Branchial cleft cyst

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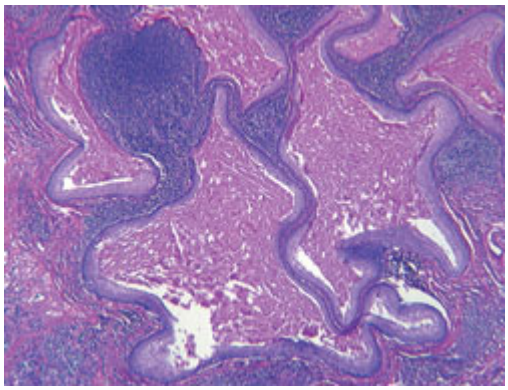

Figure 1. Multilocular cystic spaces are lined by a mature stratified squamous epithelium. The cavity is filled with keratinaceous debris. An lymphoid infiltrate is present in the background.

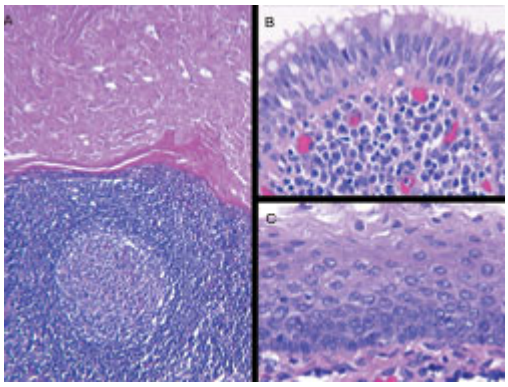

*Figure 2. The lymphoid aggregates form germinal centers **(A)** in a few cases. A respiratory epithelium **(B)** is less common than a stratified, keratinizing squamous epithelium **(C)**.*

A developmental alteration of the branchial clefts or pouches can result in cysts, sinuses, and/or fistulas. A branchial cleft cyst is a congenital abnormality usually located in the lateral neck along the anterior portion of the sternocleidomastoid muscle; it can also involve the ear and parotid salivary gland. There is no sex preference, and although the lesion usually presents clinically in young patients, older patients are occasionally affected as well. The cysts are typically nontender masses that may become secondarily inflamed or infected, which often brings them to clinical attention. Bilateral masses are associated with an increased likelihood of a syndrome.

A branchial cleft cyst is made up of a dense lymphoid infiltrate that is intimately associated with an epithelium-lined cyst or cysts (figure 1). There is ordinarily no separation between the lymphoid component and the epithelium. The cystic spaces are usually lined with squamous epithelium with keratinaceous debris filling the lumen, but respiratory-type epithelium can also be seen (figure 2). Germinal center formation is commonly seen in the lymphoid component, but a true lymph node architecture with sinus formation, a medullary region, or interfollicular zones is absent. With repeated cycles of infection and/or inflammation and resolution, fibrosis and granulation tissue with histiocytic debris will be all that remains of the cyst. The diagnosis is usually easy, but occasionally a very well-differentiated metastatic cystic squamous cell carcinoma from the tonsil can cause confusion. A lymphangioma may have lymphocytes but does not have an epithelial lining.

Surgical excision is the treatment of choice. It is best performed when the lesion is not infected or acutely inflamed.

Suggested reading

Verbin RS, Barnes L. Cysts and cyst-like lesions of the oral cavity, jaws and neck In: Barnes L, ed. Surgical Pathology of the Head and Neck. 2nd ed, vol. 3. New York: Marcel Dekker, 2001:1486-98.
Thompson LD, Heffner DK. The clinical importance of cystic squamous cell carcinomas in the neck: A study of 136 cases. Cancer 1998;82:944-56.