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## SUBMANDIBULAR GROWTH OF NON ODONTOGENIC ORIGIN: A CASE REPORT

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### INTRODUCTION

#### Background

Oral soft tissues are affected by a wide range of pathologic conditions. Swellings in the mouth are common and can result from a diverse spectrum of pathologies.<sup>1</sup> A Multidisciplinary Approach to Diagnosis and Management rely on their accurate diagnosis. A thorough knowledge of the clinicopathologic characteristics of each condition and a systematic approach should be used to arrive at the correct diagnosis.<sup>2</sup> Swellings in the submandibular region are quite common. Hereby, we are reporting a case of a unilateral swelling on right side of the face

#### Case Report

An 11-year-old Indian child reported to the Department of Pedodontics, KD Dental College and Hospital Mathura with a chief complaint of swelling in the right submandibular region. The vital signs were found within the normal limits. This was the patient first dental visit, on extra oral examination; an ill defined, solitary swelling was present on the right side of the face (Figure 1). It extended up to 1.0 cm above the inferior border of the body of mandible. The swelling was mobile, firm, compressible, nonpulsatile, non tender and nonfluctuant. The swelling occurred for the first time 1 month back. There was no sinus tract formation, discharge or visible pulsations present. On palpation, all the inspectory findings were confirmed. The temperature of the overlaying skin was normal. The lymph nodes: submandibular, pre auricular were non palpable. The cervical nodes were also non palpable. . On intraoral examination, deep dentinal caries was detected with respect 46 was present. The tenderness on percussion was positive.

Based on the history and clinical examination, a provisional diagnosis of periapical infection secondary to carious lesion in relation to right first mandibular molar, differential diagnosis of benign salivary gland tumor, submandibular tubercular lymphadenopathy and metastasis of unknown primary tumor were considered.

#### Radiographic features

An intra oral radiograph and ortho pentogram revealed the involvement of pulp with respect to 46. No radiolucency was seen in relation to 46. The lamina dura was intact and the adjacent teeth normal.

#### Intervention

The medications were prescribed and root canal treatment was performed in relation to 46. Even after 1 month, the swelling didn't subside.

#### Hematological investigations and biochemical investigations:

They were found to be within normal range.

#### Chest X Ray

The chest x ray (PA view) showed no pathological lesions, trachea was central. Both lung fields were clear, cardiac shadow normal and costophrenic angles normal.

#### Sonography

The 2D real time sonological study of whole abdomen also reported that liver, gall bladder, spleen, pancreas, kidney, urinary bladder are normal in size and no focal mass present.

#### Fine-needle aspiration

It was performed to know the nature of the lesion and it showed mild cellularity consisting of mixed type of inflammatory infiltrate consisting of lymphocytes, neutrophils and clusters of epitheloid cells forming ill defined granulomas at places.

#### Treatment

Complete surgical excision with clear margins was the mainstay of the treatment. Hence the treatment of choice planned was complete but conservative local excision. Three days prior to the day of the surgery, all the routine investigations along with the biopsy were done and then the patient was hospitalized. A broad spectrum antibiotic was administered for 24 hours. Strict aseptic protocol was followed. General anesthesia was given to the patient.

The patient was placed in a supine position with neck extended. The skin of the anterior neck and lower face was sterilized. Draping was done in such a way that the right side of the face was exposed. The area to be excised was then marked with a surgical marker. It was approached through an incision placed in the right submandibular region. The scalpel handle and blade No. 15 blade was used for the same.

The care was taken to cut around and under the lesion with a scalpel and sharp scissors along with an appropriate margin of normal surrounding tissue. Incision was given in the right submandibular region, and the skin flap was reflected.

The incision was made in the neck about two finger breadths below the lower border of the jaw in a skin crease. The incision was carried through skin, subcutaneous tissue and platysma to expose the capsule of the SMG preserving the superficial fascia, the facial vein and posteriorly, the external jugular vein. The facial vein was ligated and divided where it crossed the

SMG. The fascial capsule of the SMG was incised with knife parallel to and just above the hyoid bone to expose the SMG. By applying inferiorly directed traction to the SMG, a subcapsular dissection with exposure of the SMG was done with cautery. Contraction of the angle of the mouth alerts the surgeon to the proximity of the marginal mandibular nerve. (Figure 1-9)

Great care was taken not to damage the surrounding muscles, vessels and nerves. The lesion was identified and separated from the underlying structure. The wound was irrigated with water, and closed in layers and sutures were given. Excessive Bleeding in that area was controlled with the help of cautery. The edges of the wound were then sewn together to make a thin suture line with the help of, 6-0 superficial sutures.

Patient was kept under observation for two days, and was given antibiotics, analgesics. No clinical signs of mandibular nerve injury were noted after operation. Patient was discharged after 2 days. The patient is under follow-up since the surgery, and no signs of recurrence have been observed till date.



Figure 2



Figure 3



Figure 1 The initial clinical aspect of the child. Note the presence of swelling on the right side of the face.

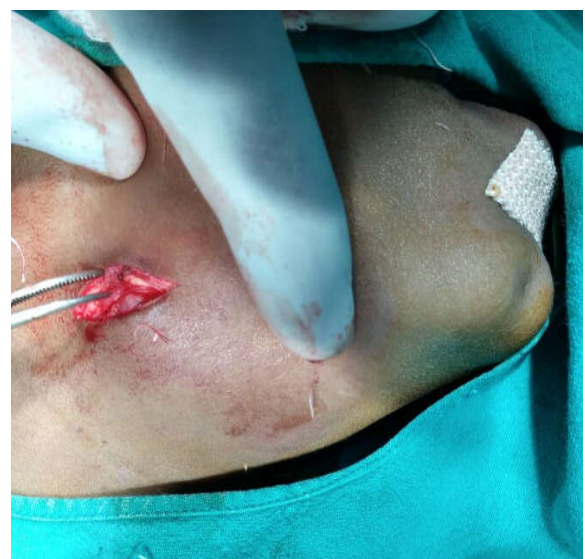


Figure 4



Figure 5



Figure 9



Figure 6



Figure 7



Figure 8

### Biopsy

The specimen made from the right submandibular lymph node reported no relevant finding (Figure10). ZN staining was also negative for the sputum.

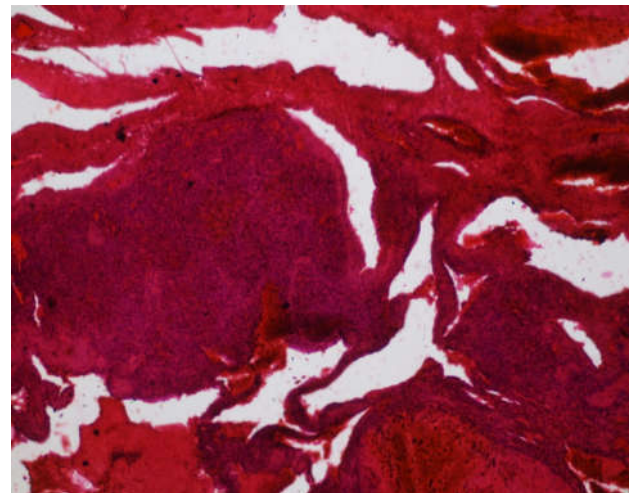


Figure 10

### DISCUSSION

The differential diagnosis ranges from traumatic, infectious and metabolic processes to benign and malignant tumors. In the mandibular region, various lesions originate. The histopathology of the lesion is complex and difficult area of diagnostic pathology. Even In the latest WHO classification there are 40 named neoplasms many of which have variable histological features that can challenge even the most experienced specialist pathologist. The first step in the diagnosis is to distinguish between the tissue of origin by using careful bimanual, intraoral, and extra oral palpation.<sup>3,4</sup>

The rarity of a disease occurrence causes great difficulty in describing its pathogenesis and in turn their treatment modality. In addition, the salivary glands can be affected by a range of non-neoplastic conditions, some of which have only recently been described. These often present clinically like tumours and may have pathological features similar to some of the neoplasms, making diagnosis difficult and errors serious. Low prevalence of such diseases can lead to less knowledge about them, as they affect only a small percentage of population<sup>5,6</sup>

Benign salivary gland tumor stands first in the list because of the benign clinical presentation of the swelling. These swelling appear as painless, firm but mobile. A next stand is tuberculous lymphadenitis. It is still the commonest condition in patients presenting with neck swellings followed by nonspecific lymphadenitis and malignant neoplasms especially metastatic carcinoma. Tuberculosis of the submandibular salivary gland is a rare clinical entity even in countries where the disease is rampant. Only a few cases of submandibular salivary gland tuberculosis have been reported in literature. In developing countries, tuberculous infection still exists on a significant scale. There is a slight reduction of incidence of tuberculosis in developed countries owing to increased awareness towards hygiene and nutrition. But chest X ray and ZN staining ruled out this diagnosis.<sup>8, 9, and 10</sup>

Other conditions may include viral infection, like mumps affecting submandibular gland that usually involves the early age group. But no presence of antibodies in the serum ruled out this finding also.<sup>11, 12</sup>

## CONCLUSION

Oral physicians play an important role in the diagnosis lesions. Every clinician should consider a wide range of differential diagnosis as done in the present case. By using the appropriate diagnostic modalities like proper history taking, clinical examination, fine-needle aspiration cytology, radiological screening and ultrasonography as advanced diagnostic modality, early diagnosis and definitive treatment can be achieved. As there is scantiness of proper methods to identify their precise origin, this review emphasizes the need for standardization of criteria to resolve the controversies along with further need to continue developing research in clinico-pathological and therapeutical aspects in this region of oral and maxillofacial pathology.

## Consent Statement

Written informed consent was obtained from the patient parents prior to the investigations and treatment. The same was also procured for publication of this case report and any accompanying images.

## Competing Interests

The authors have not been influenced by any financial or personal relationship with people or organizations in preparation of this study

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