

## SUBMENTAL DERMOID CYST: A CASE REPORT

By

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### SUMMARY

**Case definition:** Sub mental dermoid cysts are not common. Dermoid and epidermoid cysts represent about 0.01% of all oral cysts with an incidence of 1.6 to 6.9% in the head and neck region. They can present at birth and remain undiagnosed until they present cosmetic problems to the patient in adult life. They may also present in adult life with varying degree of problems.

**Reason for reporting:** This case is reported because it was first diagnosed when the patient was 6 months old but it was not treated and presented in the clinic when it was causing aesthetic problems when the patient was 20 years old.

**Case report:** The patient was a 20-year old male with a sub mental swelling. The swelling, which measured 6.5cm x 5 cm clinically, was reported by the sonologist to be 6 cm x 3.9 cm. It was doughy in consistency and did not interfere with swallowing. It was neither visible nor palpable intra-orally. A sub mental vertical incision was made and the cyst was located on the mylohyoid muscle and was excised. The histology confirmed dermoid cyst. No recurrence of the cyst has occurred after 18 months of follow up.

**Conclusion:** Dermoid cysts are sometimes difficult to diagnose in an infant or new born because they may be small and symptomless. An appropriate referral to and follow up by the oral and maxillofacial surgeon to remove them early is advocated.

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**Keywords:** *Submental, Dermoid, cyst.*

### INTRODUCTION

Dermoid cyst is a term applied to cystic lesions where adnexae such as sweat glands, sebaceous glands and hair follicles are present. The term is also used in clinical practice to describe three closely related cysts, the true dermoid cyst, the epidermoid cyst and the teratoma<sup>2</sup>. Cases of dermoid cysts have been reported in the body and they represent less than 0.01% of all oral cysts with an incidence of 1.6 to 6.9% in the head and neck region.<sup>3</sup> While some dermoid cysts are congenital,<sup>4, 5</sup> others are acquired with multiple theories supporting both origin<sup>2</sup>. Although dermoid cysts of the oral cavity have been documented

for over 75 years, they are still reported to be rare. Literature reviews on the subject have continued to show an increasing incidence of reported cases<sup>2</sup>. The interest the cyst generates among clinicians appears to revolve round the unresolved areas of terminology, classifications, location and treatment of the cyst.

Some investigators have noted the development of the cyst in the midline, superior to the mylohyoid and geniohyoid muscles<sup>6</sup> while others<sup>7</sup> believe it can also arise below the mylohyoid muscle. The origin of the cyst in relation to these muscles would therefore determine its location in the lower jaw. If it

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arise: between the geniohyoid and mylohyoid muscles or under them it could present as a sub-mental swelling, which gives the double chin appearance<sup>8</sup> whereas its origin above the mylohyoid and genioglossal muscles causes the swelling to elevate the tongue.<sup>6</sup> There are few cases of dermoid cysts reported from our environment.<sup>5, 7</sup> We report a case of dermoid cyst in the sub-mental region in a 20-year old male patient, which was diagnosed when the patient was 6 months old in order to add to the literature of reported cases from our environment.

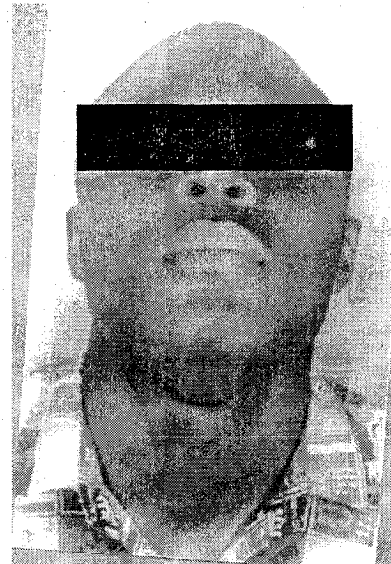
### CASE REPORT

A 20-year-old student was referred to our clinic with a sub-mental swelling. The patient claimed that the swelling had been present since childhood but since it was painless, he did not seek medical treatment. The mother confirmed that she noticed the swelling since he was about 6 months old but was reassured by the doctor that it would disappear. He decided to seek treatment because the swelling was gradually increasing in size and producing a "double chin."



**Fig. 1:** Lateral view of the face with the head extended to show the submental dermoid cyst.

On clinical examination, there was doughy, non-tender swelling located in the midline sub-mentally below the mylohyoid muscle in the anterior triangle of the neck (figures 1 & 2). It measured about 6.5 cm x 5cm. The swelling was neither visible nor palpable intra-orally. A tentative diagnosis of dermoid cyst was made with thyroglossal duct cyst, and lymphangioma considered as differential diagnoses.



**Fig. 2:** Full-face view with the head tilted to show the submental dermoid cyst.

The patient was sent for ultrasonography and occlusal radiograph. The ultrasound report revealed the true size of the cyst to be 6cm x 3.9cm. The occlusal radiograph did not yield any significant finding and there was no fluid aspirate. The PCV was 42%. Under oro-tracheal intubation and with the neck extended, a vertical incision was made in the sub mental region through the platysma muscle. The cyst was immediately visible on the mylohyoid muscle bordered by the anterior belly of the digastric muscles. Enblock dissection was carried out and the cyst was carefully teased out from the muscle attachment. The recovery of the patient was uneventful and he was discharged after 5 days

stay in the hospital. The lesion has not recurred after 18 months of follow up.

Macroscopically, the specimen consisted of a roughly oval shaped grey tissue, which measures 4cm x 3cm and soft to touch. The cut surface shows a cavity containing sebaceous material. Microscopically, section shows a cystic lesion lined by stratified squamous epithelium and containing keratinous material. The cystic wall was composed of dense collagenous tissue showing focal areas of haemorrhage and chronic inflammatory infiltrates. The muscle coat was unremarkable. These features are consistent with dermoid cyst.

## DISCUSSION.

A number of authors<sup>9, 4, 5</sup> have reported dermoid cyst to be congenital which tend to support the view that the progenitor cells for these cysts are present at birth.<sup>10, 11</sup> However, the theory of traumatic implantation of cells in utero that results in the development of the cyst has also received some support from some investigators.<sup>12</sup> King et al<sup>2</sup> found an incidence of these cysts in previous studies commonly incorporating an extremely broad age range of 12 to 35 years but using a 5-year age interval in his review, the highest incidence was found in the new born to 5-year-old range. A lack of early detection is one of the reasons for the wide age range<sup>11</sup>. The cyst in our patient was detected in infancy when it was small which tend to confirm the observation of some earlier investigators.<sup>9</sup> Since the cyst was painless, it was tolerated until it presented cosmetic problems that motivated the patient to seek medical treatment.

The location of the cyst in relation to the muscles of the floor of the mouth has often generated some controversy. The importance of this relationship quite often determines its clinical presentation and surgical approach for their removal.<sup>13, 14</sup> In many articles, it is assumed that these cysts, which cause submental swelling lie between the mylohyoid and geniohyoid.<sup>6</sup> The location of the cyst in this report was below the mylohyoid muscle and the

double chin it produced tend to support the observation of many investigators.<sup>8</sup> It may rarely herniate through the hiatus in the mylohyoid muscle as it enlarges, appearing in both sub-mental and sublingual spaces<sup>1</sup>.

Little practical importance has been attached to the classification of dermoid cysts into anatomical planes.<sup>6</sup> A list of classification of the cyst from available literature on the subject<sup>2</sup> appears to throw some light on its true nature. It is recommended by some authors that soft tissue films should be employed to evaluate the cyst size and displacement of structures<sup>13</sup>. But xerography appears a better method of determining the extent of the cyst.<sup>8</sup> Although ultrasound does not penetrate bone, its maximum benefit can be achieved by correlating its results with clinical findings<sup>15</sup> and this was our method of investigation. However, in complicated cases, magnetic resonance imaging technique (MRI) and a three-dimensional computer tomography (CT) scan may be useful.<sup>2</sup>

Dermoid cysts do not recur if complete excision of the cyst and its tract is accomplished<sup>2, 5</sup>. The surgical approach to submental dermoid is frequently extra oral<sup>7</sup> although intraoral or a combination of approaches has been employed in some cases.<sup>2</sup> We used extra oral approach to the surgical excision of the cyst in our patient and no recurrence has been observed. Longo et al<sup>16</sup> used this method of treatment when the cysts were under the mylohyoid muscle and have not observed any recurrence or malignant changes in their series.

It may be difficult to diagnose a dermoid cyst in an infant or newborn especially when they are small and symptomless. We advocate appropriate referral to and follow up of all such lesions in the newborn by the oral and maxillofacial surgeon for their early removal to prevent future cosmetic and functional problems. Some authors<sup>17</sup> have emphasized the importance of prompt diagnosis and treatment in early childhood.

## REFERENCES

1. Al-kayat M, Kenton GS. Midline sublingual dermoid cyst. *J Laryngol Otol* 1990; 104: 578-580
2. King RC, Smith BR, Burk JL. Dermoid cysts in the floor of the mouth. Review of the literature and case reports. *Oral Surg. Oral Med Oral Pathol* 1994; 78: 567-576.
3. De ponte FS, Brunetti A, Marchetti E et al. Sublingual dermoid cyst. *J Craniofac Surg.* 2002; 13: 308-310.
4. Flom GS, Donovan TJ, Landgraf JR. Congenital dermoid cyst of the anterior tongue. *Otolaryngol Head Neck Surg.* 1989; 100: 602-605.
5. Saheeb BDO, Umebese PFA. Congenital intra-oral dermoid cyst co-existing with unilateral clubfoot: A case report. *Saudi Dent J* 2000; 12: 171-173.
6. Seward GR. Dermoid cyst of the floor of the mouth. *Br J Oral Surg.* 1965; 3: 36-47.
7. Akinosi JO. Multiple sublingual dermoid cysts. *Br J Oral Surg* 1974; 12: 235-239.
8. Tuz M, Degru H, Uygur K et al. Rapidly growing sublingual dermoid cyst throughout pregnancy. *Am J Otolaryngol.* 2003; 24: 334-337.
9. New GB. Congenital cysts of the tongue, floor of mouth, pharynx and larynx. *Arch Otolaryngol Head Neck Surg* 1947; 45: 145-147.
10. Shafer WG, Hine MK, Levy BM (eds). A textbook of oral pathology (4<sup>th</sup> Ed) Philadelphia: WB Saunders 1974: 78-79.
11. Kinnman J, Ku Won Suh. Dermoid cysts of the floor of the mouth. *J Oral Surg* 1968; 26: 190-192.
12. Baker BR, Mitchell DF. The pathogenesis of epidermoid implantation cysts. *Oral Surg Oral Med Oral pathol* 1965; 19: 494-501.
13. Brown CA, Baker RD. Dermoid cyst: Report of a case. *J Oral Surg* 1972; 30: 55-58.
14. Bramley PA. Cysts of the oral soft tissues In: Moore J (ed), *Surgery of the mouth and jaws.* Oxford: Blackwell Scientific Publications 1985; 438-439.
15. Black EE, Leathers RD, Youngblood D. Dermoid cysts of the floor of the mouth. *Oral Surg Oral Med Oral Pathol* 1993; 75: 556-558.
16. Longo F, Maremonti P, Mangonem GM, et al. Midline (dermoid) cysts of the floor of the mouth: report of 16 cases and review of surgical techniques. *Plast Reconstr Surg.* 2003; 112: 1560-1565.
17. Ho MW, Crean SJ. Simultaneous occurrence of dermoid cyst and oral alimentary tract cyst in an infant: a case report and review of the literature. *Int J Paediat Dent.* 2003; 13: 441-446.