Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 8 Issue 4 April 2025

Editorial

Bleb and Aqueduct-Salivary Duct Cyst

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Received: February 07, 2025

Published: March 01, 2025

Salivary duct cyst is a reactive lesion arising on account of duct obstruction and impaction of mucin within salivary gland ducts. The lesion is engendered due to mucus entrapped within duct lumen consequent to salivary gland duct obstruction and occurs within oral mucosal sites, minor salivary glands or parotid gland. Intense obstruction of salivary duct may induce squamous metaplasia or oncocytic metaplasia of dual epithelial layer coating the ducts. Secondary infection may ensue circumscribing nidus of a sialolith.

Additionally designated as salivary retention cyst, mucus retention cyst, mucus duct cyst, sialocyst or reactive oncocytoid cyst for lesions demonstrating significant oncocytic metaplasia of layering epithelium, a distinction from oral lesions as mucocoele, mucus extravasation phenomenon, ranula, plunging ranula or mucus escape reaction is necessitated.

Salivary duct cyst manifests <10% of salivary glands and is especially associated with conditions arising within major salivary glands. Neoplasm commonly arises within the sixth decade. Median age of disease emergence is 56 years [1,2]. An equivalent gender predilection is encountered. Alternatively, a mild female preponderance may ensue [1,2].

In contrast to mucocoele of oral cavity, salivary duct cyst is exceptionally observed. Notwithstanding, lesion may be confined to minor salivary glands situated upon floor of mouth, vestibule or muco-buccal fold, buccal mucosa or upper labial mucosa. Lesion is infrequently discerned within the lower lip. Additionally, major salivary glands as the parotid gland may be implicated [1,2]. In contrast to mucocoele of oral cavity, salivary duct cyst is a true developmental cyst layered by a distinct epithelial lining. The lesion is posited to arise due to occlusion of salivary duct with consequent reactive ductal ectasia [1,2]. Although mechanics of duct obstruction remain uncertain, occurrence of mucus plugs, calculi and postoperative or post-inflammatory strictures may induce the lesion. Advancing age induces decimation of salivary secretions, a feature which may engender a mucus plug with consequent obstruction of salivary gland ducts. Subsequently, raised intraluminal pressure induces duct dilatation [2,3]. Alternatively, constriction of salivary duct occurs with fragrant mouthwashes, products with significant quantities of hydrogen peroxide or toothpastes curbing tartar accumulation. Minimal enhancement of luminal pressure appears due to contiguous outflow of recreated saliva with consequent induction of ductal dilatation [2,3]. Distal obstruction of salivary duct engenders retention of salivary secretion within the duct. Lesion may be accompanied by conditions as sialolith, mucus plugs and postoperative or post-inflammatory strictures. Salivary gland cyst represents as a gradually progressive, dome shaped, sessile, asymptomatic nodule. Lesion magnitude varies from one centimetre to 3 centimetres although cysts of up to 10 centimetres may be encountered [2,3]. On palpation, a fluctuant, painless lesion is observed. Firm lesions are concordant with sialoliths. Palpation of ducts with secondary infection delineates a distended duct orifice which may exude mucus or pus. Cyst may depict a bluish hue on account of 'Tyndall' effect. Cyst magnitude appears consistent and variation within definitive duration of cyst existence appears absent [2,3]. Grossly, a soft, nodular tumour mass is encountered.

Tissue obtained with surgical sampling may depict sialolith and bacteria with consequent occurrence of secondary infection [2,3]. Upon microscopy, foci of mucoid secretion appears circumscribed by dual layer of stratified cuboidal or columnar salivary duct epithelium. Papillary infolding of epithelial layer of the cyst into cyst lumen may occur. Alternatively, squamous or oncocytic metaplasia of cyst epithelial layer may appear, concurrent with severe duct obstruction. Adjacent salivary gland may display morphological features as duct obstruction, variable ductal dilation, periductal infiltration with small lymphocytes along with fibrosis of duct and adjoining salivary gland parenchyma [3,4].

Table: Soft tissue non odontogenic cysts of oral cavity [4,5].

●Salivary cysts and salivary duct cysts ●Cysts of lymphatic tissue origin ●Cystic hygroma ●Lymphoepithelial cysts ●Dermoid and epidermoid congenital cysts ●Nasolabial cyst ●Thyroglossal duct cyst

Staging of malignant salivary gland tumours is designated as [5,6].

•Stage 0: Tis, N0,M0 •stage I: T1, N0, M0 •stage II: T2, N0, M0 •stage III: T3, N0, M0 OR T0, T1, T2, T3, N1, M0 •stage IVA: T0, T1, T2, T3 or T4a, N2, M0 OR T4a, N0 or N1, M0 •stage IVB: Any T, N3, M0 OR T4b, any N, M0 •stage IVC: Any T, any N, M1.

Salivary duct cyst appears to be immune reactive to cytokeratin CK5/6 and AE1/AE3. Tumour cells may be highlighted by mucicarmine, Alcian blue and Periodic acid Schiff's stain with diastase (PASD). Tumour cells appear immune non reactive to CD68 [4,5]. Salivary duct cyst requires segregation from lesions as mucocoele, mucus extravasation phenomenon, ranula, plunging ranula, mucus escape reaction, Warthin's tumour or papillary cystadenoma lymphomatosum, papillary cystadenoma or gingival cyst arising within adults [4,5]. Appropriate detection of salivary duct cyst is contingent to cogent clinical history, clinical examination and precise histopathological evaluation. Salivary duct cyst may be appropriately eradicated by cryosurgery, carbon dioxide laser or standardized surgical extermination of the neoplasm [4,5]. Salivary duct cyst may be alleviated by comprehensive surgical extermination of the lesion in concurrence with removal of parent minor salivary gland. Iatrogenic or intraoperative disruption of adjacent salivary gland parenchyma may contribute to emergence of postoperative mucocoele. Partial or total eradication of adjoining major salivary glands may be necessitated [4,5]. Adoption of chlorhexidine mouth rinse or oral antibiotics appears efficacious for treating secondary infection associated with salivary duct cysts. Besides, sialagogues may decimate possible occurrence of salivary stasis within distended ducts through activation of outflow of salivary secretion [4,5]. The benign cyst is associated with superior prognostic outcomes [4,5].

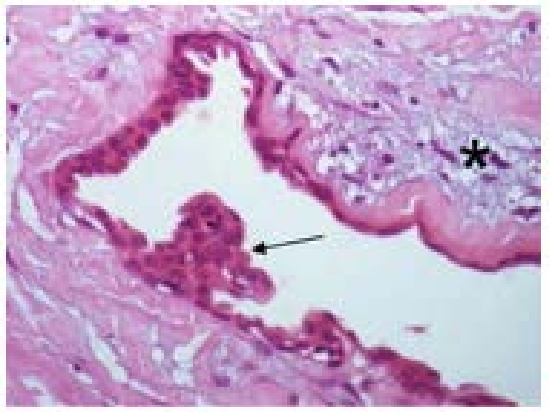

Figure 1: Salivary duct cyst demonstrating dual layer of columnar epithelium lining the cyst wall with papillary infolding. Surrounding stroma is fibrotic and mildly inflamed [6].

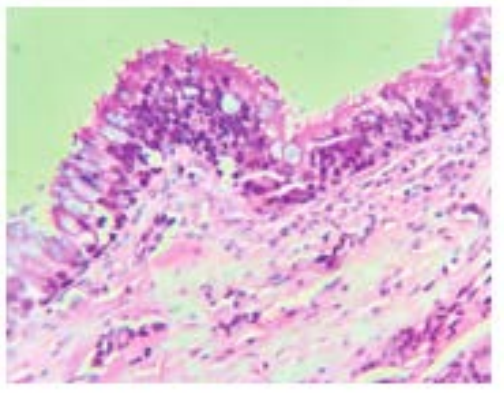

Figure 2: Salivary duct cyst delineating stratified columnar epithelium lining the cyst cavity superimposed upon a fibrotic, mildly inflamed stroma [7].

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6. Image 1 Courtesy: Springer link

7. Image 2 Courtesy: Intech open