

Dermoid Cyst in the Floor of the Mouth

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Section: Head & neck imaging

Imaging Technique: MR

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Case Type: Clinical Cases

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Patient: 30 years, female

Clinical History:

consulted as an out-patient the ENT-department with swallowing problems. Physical examination revealed a soft palpable mass in the floor of the mouth. Because she was pregnant an MRI study of the mouth and neck region was performed.

Imaging Findings:

A 30-year-old woman consulted as an out-patient the ENT-department with swallowing problems. Physical examination revealed a soft palpable mass in the floor of the mouth. Because she was pregnant an MRI study of the mouth and neck region was performed.

Discussion:

Dermoids and epidermoids, both ectoderm-lined inclusion cysts, are considered a rare finding in the floor of the mouth. They differ in complexity: epidermoids have only a squamous epithelium; dermoids contain also dermal adnexa like hair, sweat glands and sebaceous glands in their squamous epithelium. The highest incidence occurs in patients between 15 and 35 years. These cysts are slowly growing and painless. Tongue elevation can cause swallowing and speaking disturbances. On CT and MR, epidermoid cysts usually have attenuation and signal intensity values similar to water. Occasionally, the cyst contents may have slightly negative attenuation values on CT, and a signal intensity slightly higher than water on T1-weighted MR images. The ratio of keratin (protein) to cholesterol (lipid) is variable in epidermoid cysts. Epidermoid cysts do not show the low attenuation values (-60 to -90 HU) of true (adipose) fat. A surrounding capsule of collagen can be seen. Dermoid inclusion cysts may have a more complex imaging appearance. Because of their dermal adnexa, the cyst wall is thicker. This thicker lining can calcify and enhance with contrast material. The sebaceous, lipid material in a dermoid has attenuation and signal intensity characteristics that simulate those of fat on both CT and MR imaging. Sometimes a dermoid does not have these radiologic characteristics and is indistinguishable from an epidermoid. Controversial findings – radiological signs of a dermoid (prominent lipid) with a histological diagnosis of epidermoid – must be handled cautiously, since failure to see the appendage structures (indicative of a dermoid) may be due to incomplete wall sampling or inadequate pathologic review. The differential diagnosis of a cystic lesion of the floor of the mouth includes ranula, thyroglossal duct cyst and cystic hygroma. The MRI findings are compatible with a cystic mass, as suggested by the hyperintensity on T2. The mass is also hyperintense on T1, possibly due to lipid or viscous material. Histologic examination after resection revealed the diagnosis of an epidermoid cyst.

Differential Diagnosis List: Dermoid Cyst in the Floor of the Mouth

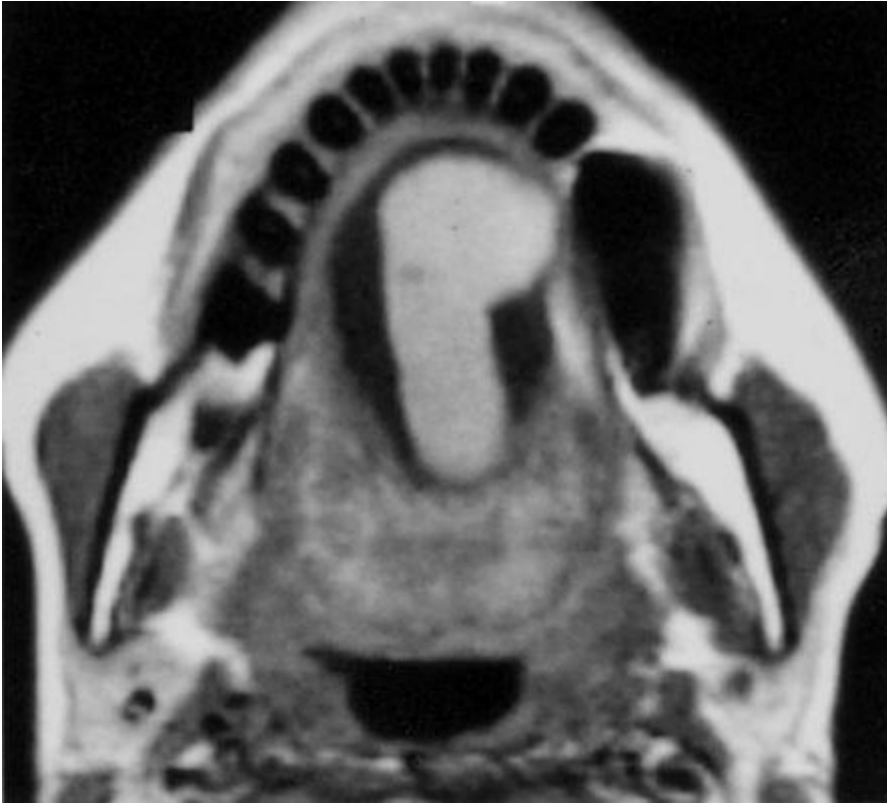
Final Diagnosis: Dermoid Cyst in the Floor of the Mouth

References:

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- Potts M, Macleod RI, McLean NR et al. The value of magnetic resonance imaging in the assessment of a sublingual epidermoid cyst. *Dentomaxillofac Radiol* 1992; 21: 102-104. (PMID: [1397456](#))
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- Vogl TJ, Steger W, Ihrler S et al. Cystic masses in the floor of the mouth: value of MR Imaging in planning surgery. *AJR* 1993; 161: 183-186. (PMID: [8517299](#))

Figure 1

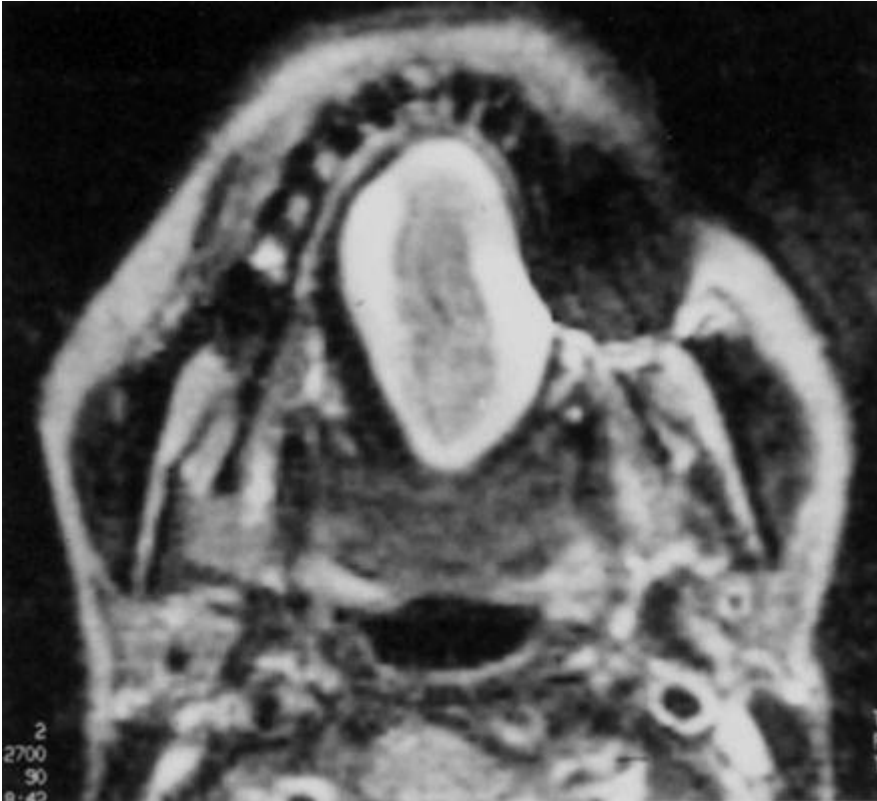
a



Description: Axial SE T1-weighted MR image shows a large well-circumscribed mass in the floor of the mouth (diameter 6-4 cm) with central hyperintense material and a thick hypointense wall. **Origin:**

Figure 2

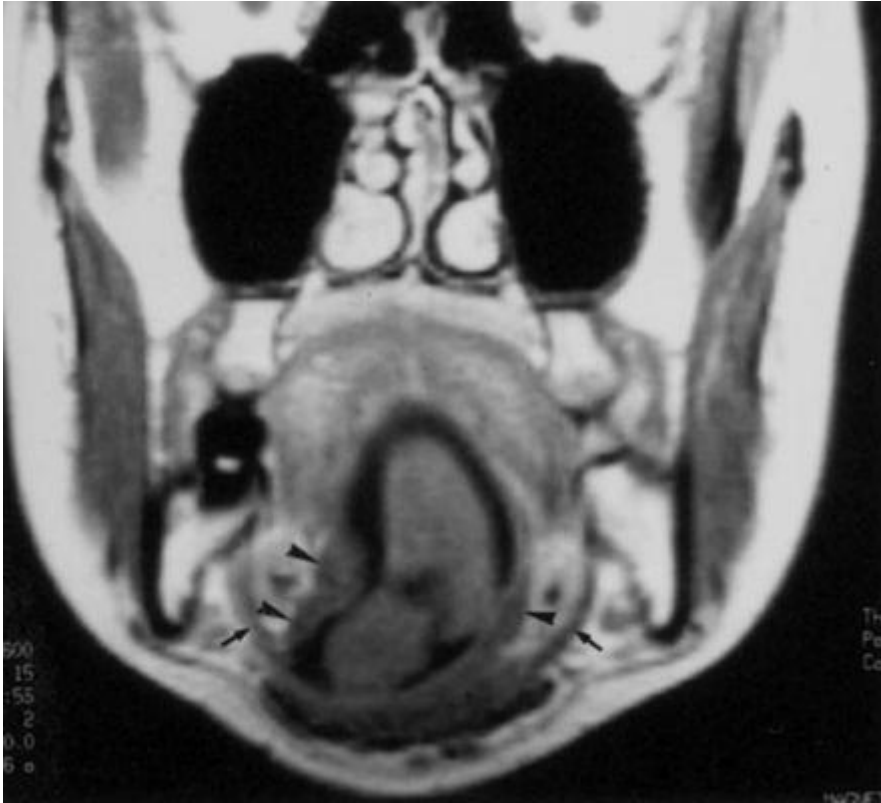
a



Description: On axial SE T2-weighted MR image the mass shows a highly intense signal (less intense in the center), and a hypointense wall. **Origin:**

Figure 3

a



Description: Gadolinium-enhanced T1-weighted MR images better demonstrate the topographic relationship of the mass to the surrounding muscles. Coronal T1-weighted MR image shows mass located above the mylohyoid muscle (arrows), between the geniohyoid and genioglossal muscles (arrowheads). **Origin:**

b



Description: On sagittal T1-weighted MR image (midline section) the mass appears located cranially to the geniohyoid/mylohyoid muscles, displacing the intrinsic tongue muscles. The MRI findings are compatible with a cystic mass, as suggested by the hyperintensity on T2. The mass is also hyperintense on T1, possibly due to lipid or viscous material. Histologic examination after resection revealed the diagnosis of an epidermoid cyst. **Origin:**