

# A Rare Case of a Submental Epidermoid Cyst: A Case Report

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## ABSTRACT

Epidermoid and dermoid cysts represent less than 0.01 % of all the oral cavity cysts. Most often, they are located in the submental region. Most of the patients present with a painless slow growing lump. Imaging is used to know the contents of the

lesion and the plane of the swelling, so that a surgical approach can be decided. Here, we present a case of an epidermoid cyst in the neck, which was diagnosed by ultrasonography and magnetic resonance imaging and confirmed by histopathological examination.

**Key Words:** Submental epidermoid, Ultrasound & MRI

## CASE REPORT

A 24 year old female presented with a painless mid line swelling in the submental region of the neck of 5 to 6 months duration. There was no history of difficulty in swallowing or speech. On examination, a non tender, firm, mobile and non transluminant swelling of 2 x 3 cms was noted in the mid line in the submental region. There was no evidence of movement of the swelling on protrusion of the tongue or swallowing. No other mass lesions or enlarged lymph nodes were noted. The haemogram and the biochemical investigations were normal.

The patient was referred to the Radiodiagnosis Department for an imaging study of the swelling. Ultrasonography was done with a high frequency linear probe on a Philips Envisor in the coronal and sagittal planes. It revealed a well defined, thick walled, unilocular, rounded, cystic mass lesion in the submental region, deep in the myelohyoid muscle. Multiple, well defined, echogenic nodules are noted within the cystic lesion. Each nodule measured between 3 to 4 mm. There was no evidence of aftershadowing or post acoustic enhancement from the nodules.

Magnetic resonance imaging of the neck was done with 1.5 Tesla Philips Achieva. On MRI, a well defined, rounded, cystic mass lesion was noted in the submental region, deep in the myelohyoid muscle, which showed multiple, small, hypointense nodules on all the sequences. The lesion was hyperintense on the T2 weighted images and hypointense on the T1 weighted and the FLAIR images.

The cyst was completely removed by surgical excision by using the submental approach and it was sent for histopathological correlation. No intra or post operative complications were seen.

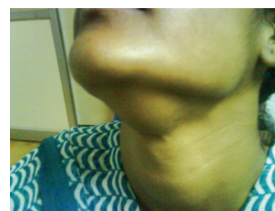
## DISCUSSION

The spectrum of a teratoma includes a dermoid cyst, an epidermoid cyst and a teratoid cyst, which are all covered by squamous epithelium [1]. Dermoid and epidermoid cysts are ectoderm lined inclusion cysts which differ in their contents. Both the dermoid and the epidermoid cysts are uncommon in the head and neck region and represent 07 % of all the cysts in that region [2]. Since all theses cysts are lined by squamous epithelium, the cheesy keratinaceous material is seen within them.

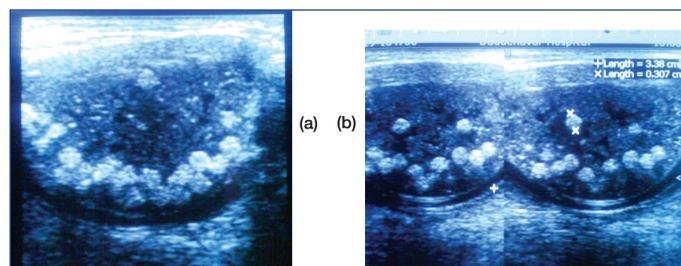
Epidermoid cysts may be classified as congenital or acquired, however, with no difference in their presentation and histological features. As epidermoid cysts lack the dermal appendages, the squamous lining will be thin and it will contain no calcifications. The desquamation of the squamous epithelium lining from the cysts results in debris, which consists of mostly keratin, proteinaceous material and some cholesterol. At gross inspection, the tumours are called as 'pearly' because of the shiny smooth, waxy character of their dry keratin [3].

In the head and neck region, the incidence of the dermoid and epidermoid cysts is 07 %. The most common location of these cysts is the lateral eyebrow. Out of all the dermoid cysts which occur in the head and neck region, 11.5 % are noted in the submental region [4]. The epidermoid cysts in the neck region are less common than the dermoid cysts and these are most commonly located in the submental region.

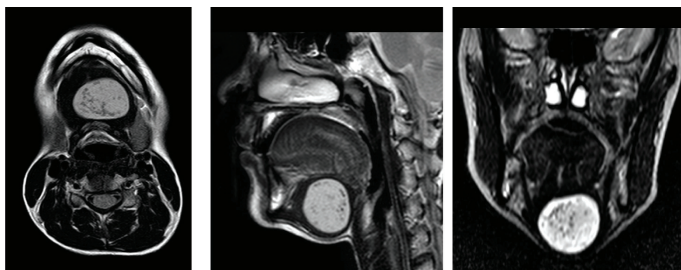
These cysts usually present as midline slow growing masses which gradually increase in size over the years due to the accumulation of cutaneous products. The lesions will be soft and mobile and



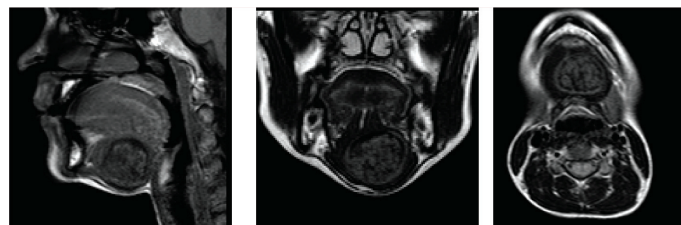
**[Table/Fig-1]:** Photograph of the neck of 24 year old female with submental swelling in the suprahyoid position.



**[Table/Fig-2a & b]:** High resolution ultrasonography of neck region in coronal sections. A well defined encapsulated cyst with echogenic debris within with multiple well defined echogenic rounded nodules. Note that the lesion is deep to the myelohyoid muscle.



**[Table/Fig-3]:** Axial, sagittal & coronal T2 weighted images of the neck region on 1.5 Tesla Philips Achieva MRI machine shows a well defined hyperintense lesion in the submental region with multiple hypointense nodules within.



**[Table/Fig-4]:** Sagittal, coronal & axial T1 weighted images of the neck region on 1.5 Tesla Philips Achieva MRI machine shows a well defined isointense lesion in the submental region with multiple hypointense nodules within.

the overlying skin is pinchable. The mass does not move with the protrusion of the tongue or the swallowing movements. The size of the cysts varies from few millimeters to 12.0 cms [5,6,7].

On ultrasonography, the epidermoid cysts are seen as well defined, thick walled cysts with echogenic debris within them. Multiple well defined, dependent, echogenic nodules are noted in the cysts. On computed tomography, the epidermoid cysts are found to have low attenuation. On magnetic resonance imaging, the epidermoid cysts are found to be hypointense on the T1 weighted images and hyperintense on the T2 weighted images, with multiple hypointense nodules within.

The treatment consists of complete surgical enucleation while taking precautions to not rupture the cysts, as they may act as irritants to the surrounding fibrovascular tissues [8]. A surgical approach can be determined by the relationship of the cysts to the musculature of the floor of the mouth.

The differential diagnosis of the sublingual lesions includes infectious processes like lymphatic malformations, dermoid cysts, epidermoid cysts and lymph nodes. Imaging helps to a greater extent in diagnosing the dermoid and epidermoid cysts. The prognosis is very good, with a low incidence of relapse. The malignant transformation of these cysts has not been reported.

## CONCLUSION

The epidermoid cysts in the submental region develop as slow growing masses over the years or deceased. Ultrasonography is the initial diagnostic modality to confirm the cystic nature of the lesions with multiple echogenic nodules within them.

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