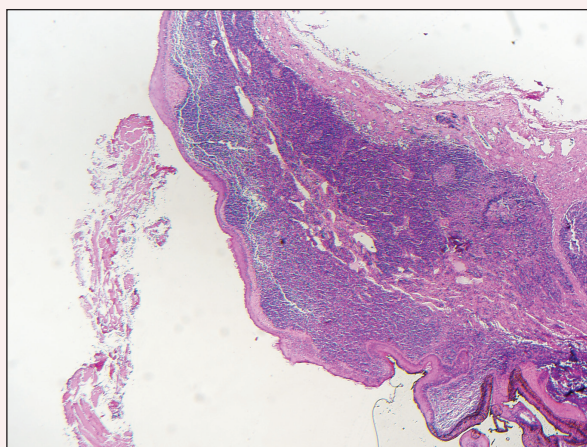


Enlarging Mass on the Lateral Neck

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H&E, original magnification $\times 4$.

A 14-year-old adolescent boy presented with a nontender mass on the left lateral neck. The mass had been present since birth but had recently grown in size.

The best diagnosis is:

- a. branchial cleft cyst
- b. bronchogenic cyst
- c. median raphe cyst
- d. steatocystoma
- e. thyroglossal duct cyst

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Branchial Cleft Cyst

Cystic lesions present in a myriad of ways and often require histopathologic examination for definitive diagnosis. Correct identification of the cells comprising the lining of the cyst and the composition of the surrounding tissue are utilized to classify these lesions.

Branchial cleft cysts (quiz image, Figure 1) most commonly present as a soft tissue swelling of the lateral neck anterior to the sternocleidomastoid; they also can present in the preauricular or mandibular region.^{1,2} Although the cyst is present at birth, it typically is not clinically apparent until the second or third decades of life. The origin of branchial cleft cysts is subject to some debate; however, the prevailing theory is that they result from failure of obliteration of the second branchial arch during development.¹ Histopathologically, branchial cleft cysts are characterized by a stratified squamous epithelial lining and abundant lymphoid tissue with germinal centers.^{3,4} Infection is a common reason for presentation and excision is curative.

Bronchogenic cysts (Figure 2) present as midline lesions in the suprasternal notch and can present clinically due to compression of the airway.⁵ They develop as anomalies of the primitive foregut, budding off of the tracheobronchial tree. Similar to respiratory tissue, they are lined with a ciliated pseudostratified columnar epithelium and contain goblet cells. Concentric smooth muscle often surrounds the cyst and cartilage may be present.⁴ Excision is curative and recommended if the cyst encroaches on vital structures.

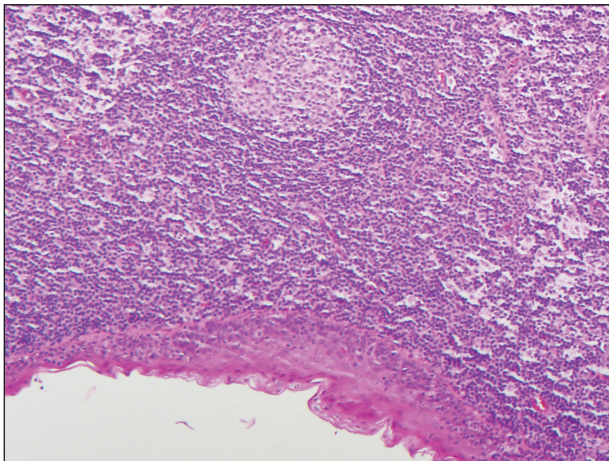


Figure 1. Branchial cleft cyst demonstrating lymphoid follicles (H&E, original magnification $\times 40$).

Median raphe cysts occur most commonly on the ventral surface of the penis on or near the glans (Figure 3). These cysts are thought to result from anomalous budding from the urethral epithelium, though they do not maintain contact with the

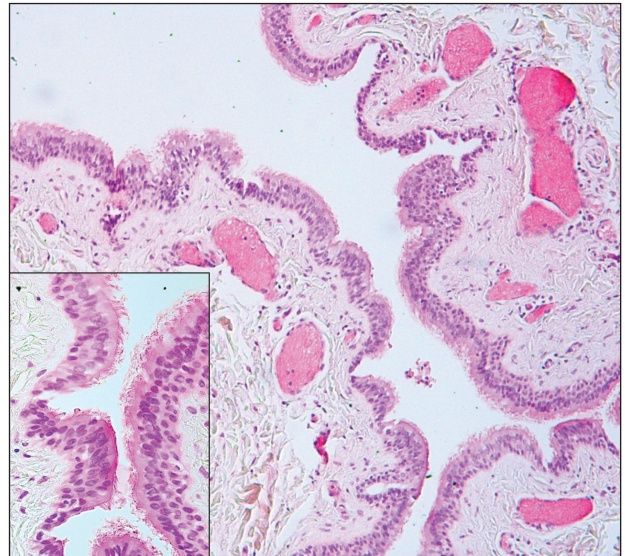


Figure 2. Bronchogenic cyst demonstrating ciliated respiratory epithelium and concentric smooth muscle (H&E, original magnification $\times 20$). The inset shows a high-power view of the ciliated respiratory epithelium (H&E, original magnification $\times 40$).

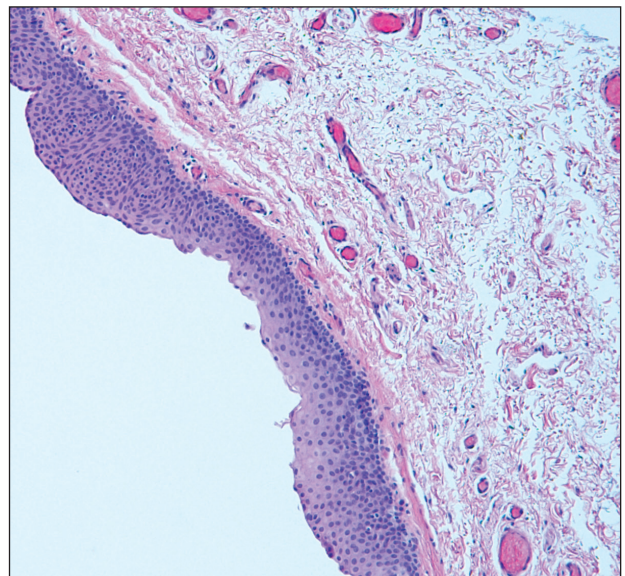


Figure 3. Median raphe cyst demonstrating transitional epithelium, delicate collagen, and numerous small vessels (H&E, original magnification $\times 20$).

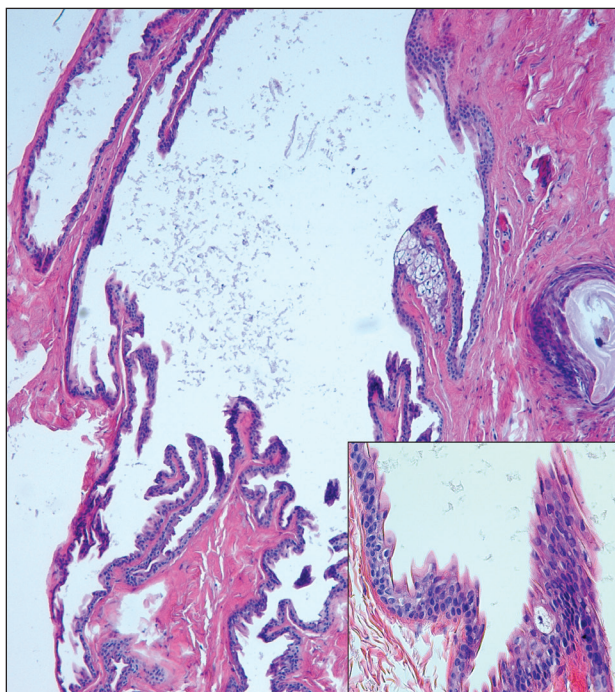


Figure 4. Steatocystoma demonstrating eosinophilic “shark tooth” cuticle and sebaceous glands within the cyst wall (H&E, original magnification $\times 10$). The inset shows a high-power view of the eosinophilic shark tooth cuticle with an adjacent sebaceous gland (H&E, original magnification $\times 40$).

urethra.³ The lining varies in thickness from 1 to 4 cell layers and mimics the transitional epithelium of the urethra. Amorphous debris often is seen within the cyst, and surrounding genital tissue can be appreciated by identification of delicate collagen, smooth muscle, and numerous small nerves and vessels.^{3,4} Excision is curative and often is sought when the cyst becomes irritated or cosmetically bothersome.

Steatocystomas can present as solitary (steatocystoma simplex) or multiple lesions (steatocystoma multiplex)(Figure 4). They present as small, well-defined, yellow cystic papules most commonly on the chest, axilla, or groin.² Their lining is composed of a stratified squamous epithelium that lacks a granular layer and contains a distinct overlying corrugated “shark tooth” eosinophilic cuticle. Sebaceous lobules are characteristically present along or within the cyst wall.^{3,4} Excision is curative and treatment often is sought for cosmetic purposes.

Similar to bronchogenic cysts, thyroglossal duct cysts (Figure 5) present on the midline neck, though

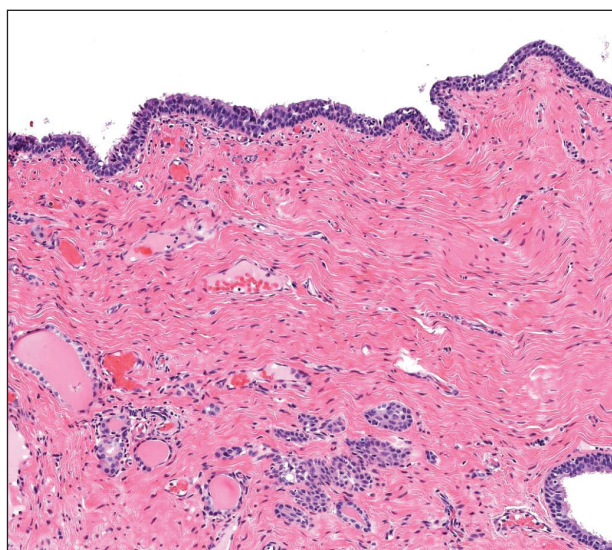


Figure 5. Thyroglossal duct cyst demonstrating surrounding thyroid follicles (H&E, original magnification $\times 10$).

they characteristically move with swallowing. The thyroglossal duct develops as the thyroid migrates from the floor of the pharynx to the anterior neck. Remnants of this duct result in the thyroglossal duct cyst.² These cysts contain a respiratory-type epithelial lining and are distinguished by distinct thyroid follicles and lymphoid aggregates surrounding the cyst wall. Unlike bronchogenic cysts, they do not contain smooth muscle.^{3,4} Excision is curative.

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