CASE REPORT

Submasseteric abscess: an unusual head and neck condition

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Abstract Submasseteric abscess is unusual in the head and neck region. Patients with this condition may be misdiagnosed as a parotid abscess due to the similarities in their presentation. Awareness and due recognition should be given to this unusual problem.

Introduction

Masseteric space is one of the important spaces in the head and neck region. As abscess involving this region is not common, the diagnosis of submasseteric abscess does not come readily as a main diagnosis or as a differential diagnosis when we come across patient with a painful head and neck swelling (Balatsouras et al., 2001). Due to its rarity the incidence is not really known (Jones et al., 2003).

This paper highlights a case of a young adult male who presented with right submasseteric abscess with no previous history of dental problem. Initial diagnosis was right parotid abscess but submasseteric abscess was later diagnosed by computed tomography (CT) of the neck.

Case report

A 24 years old male with no previous medical illness presented to ORL-HNS clinic, with 2 weeks history of right facial swelling. Initially it was a small swelling started in the area of the right angle of mandible. It was associated with mild pain and low grade fever but there was no evidence of trismus. The swelling increased in size over time and the patient had sought treatment from a district clinic and was prescribed a week's course of antibiotics. However, he claimed the swelling gradually continued to grow in size and was painful. There was no previous history of dental problem or trauma to the face. There was no previous history of recurrent swelling in the parotid region.

On examination, there was a large diffuse swelling over the right extending from the lower border of the zygomatic arch down to the submandibular region. It was firm and tender to touch and no fluctuation elicited.

Marked trismus was noted with mouth opening about one and a half finger-breadth. Intra-oral examination revealed no evidence of tooth caries. An urgent CT-scan (Figure 1) showed a heterogenous enlargement of right masseter muscle with the underlying hypodense area between the muscle and the ramus of the mandible indicating the presence of pus collection. The CT scan also didn't show any periapical infection of the teeth or presence of an impacted third molar.

Figure 1 CT scan showing the submasseteric abscess (arrow)

An incision and drainage was performed under general anaesthesia with the patient in supine position and head turned to the left (Figure 2). The abscess was drained via a high
horizontal incision 2.5 cm below the lower border of the right mandible (Figure 3). Sub-platysmal flap was raised and the masseter muscle breached to expose the abscess. Fifteen ml of pus was drained out and sent for culture and sensitivity. A corrugated drain was inserted.

Figure 2  The abscess extended from the lower border of the zygomatic arch down to the submandibular region

Intravenous antibiotics (cefuroxime and metronidazole) were administered post operatively for five days and continued with oral for another one week. Upon review 2 weeks post operatively, the swelling has totally resolved but the patient still has residual trismus. After one month postoperatively the trismus resolved.

Figure 3  Surgical drainage of the abscess

Discussion

The anatomy of submasseteric space was first described by Bransby-Zachary in 1948 (Balatsouras et al., 2001). Masseter muscle is divided into three parts namely superficial, middle and deep that originates from the zygomatic arch (Jones et al., 2003). The insertion of the deep part is to the lateral aspect of coronoid process and the upper third of the ramus of mandible. The superficial portion which is the largest part is inserted to the lower third of the ramus while the middle portion being the smallest part is inserted to the thin line curving posteriorly and superiorly over the middle third of the ramus. These different insertions have created a potential space that can allow infection and formation of abscess.

There are few possible ways for the pus to collect in the submasseteric space (Mandel, 1997). Most infections of the submasseteric space arise from the molars especially the lower third molar. The most common route of spread is posteriorly and medially extending to the temporal space without breakdown of the space barriers or it can break through the cervical fascia and spread medially to the parapharyngeal space.

Secondly, during a needle injection to block the inferior alveolar nerve, the needle maybe misdirected and placed lateral to ramus. Thirdly, infection may spread from an osteomyelitis of the zygomatic or temporal bone. Other modes of spread is a direct extension from adjacent fascial spaces such as superficial and deep temporal spaces, parotid space, medial pterygoid space and the space of the body of the mandible. This case showed no evidence of obvious precipitating factor that can be related to the development of the submasseteric abscess.

We can only postulate that the cause may be blood spread from an infection along the upper airway or alimentary tract. Surgical drainage of the abscess, either intraorally or by the external approach is the most efficient treatment although needle aspiration has been used by some authors as the initial method of treatment (Gidley et al., 1997).

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Misdiagnosis is common as in this case where the primary diagnosis was parotid abscess (Balatsouras et al., 2001; Mandel, 1997). Other diagnosis includes acute or chronic parotitis. This is due to the fact that the submasseteric space is in close proximity to the parotid gland, divided by a fibromuscular fascia. The trismus in our patient developed later with the increase in the collection of pus in the submasseteric space and subsequent intense inflammation. The patient also had postoperative trismus due to residual spasm of the masseter muscle as a result of the inflammation. After one month postoperatively the trismus resolved as the inflammation settled.

References


