

# Abordagem transcervical para exérese transmilohioideia de quisto dermoide do pavimento da boca

## Transcervical approach for transmylohyoid removal of dermoid cyst of the floor of the mouth

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### RESUMO

Existe controvérsia na literatura médica acerca da abordagem cirúrgica do quisto dermóide por via intra-oral, transmilohioideia vs via combinada ou via cervical quando estamos face a um quisto transmilohioideu. Relatamos um caso de um doente de sexo masculino com 46 anos de idade portador de um quisto transmilohioideu que ocupava completamente os espaços sublingual e submandibular. Efectuou-se cirurgia exclusivamente por via cervical, conseguiu-se um acesso amplo com exposição completa do tumor sem incisões por via oral. A discussão foca-se no acesso cirúrgico invulgar nestes quistos e a comparação com outros acessos cirúrgicos mais comuns nos quistos dermóides do pavimento bucal.

Palavras-Chave: Quisto dermóide, pescoço, pavimento da boca, técnica cirúrgica

### ABSTRACT

*There are some controversies in the literature between exclusive intraoral or combined intraoral and cervical surgical approaches to transmylohyoid mouth floor dermoid cysts removal, especially when there is a large cyst. We report the case of a 46-year-old male presenting a giant transmylohyoid dermoid cyst which completely occupied both sublingual and submandibular spaces. The patient underwent a surgical treatment by exclusive cervicotomy with adequate exposition of the sublingual space without oral incisions. Discussion is focused on the unusual surgical approach employed and on how it compares to others reported surgical approaches for mouth floor dermoid cysts.*

**KEY WORDS:** *dermoid cyst, neck, mouth floor, teratoma, surgical technique*

### INTRODUCTION

Dermoid cysts consist of hamartomatous tumors containing ectodermal derivatives. A minority of body dermoid cysts occurs in the head and neck and only about 1,6 to 6,5% in the mouth floor<sup>1</sup>. Dermoid cysts accounts for only 11% of head and neck congenital cysts, less frequent than thyroglossal duct and branquial cleft cysts<sup>2</sup> and in an initial clinical evaluation are frequently presumed to be salivary cysts, like the ranulas, which are more common.

Histologically dermoid cysts are lined by squamous epithelium with hair follicles, sebaceous glands, etc. The term dermoid cyst has also been employed in head and neck clinical practice to describe epidermoid cysts (in which only the epithelium is present) and teratoid cysts (which also contain endodermal derivatives like bone or cartilage)<sup>3</sup>.

There are many cases of mouth floor dermoid cysts reported in the literature, but few of them had more

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than 7 cm. Localization among the mouth floor muscles and size are important to determine which surgical approach will be used. There are controversies about the best of them – either exclusive intraoral or combined intraoral and cervical – when the tumor spreads to more than one of the cervical spaces of the floor mouth (sublingual, submental and submandibular).

Our aims are to report a case of a 13cm mouth floor dermoid cyst occupying simultaneously sublingual and submandibular spaces, excised through exclusive cervicotomy (which is an unusual technique) and to discuss this surgical approach comparing it to others previously reported.

### CASE REPORT

A 46-year-old male was referred to our hospital with a slow-growing submandibular cystic mass with 6 years of onset without any speech, deglutition or respiratory distress. He had no relevant comorbidities, familial history or previous local trauma. Clinical examination revealed a large soft swelling occupying both submandibular areas accompanied by a protrusion of the mouth floor and cranial displacement of the tongue (Fig. 1). The remaining otolaryngology physical examination was normal including salivary glands drainage.

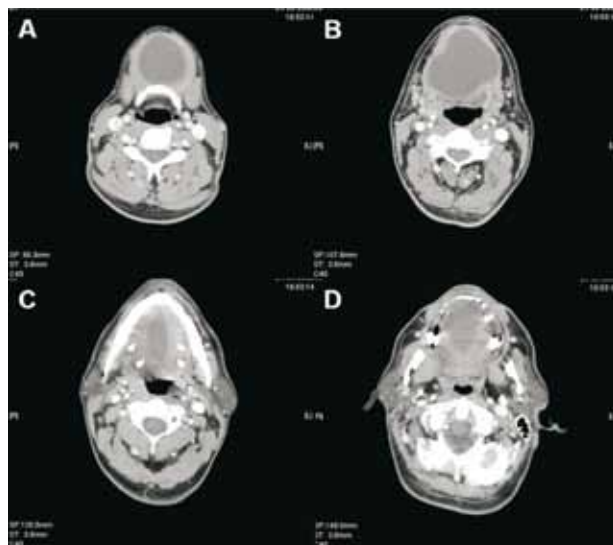
### FIGURA 1

Physical examination. Submandibular swelling is shown in the left image. Intraoral aspect is shown in the right image. Note the cranial displacement of the tongue and mouth floor protrusion.



### FIGURA 2

Computed tomography scan of the patient. A and B: The inferior segment of the cyst. The cyst displaces the submandibular glands laterally and extends beyond the hyoid bone level. C: The isthmus of the dumbbell tumor at the geniohyoid muscle level which is also displaced laterally (arrows). D: The superior segment of the cyst in the sublingual space.



Radiological assessment with computed tomography scan showed a dumbbell-shaped tumor with the superior component in the sublingual space protruding the mouth floor and the inferior component occupying submandibular areas reaching the anterior neck beyond the hyoid bone (Fig. 2).

The patient underwent primary surgical treatment. An external approach through submandibular cervicotomy in a natural skin crease was chosen instead of intraoral approach because of the volume and extension of the inferior portion of the tumor in the neck. The tumor capsule was found below the platysma muscle in both submandibular spaces medial to the submandibular glands. It was easily blunt dissected cranially. A mid-division of mylohyoid muscle and lateral retraction of each geniohyoid muscle (Fig 3) allowed the dissection of the superior tumor component without opening the mouth floor mucosa or injuring the sublingual glands or Wharton ducts. The operative specimen measured 13 x 8 x 6 cm (Fig. 4). Interrupted absorbable sutures were made to repair the mylohyoid muscle. Vacuum drainage was placed and the wound was closed with intradermal suture.

The drain was removed in the first post-operative day with minor drainage and patient was discharged from the hospital in the second post-operative day without any complications. Histopathology report revealed a dermoid cyst containing sebaceous glands in the cyst wall.

**FIGURA 3**  
Intraoperative overview showing both segments of the tumor after dissection of the superior segment from the mouth floor.



**FIGURA 4**  
Operative specimen of 13 x 8 x 6cm after total resection



## DISCUSSION

Innumerable cases of mouth floor dermoid cysts are reported in the literature. Most of them are resected by an intraoral approach as they usually occupy only the mouth floor<sup>1,4</sup>. There are some intraoral surgical techniques described for these tumors depending of their size and extension to the genioglossus and geniohyoid muscles<sup>4</sup>. However, intraoral techniques are diffculted by the limited surgical field with some authors describing partial evacuation of larger cysts in order to

allow its dissection from deeper structures<sup>4,5</sup>. There are also some controversies about applying intraoral<sup>1,5</sup> or cervical<sup>1</sup> surgical approaches for the subgroup of mouth floor dermoid cysts located between geniohyoid and mylohyoid muscles.

Dermoid cysts located only in the submental or submandibular spaces are better surgically resected through cervical incisions as they are below the mylohyoid muscle and formally outside the mouth floor<sup>1</sup>.

Our patient presented a large dermoid cyst occupying simultaneously the sublingual and the submandibular spaces. Anatomically these tumors are classified as transgeniohyoid<sup>6</sup> or transmylohyoid<sup>1</sup> cysts. In the literature there are controversies about the best surgical approach for them.

Some authors describe a combined intraoral and cervical approach to these cysts, justified by a better surgical exposure and preservation of surrounding structures and avoiding cyst opening<sup>1,6</sup>. The combined approach has the disadvantages of 2 incisions and a theoretical chance of an oro-cutaneous fistula. Although this complication was not reported in the literature, there are still very few cases resected this way.

Other authors describe an exclusively intraoral approach of transmylohyoid tumors with partial decompression of the cyst in order to allow the dissection of the posterior aspect of the tumor, as described previously for large sublingual cysts (above mylohyoid muscle)<sup>4,5</sup>. The main advantage of this technique is avoiding a cervical incision for aesthetic reasons. Disadvantages are a poorer exposure with inherent risks for important anatomical structures and an additional risk of malignant dissemination if the dermoid cyst has carcinomatous transformation of its epithelium, although this is a very rare situation in mouth floor dermoid cysts with only one reported case in the literature<sup>7</sup>. Even using this technique the largest reported dermoid cyst resected this way measured only 7,5 cm<sup>4</sup>.

Our chosen surgical approach was initially by cervicotomy as the submandibular extension of the tumor was beyond the hyoid bone. The patient was forewarned of the eventual necessity of a combined approach but the intraoperative findings revealed that it was unnecessary. After the mid-division of the mylohyoid and lateral retraction of geniohyoid muscles, an adequate surgical exposure of sublingual space was achieved and the cranial part of the cyst could be dissected safely from both Wharton ducts and sublingual glands. There is only one report of a large (12cm) transmylohyoid cyst resected by exclusive cervical approach<sup>8</sup>. It was made in emergency circumstances since an infection of the cyst

led to an acute enlargement and consequent respiratory distress. The authors describe a perforation of the cyst during the resection, probably for technical difficulties due to the infection but, even in this situation, they also report an adequate surgical exposure by exclusive cervical approach.

### CONCLUSIONS

Different surgical approaches and techniques for resection of mouth floor dermoid cysts have been reported in the literature. Most of them can be resected by intraoral approach with some advantages but have limitations in large tumors. Exclusive cervical approach is a feasible surgical technique for resection of these large floor mouth dermoid cysts. Combined approach should be considered in predictable more difficult surgeries like infected cysts, reoperations or malignant suspicion.

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