

## SUBLINGUAL EPIDERMOID CYSTS

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THE following four cases of true epidermoid cysts arising in the floor of the mouth have been observed in 54,000 surgical specimens examined in the Pathologic Laboratory of St. Luke's Hospital, New York, during the past 40 years. Each of the four cysts was lined with stratified squamous epithelium and two contained hairs or hair follicles.

**Case 1.**—I. S., female, age 16, was admitted to St. Luke's Hospital December 9, 1900, Service of Dr. Robert Abbe. A small lump was noticed on the floor of the mouth beneath the tongue when the patient was age eight. At first it increased only slightly in size, but during the past few years its growth had been more rapid. At one time the tumor had opened and discharged a small quantity of thick, yellowish fluid tinged with blood.

*Examination* showed a soft, fluctuating tumor mass which could be seen and felt beneath the chin and which projected into the floor of the mouth beneath the tongue. It occupied a midline position. At operation the tumor was aspirated and removed through a transverse incision in the floor of the mouth. The mass was soft, cystic, bean-shaped, and measured 5 by 4 by 2.5 cm. The contents of the sac were yellow, greasy and contained a few hairs. Histologic study showed the cyst to be lined with stratified, squamous epithelium, with underlying sebaceous glands and hair follicles.

The patient was discharged, apparently cured, on the fourth postoperative day. No follow-up record is available.

**Case 2.**—D. S., male, age 2½ years, was admitted to St. Luke's Hospital December 18, 1929, Service of Dr. Frank S. Mathews. A mass in the floor of the mouth was first noticed shortly after birth. It had gradually increased in size but had not produced any symptoms. There were no other congenital abnormalities.

*Examination* showed a cystic mass about 1 cm. in diameter situated in the floor of the mouth just lateral to the midline. It was nontender, did not fluctuate and was not fixed. A clinical diagnosis of a dermoid cyst of the floor of the mouth was made. At operation the cyst was opened, emptied of its contents and the wall excised. The specimen measured 1 by 0.75 by 0.2 cm. Histologic study showed a very thin-walled cyst with a lining which was intact in some areas and composed of squamous epithelium. Other areas of the lining were considerably altered by inflammatory changes and underlying fibrosis. There was lymphoid infiltration throughout but no evidence of malignancy.

The patient was discharged on the second postoperative day. No follow-up record is available.

**Case 3.**—L. P., male, age 2½ years, was admitted to St. Luke's Hospital June 9, 1933, Service of Dr. Henry H. M. Lyle. A painless tumor was first noticed under the tongue and beneath the chin when the patient was about 18 months old. The mass had steadily increased in size but had not reached proportions where it interfered with talking or eating.

*Examination* showed a small reddish protuberance at the opening of the left sublingual duct. Beneath the mandible in the neck, to the left of the midline, there was a soft, smooth, freely movable, nontender, fluctuant mass about 5 cm. in diameter. At operation a transverse incision was made through the mucous membrane of the floor of the mouth,

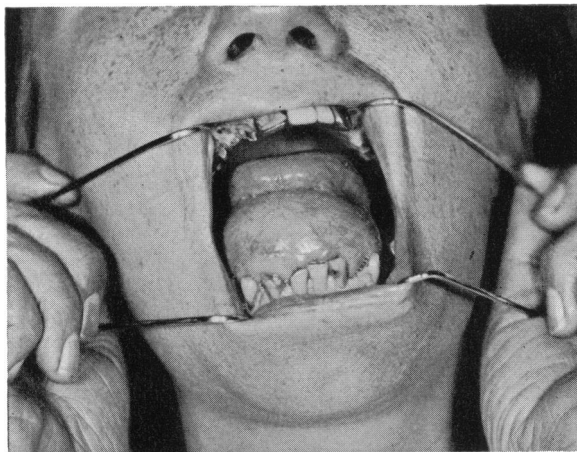


FIG. 1.—Case 4: Photograph of patient showing cyst in floor of mouth beneath tongue.

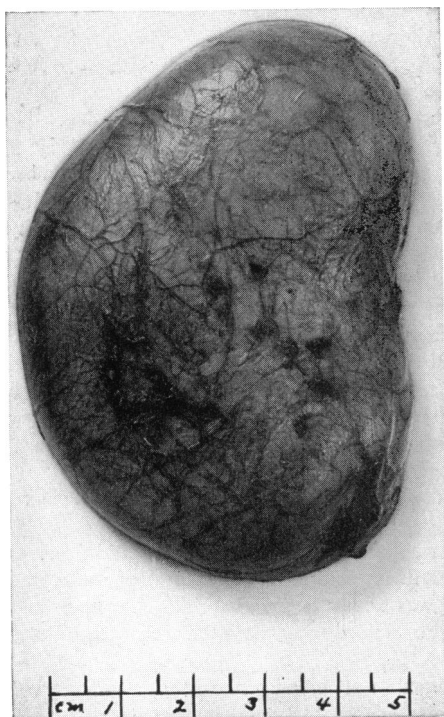


FIG. 2.—Case 4: Photograph of excised specimen.

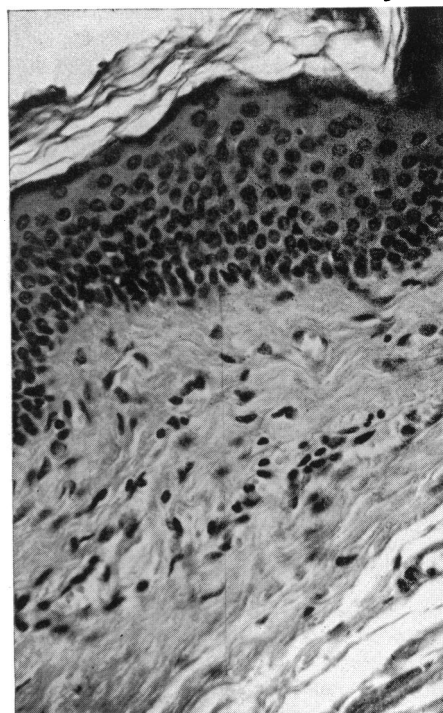


FIG. 3.—Case 4: Photomicrograph of cyst wall showing the inner lining of stratified squamous epithelium supported on a definite connective tissue base.

pressure was applied to the cyst beneath the chin, and the mass was removed. The specimen was cystic and measured 4 by 3 by 3 cm. It was filled with yellowish-white, creamy material. Histologic study showed the lining to be composed of squamous epithelium which was somewhat inflamed. There was a slight papillary down-growth into the corium and loose connective tissue. Hair follicles and hypertrophic sweat glands, and one rather large duct lined with squamous epithelium containing desquamated cells, were also seen. The epithelial cells showed varying stages of atrophy and hyperplasia with some hyperkeratinization.

The patient was discharged, apparently cured, on the fourth postoperative day. No follow-up record is available.

**Case 4.**—E. A., female, age 37, was admitted to St. Luke's Hospital October 14, 1936. The patient had first noticed a mass beneath her chin about 20 years previously. It had gradually increased in size and had risen in the floor of the mouth, displacing the tongue upward. It was aspirated twice, eight years and six weeks ago, respectively, before admission to the hospital, with only temporary relief.

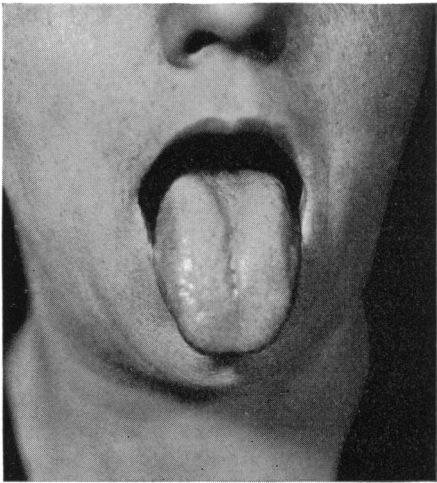


FIG. 4.—Case 4: Photograph of patient after operation showing normal extension of tongue.

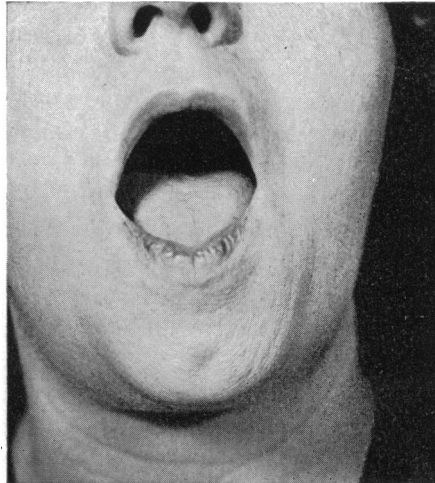


FIG. 5.—Case 4: Photograph of patient after operation showing tongue in normal position.

*Examination* showed a large, soft, non-tender cystic mass lying in the midline of the floor of the mouth and displacing the tongue upward (Fig. 1). It could also be seen and felt as a soft midline tumor beneath the chin in the submental region. A diagnosis of sublingual dermoid cyst was made. Under colonic ether anesthesia, a transverse incision was made over the cyst in the floor of the mouth. The mass was dissected from the surrounding structures and removed intact. The resulting dead space was partially obliterated by sutures and the remaining cavity was packed with iodoform gauze. The excised cyst measured 8 by 5 by 3 cm. (Fig. 2). The surface was smooth and the wall was thin. The cyst contained thick, white, cheesy material, but no hairs. Histologic study showed the lining to be composed of squamous epithelial cells supported on a layer of fibrous tissue. The epithelium had all the characteristics of cutaneous epithelium with a keratinized layer on the surface (Fig. 3). There were no hair follicles or sweat glands.

The patient was discharged on the third postoperative day. She has been seen at regular intervals since, is completely symptom-free, and has normal function of the tongue (Figs. 4 and 5).

*Discussion.*—Sublingual dermoid, or epidermoid cysts, are derived from fetal remnants in the mesobranchial field<sup>1</sup> and should be clearly differentiated from the more common ranulae. The latter are the result of cystic degenera-

tion in the sublingual gland, are usually unilateral and are lined by flattened cuboidal epithelium. They are thin-walled, contain a fluid resembling saliva, and are difficult to remove surgically without rupture. Sublingual epidermoid cysts, on the other hand, arise in a midline position, are lined with stratified squamous epithelium, and possess a definite connective tissue supporting framework, giving them a thicker and tougher wall and making surgical removal without rupture easy. Although these cysts arise in a midline position, increase in size may cause them to be displaced to one side so that they appear to have a unilateral origin. Other epithelial, cutaneous structures, such as hair follicles and sebaceous glands, may be present, as in two of the cysts herewith reported, but other congenitally misplaced remnants, such as nervous or osseous tissue, have not been observed.

*Treatment.*—Surgical excision is the treatment of choice for these cysts. Adequate exposure through a transverse incision in the mucous membrane overlying the cyst, gentleness, and sharp dissection with a knife or scissors, makes excision of the entire cyst wall and contents relatively simple. Although the cavity beneath the tongue which follows the removal of a cyst may be surprisingly large (Case 4) it can be completely obliterated by sutures and packing. Normal position and function of the tongue are to be expected following the operation. Aspiration, whether for diagnosis or relief of symptoms, has little to commend it, is rarely actually indicated, and may possibly lead to serious infection of the cyst wall and floor of the mouth.

Injection of various irritating, sclerosing solutions into all sorts and kinds of hollow structures, with little regard to the character of their lining or supporting wall, has been widely employed and recommended in the past few years, and was even seriously suggested as an elective form of treatment in Case 4. The principle underlying the obliteration of cavities lined with tissues of mesodermal origin by the production of irritation, fibroblastic proliferation and fibrosis, is relatively simple and easily understood. In the case of structures lined with various kinds and thicknesses of epithelium, however, the complete destruction to the last cell by a sclerosing solution must be accomplished before this fibroblastic activity and fibrosis can take place. This is quite a drastic form of therapy, highly uncertain as to its outcome, and can in no way be considered a satisfactory substitute for clean surgical excision. It is certainly to be condemned as a method of treatment of sublingual epidermoid cysts.

#### SUMMARY

Four cases of true epidermoid cysts arising in the floor of the mouth are reported. These cysts arise from fetal remnants in the mesobranchial field, are lined by stratified squamous epithelium, and should be clearly differentiated from the more common ranulae. Surgical excision while the cysts are still small and uninfected is the elective form of treatment.

#### REFERENCE

Semken, George H.: Nelson's Loose Leaf Surgery. Thomas Nelson & Sons, 2, 802-805.