends anteriorly to the adjacent buccal space.

Upon aspiration, there was a positive aspiration of thick pus, which was sent for culture and sensitivity and acid fast bacilli smear (Figure 3b). Subsequently, we performed a horizontal incision at the same area using scalpel size 11.

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Figure 1. Swelling at left cheek extending to left mandible area



Figure 2. Well-defined lobulated rim-enhancing collection seen at left cheek between the ramus and left masseter muscle.

We performed intraoral incision and drainage of left submasseteric abscess under general anesthesia. Intraoperatively, aspiration was initially performed to confirm the presence of abscess locule at the left buccal mucosa most indurated site (Figure 3a).



Figure 3(a). Left buccal mucosa swelling



Figure 3(b). Aspiration done and presence of 1cm x 1cm pus was confirmed. Incision made at the swelling and pus drained about 5 ml.

A single locule was located and confirmed using finger dissection. Total of 5 ml of pus was drained. Wound was left opened with no drain inserted. Postoperatively, patient was allowed clear fluid only with IV normal saline for the first 6 hours. He was allowed to continue breastfeeding after 6 hours of operation and allowed on soft diet after

12 hours of operation. Patient recovered well and was discharged on day three post operatively. Subsequently patient was able to take orally well and showed no recollection of the abscess at one week follow up.

Discussion

The submasseteric space made up one of the three parts of masseteric space or also called lateral masticator space, which is defined by the lateral sleeve of the superficial layer of deep cervical fascia.³ The other two spaces are infratemporal space and pterygomaxillary space.¹ The submasseteric space is a space lateral to ramus of mandible and developed due to the different insertion of superficial, middle and deep part of the masseter muscle, thus prone to inconspicuous abscess accumulation.⁴ The common cause of abscess collection in this space is odontogenic infection, mostly from the pericoronitis of third molar infection.^{1,4,5} Other cause is from the complication of needle injection to block the inferior alveolar nerve for local anesthesia when the needle is misdirect laterally to the ramus of mandible.² Osteomyelitis of adjacent bones such as zygomatic or temporal bone also may cause secondary abscess formation in this space.² However in our case, no definite cause can be found.

Abscess accumulating in this space may spread to parapharyngeal space medially, submandibular space inferiorly, buccal space anteriorly, or the parotid gland posteriorly.³ In our case, the abscess formation spread to buccal space and make the intraoral access to drain the abscess is possible. It also misled the diagnosis as parotitis in the initial management due to location of the swelling. The surgical approach to drain the abscess can be done via intraoral, extraoral or combined approach depending on the location and extension of the abscess. We chose intraoral approach to drain the abscess, as it was the most accessible approach based on the CT scan findings. The horizontal incision was made at the most bulging part of the buccal mucosa and wound further dissected using artery forceps and finger dissection to locate the locule of the abscess. Intra-oral sublabial approach to drain the abscess collection was reported, by making the incision at the upper gingival-buccal sulcus then dissecting to the space with the artery forceps.⁶ This approach also gained good post-operative outcome faster and able to avoid complications such as neurovascular injury. Other than open surgical approach, treatment modalities of submasseteric abscess is currently widened to ultrasound-guided aspiration of the abscess as reported in few literature with good outcome.^{7,8}

References:

1. Ashutosh R, Ruchi R, Rabindra K, Mangal S. Submasseteric abscess: A rare head and neck abscess. *Indian J Dent Res* 2011;22:156-68.
2. Sayuti R, Baharudin A, Amran M. Submasseteric abscess: an unusual head and neck condition. *Arch Orolfac Sci* 2007;2:59-60.
3. Schuknecht B, Stergiou G, Grätz, KW. Masticator space abscess derived from odontogenic infection: imaging manifestation and pathways of extension depicted by CT and MR in 30 patients. *Eur Radiol* 2008;18:1972-9.
4. Balatsouras DG, Kloutsos GM, Protopapas D, et al. Submasseteric abscess. *J Laryngol Otol* 2001;115 (1): 68-70.
5. Bransby-Zachary GM. Submasseteric space. *Br Dent J* 1948;84:10-3.
6. Xing Yi Y, Szly J, Zakaria Z, Choo PK. Drainage of masseteric abscess via sublabial approach: A case series. *Bangladesh J Med Sci* 2016;15(3):492-4.
7. Eunhee K, Ju HJ, Yoo HS et al. Masticator space abscess in a 47-day-old infant. *Korean J Pediatr* 2011;54(8):350-3.
8. Gudi SS, Sarvadnya J, Hallur N, Sikkerimath BC. Ultrasound-guided drainage of submasseteric space abscesses. *Ann Maxillofac Surg* 2013;3(1):31-4.