

BRANCHIAL CLEFT CYST

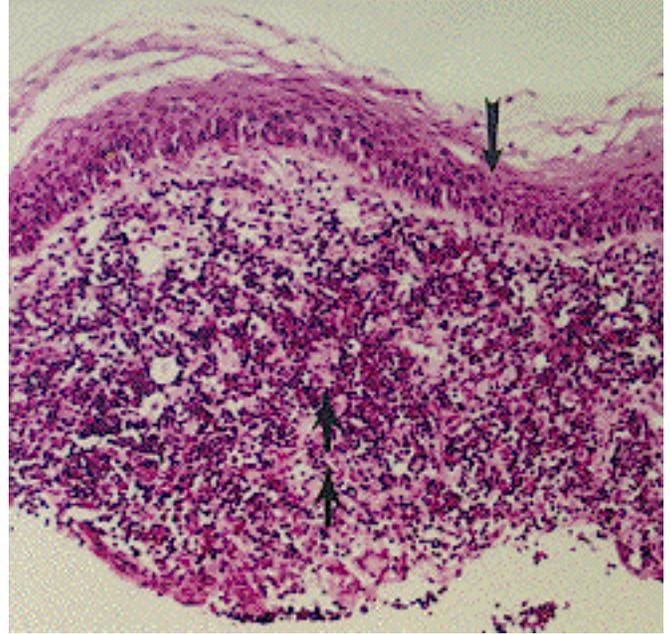
Branchial cleft (cervical lymphoepithelial) cysts derived from the second branchial apparatus present in the upper neck along the anterior border of the sternocleidomastoid muscle and are deep alongside the internal jugular vein. Their size varies greatly. They transilluminate well. If infected, they become tender. When aspirated, the contents are milky or purulent. Sometimes a sinus tract, rather than a cyst, is found. If the tract opens onto the surface of the skin it is called a fistula. The upper end of the sinus tract, rarely present, reaches to the tonsillar area.

Microscopically second branchial-cleft cyst is lined by squamous epithelium and the wall of the cyst contains prominent collections of lymphoid tissue, often with germinal centers. An occasional cyst contains respiratory epithelium, and a combination of both squamous and respiratory epithelium is not uncommon. Because of repeated infections, fibrosis of the cyst wall is common. An unusual cyst may contain additional ectodermal tissue and even mesodermal elements such as cartilage.

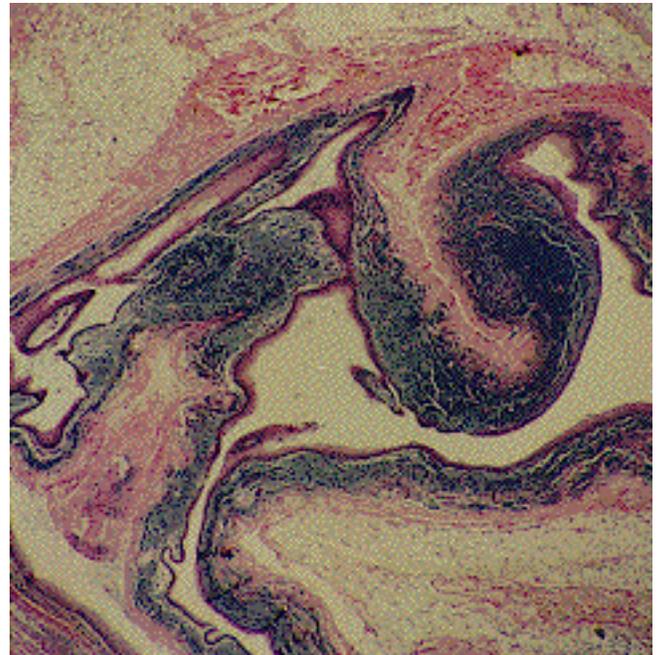
The first branchial apparatus may leave a cyst or fistulous tract (frequently infected) preauricularly with a fistula opening anterior to the tragus, or there may be cysts and sinus tracts in other locations about the ear above the level of the mandible. Work divided these disorders into Type I and Type II with Type I lesions showing only epidermal elements (like epidermoid cysts), and Type II lesions showing ectoderm with skin appendages and sometimes cartilage representing mesoderm. A cyst from the first branchial cleft may also be present within the parotid gland.

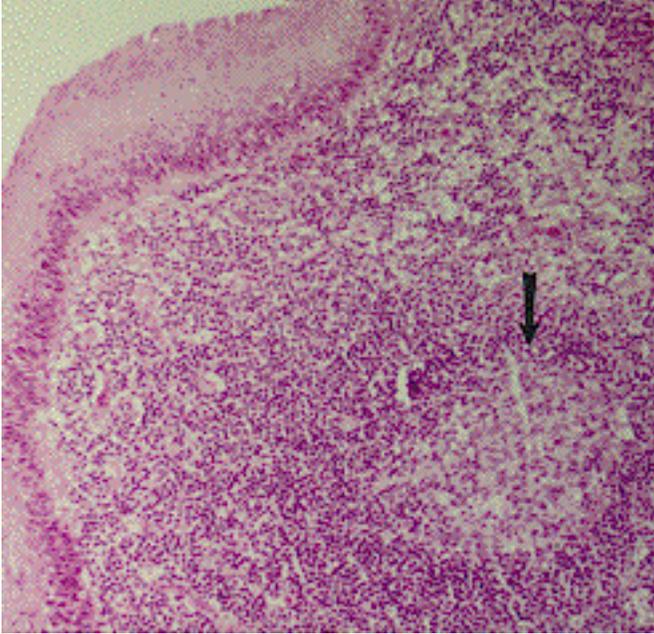
Rarely, the third branchial cleft persists in which case a cyst or sinus tract is associated with the pyriform recess in the hypopharynx.

Branchial cyst, neck, showing squamous epithelium (single arrow) on a base of lymphoid tissue (double arrows). The epithelium, like that of the tonsillar crypts, is freely permeable to lymphocytes.

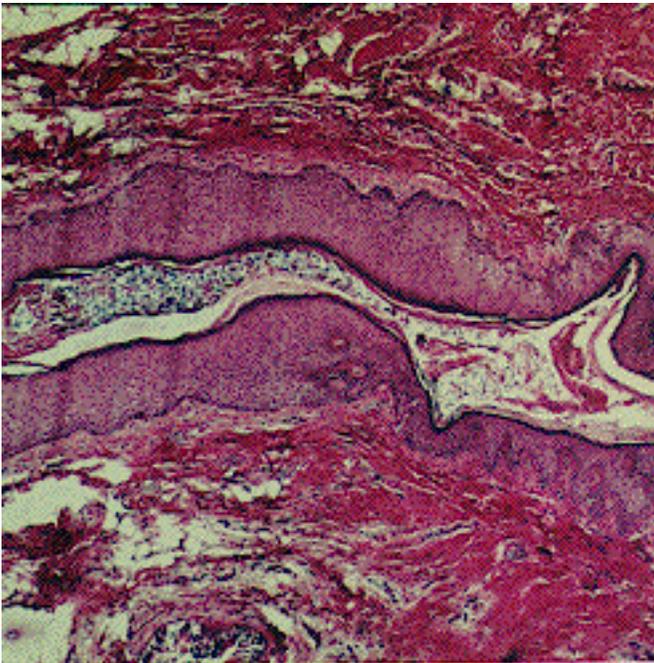


Branchial cyst, neck. Similarity of a branchial cyst to tonsillar tissue with its crypts and squamous lining and submucosal lymphoid tissue once gave the synonym, "tonsillar cyst."



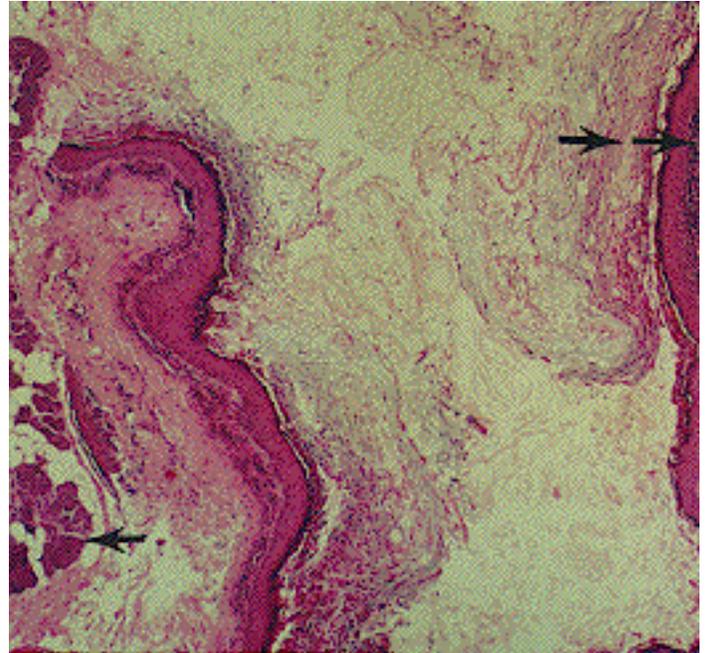


Branchial cyst, neck, showing lymphoid tissue with secondary follicle and germinal center (arrow).



Branchial fistula, first branchial apparatus, showing a pre-tragal fistulous tract lined by thick squamous epithelium. This is a Type I cyst with no dermal elements and no cartilage as would be seen in a Type II cyst. These fistulas may run deep under the ear toward the parotid and be difficult to remove. They are frequently infected. Note that there is no lymphoid tissue in the wall of this branchial fistula such as there is when the cyst or fistula is present in the neck.

Branchial cyst. This remnant of the first branchial cleft was located within the parotid gland (single arrow). The double arrows indicate the customary lymphoid tissue associated with squamous epithelium of the cyst. The keratin layer on surface of the epithelium desquamates and then liquifies centrally.



CLINICAL ASPECTS:

Although seen at any age, the second branchial cleft cyst or fistula is most common in young adults. The cyst enlarges only slowly unless it becomes infected and then there may be marked and sudden increase in size. Repeated infection is the case with a branchial fistula so that a drop of pus may ooze from a fistulous opening in the lower neck.

The only effective treatment is surgical removal of the cyst or fistula. In the case of the second branchial cleft the tract leads upward between the external and internal carotid arteries to the lower pole of the palatine tonsil, although usually the tract is obliterated and only the cyst or an inferior aspect of the tract remains.

Malignant transformation in the lining of a branchial cyst is reported but some supposed cases of malignant transformation have been demonstrated to be metastatic disease in a patient with an undetermined primary.