CASE REPORT

Dermoid cyst of the submandibular space

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INTRODUCTION

Nonsalivary cysts of the suprahyoïd neck in children are usually congenital. Thyroglossal tract cysts (on the midline) contribute 55% of cases, followed by cystic hygromas (cystic lymphangioma) with 25% of cases, branchial cysts (16%), thymic cysts, and laryngoecele (4%) and dermoid and epidermoid cysts (3.7%) [1]. We report a case of dermoid cyst in an uncommon location, the submandibular space. Our case-report underscores the key role for magnetic resonance imaging (MRI) in the diagnosis and treatment of these lesions.

CASE-REPORT

A 15-year-old presented in May 2002 with a swelling in the right submandibular region that had developed gradually over the last 4 years without pain, flares of inflammation, or episodes of infection or fever. The patient was in good general health. A 6-cm swelling that was firm and nontender to palpation was felt in the submandibular space. The overlying skin and mucosa of the floor of the mouth were normal. Clear saliva was issuing from the right Wharton duct. Ultrasonography showed a tissue mass consistent with a branchial cyst or a dermoid cyst. The right submandibular gland was not visualized. MRI disclosed a sharply demarcated mass generating a uniform liquid signal and located under the right mylohyoid muscle, without spread to adjacent structures (Figures 1 and 2).

Surgery was performed under general anesthesia through a Sebilleau incision. A well-encapsulated,
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![Figure 2: Magnetic resonance imaging, sagittal section.](image)

Mass generating heterogeneous low signal on this T1-weighted image, with foci of slightly higher signal indicating fatty masses.

![Figure 3: Histological section through the cyst.](image)

Keratin lamellae in the lumen and multiple sweat glands within the wall.

**DISCUSSION**

Dermoid cysts form during embryonic development either via sequestration of ectodermal tissue or via failure of the ectoderm to separate from the mesoderm, usually between week 3 and week 5 of gestation [2]. About 7% of all dermoid cysts arise in the head and neck; among them, 23% are located at the floor of the mouth, and among these 6% develop in the submandibular space [3].

Dermoid cysts of the floor of the mouth are usually diagnosed in the second or third decade of life. A slow-growing swelling in the side of the neck above the hyoid bone is the typical presentation. There are no swallowing or breathing disorders. A neonatal case of double dermoid cyst in a submental and sublingual location has been reported [4].

The main differential diagnoses are cyst of the first branchial cleft and cystic lymphangioma. Thyroglossal tract cysts are located on the midline.

Ultrasoundography shows a mass that is partially or completely filled with fluid, which is seen as hypoechogenic areas with posterior enhancement. On MRI scans, dermoid cysts typically generate low signal on T1 images and high signal on T2 images. However, fatty masses within the cyst may be seen as foci of slightly higher T1 signal. Cystic lymphangiomas contain two components, a tissue component that generates isointense signal on T1 images and high signal on T2 images and a cystic component that generates fluid-intensity signals. Thus, MRI findings suggest the histological diagnosis. MRI also allows an accurate evaluation of the relations with neighboring structures, most notably the mylohyoid muscle, which govern the selection of the surgical approach [5].

Surgical excision of the cyst is mandatory. An intraoral incision is used for cysts located at the floor of the mouth above the mylohyoid muscle and a neck incision for cysts located in the submandibular space.

Gross examination shows a well-encapsulated mass filled with yellowish pasty material. According to the classification scheme developed in 1955 by Mayer [6], epidermoid cysts have a lining composed only of epithelial cells, dermoid cysts also contain skin adnexa (hair follicles, sebaceous glands, and sweat glands), and teratoid cysts contain both epithelial and nonepithelial components.
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CONCLUSION

Dermoid cyst is a congenital abnormality that rarely arises in the submandibular space. The most common location at the head and neck is the orbit, followed by the submandibular space. A swelling is usually the only clinical manifestation. A fat signal on T1 images suggests the diagnosis. Although dermoid cysts are benign, they must be removed surgically to allow a histological evaluation and to prevent complications due to growth of the cyst, such as impingement on adjacent structures and deformities of the head and neck.

REFERENCES