

Mucocele: Retention and Extravasation Types

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The most common non-neoplastic lesion of salivary gland tissue is the mucocele (also called *sialocele* and *ptyalocele*). A mucocele is defined as the pooling of mucin in a cystic cavity. Two types of mucoceles are recognized: (1) the *retention* type, in which the mucin pooling is confined within a dilated excretory duct or cyst, and (2) the *extravasation* type, in which mucin is spilled into the connective tissues from a ruptured or traumatized salivary gland duct.

The extravasation type is the most common mucocele, more common in children and young adults, with a peak in the second decade of life. The lower lip is the most commonly affected site, followed by the floor of the mouth and ventral tongue. Patients present with a dome-shaped swelling, often with a blue hue due to the extravasated mucin. If small, the lesion may appear as a blister. Within the floor of mouth, the term *ranula* may be applied to mucin which dissects into the mylohyoid muscle, resulting in chin or upper neck swelling (*rana* in Latin means frog, and *ranula* is used since it looks like a frog's underbelly clinically). When large, a ranula may actually interfere with speech by elevating the tongue. In general, excision of the lesion to include adjacent minor mucoserous glands will reduce the chance of recurrence.

Macroscopically, mucoceles range in size from millimeters to several centimeters, depending on the location. Histologically, two patterns are seen: an intact epithelium-lined duct, which is dilated to form a cyst, filled with mucin and inflammatory debris; or extravasated mucin within the stroma, often associated with granulation tissue, a brisk inflammatory response, and foamy histiocytes, *without* epithelium (figures 1 and 2). The macrophages contain phagocytosed mucin. When present in the sample, adjacent minor mucoserous glands may show chronic or sclerosing sialadenitis.

Figure 1. Left: A low-power field shows an intact squamous mucosa subtended by a large collection of mucus. Note the histiocytes at the periphery. There is no epithelial lining. Minor mucoserous glands are present (lower field). Right: Histiocytes line the periphery of this cyst, lacking epithelium (extravasation-type mucocele).

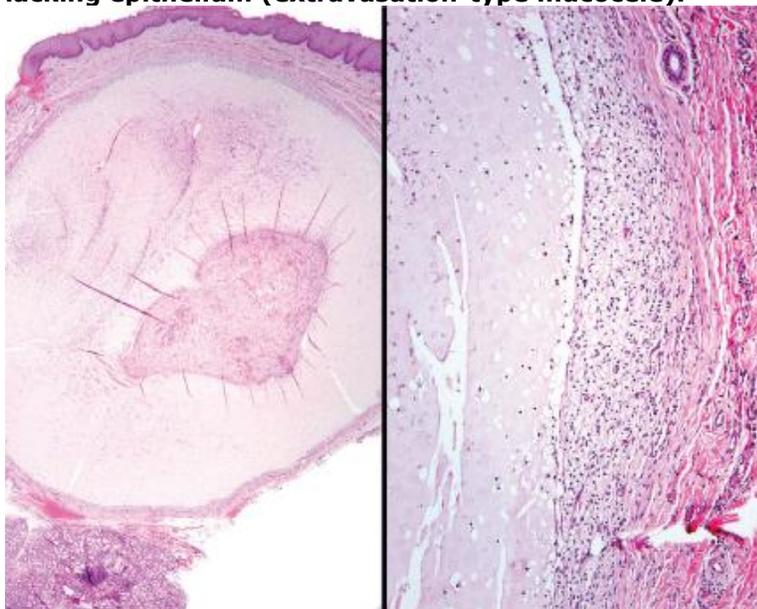
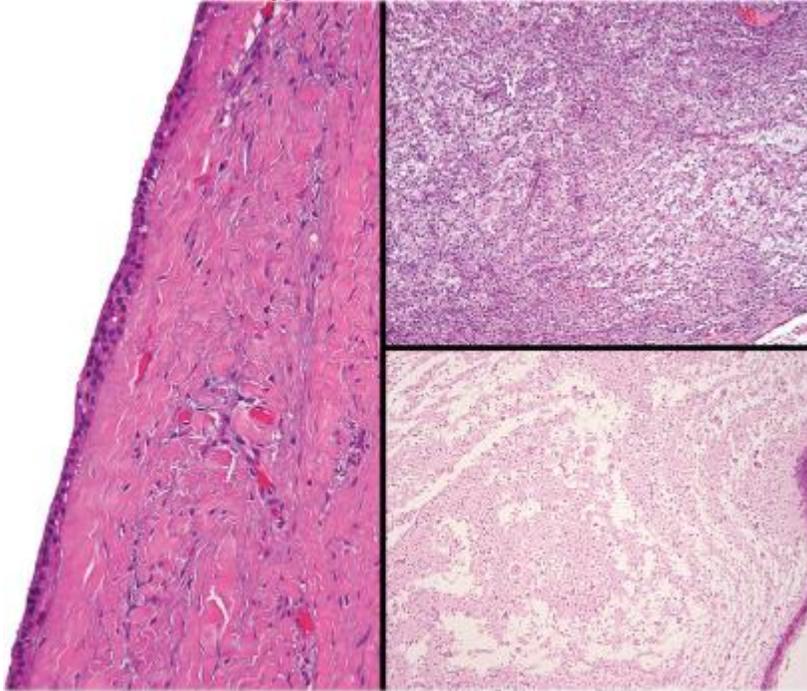


Figure 2. Left: A squamous-lined cyst with heavy subepithelial fibrosis is seen in this retention-type mucocele. Top right: Sheets of histiocytes filled with mucus can sometimes mimic a mucoepidermoid carcinoma. Bottom right: Histiocytes and inflammatory cells fill the lumen of this extravasation-type mucocele.



Although the diagnosis of a mucocele is usually straightforward, if there are abundant muciphages, they may simulate a mucoepidermoid carcinoma or an infiltrating signet-ring adenocarcinoma (figure 2). The lack of an intermediate cell component, true mucocytes, mitoses, invasive growth, and cellular pleomorphism should allow for elimination of these differential diagnoses.

Suggested reading

1. Granholm C, Olsson Bergland K, Walhjalt H, Magnusson B. Oral mucoceles; extravasation cysts and retention cysts. A study of 298 cases. *Swed Dent J* 2009; 33 (3): 125-30.
2. Harrison JD. Modern management and pathophysiology of ranula: Literature review. *Head Neck* 2010; 32 (10): 1310-20.
3. Nico MM, Park JH, Lourenco SV. Mucocele in pediatric patients: Analysis of 36 children. *Pediatr Dermatol* 2008; 25 (3): 308-11.

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