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Familiar and unfamiliar pseudoneoplastic lesions of the head and neck

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ABSTRACT

Pseudoneoplastic lesions in the head and neck are numerous. Familiarity with the sites of predilection and demographics of these lesions is particularly useful if the differential diagnosis for a minimal biopsy sample includes benign and malignant entities. This article is a brief overview of some common and unusual pseudo neoplasms specific to this region.

Introduction

A number of lesions that occur in the head and neck may simulate malignancy if only a single perspective of radiographic or clinical or pathologic examination is used to assess the lesion. A multidisciplinary approach, in some situations, will be vital to integrating information that enables the correct assessment of the process. The purpose of this article is to provide a brief overview of a narrow set of challenging and unusual entities, some unique to the head and neck region. These entities may be encountered by a surgical pathology service in a variety of settings including at the time of intraoperative consultation. The topics discussed will include selected malignant mimics (pseudoneoplastic lesions) from the oral cavity, salivary gland tissue, sinonasal tract and larynx. Biologically these entities represent a broad spectrum of lesions from normal structures to entities with a yet undefined or uncertain classification.

Pseudoneoplasms of the oral cavity

Juxtaoral organ of Chievitz

The juxtaoral organ of Chievitz (JOOC) is composed of intermingled epithelial parenchyma and mesenchymal components, which persist throughout life. This normal anatomic structure can be located within the connected tissue between the medial aspect of the mandible and the buccinator muscle near the angle of the mandible (retro molar trigone and ascending ramus). The organ function is thought to be as a mechanosensor, similar to the Pacinian corpuscle. The JOOC is seen intimately associated with a rich bed of nerves and is usually innervated by the branches of the buccal nerve.[1] The epithelium of the JOOC is most often composed of squamous epithelium devoid of keratin formation, although columnar glandular-like cells with clear cytoplasm and luminal secretions have also been described. The basal layer of cells in the circumscribed islands often exhibit peripheral palisading and are usually devoid of mitotic figures (Fig. 1). Rarely has dystrophic calcification been associated with the nests.[2] The epithelial nests can be seen in an intraneural or perineural location. Awareness of this normal structure, its histomorphology, anatomic location, and intimate association with nerves is key to prevent a misinterpretation of JOOC as invasive squamous carcinoma with perineural invasion, peripheral ameloblastoma, or mucoepidermoid carcinoma. This is a caveat for the pathologist as a pseudoneoplasm; there is no clinical or radiologic corollary for this entity. Small biopsies, resection margins or frozen section margins with artifactual change could easily

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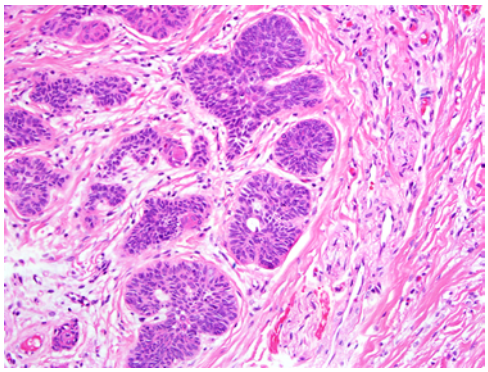

Fig. 1 – This juxtaoral organ of Chievitz exhibits epithelial nests and islands adjacent to a neurovascular bed. The nests show peripheral palisading, with vague reverse polarization of the basal layer. No mitotic figure are seen (H&E; original magnification, 200 ×).

be over diagnosed as invasive carcinoma or perineural invasion. If the anatomic location of the procured tissue is provided or requested then certainly the JOOC structure could be appropriately considered during the histologic examination. Diagnostic errors of JOOC could result in significant misdirected patient treatment.

Pathology arising from the JOOC is very uncommon. Rare cases describing a mass have been reported in an adult and children but no carcinomas to date have been attributed to this organ.[3,4]

Pseudoepitheliomatous hyperplasia

Pseudoepitheliomatous hyperplasia (PEH) is a reactive, non-neoplastic proliferation of mucosal surface epithelium. The proliferation creates markedly elongated rete ridges that resemble the low-power microscopic architecture of invasive squamous cell carcinoma. The prominent downward growth of the surface epithelium, coupled with abrupt focal keratinization, may make the distinction from squamous cell carcinoma very challenging or impossible, especially without subjacent connective tissue for further assessment. Often the lateral extent of this lesion is sharply defined prompting investigation for the nidus of the marked epithelial proliferation (Fig. 2). This reactive proliferation is frequently observed at the edges of chronic nonspecific ulcers seen in the head and neck, particularly within the oral cavity and in the larynx following intubation. PEH can be seen in association with inflammatory processes such as inflammatory papillary hyperplasia beneath a dental prosthesis or obturator, associated with fungal infections such as blastomycosis, observed at the edges of discoid lupus erythematosus and has been associated with granular cell tumors.[5–7] The example of PEH associated with a granular cell tumor is notoriously difficult when examining a small superficial or shallow biopsy (Fig. 2). The more common intraoral sites with a predilection for granular cell tumors are tongue (usually dorsal surface), buccal mucosa and floor of mouth. Another site of predilection within the head and neck is the larynx, in particular, the true vocal cord, a location where small and shallow biopsies are frequent. Again the importance of the anatomic location of the biopsy and knowledge about patterns of distribution of the disease process are imperative for eliminating possibilities within a differential diagnosis.

Eosinophilic ulceration

Events of trauma to the oral mucosa may result in surface ulceration. The tongue, buccal mucosa, and floor of mouth are common sites for trauma from mastication, iatrogenic events, and idiopathic causes. The duration required for healing may vary from a few days to weeks. Eosinophilic ulceration (EU) [Traumatic granuloma, Traumatic ulcerative granuloma with stromal is eosinophilia (TUGSE)], is an exuberant pseudo invasive inflammatory reaction which is slow to heal. Reported delays in healing for EU have been as long as 8 months.[8] The extended healing phase often causes concern for a neoplastic process, prompting a biopsy. Microscopically, this lesion is characterized by granulation tissue composed of plump endothelial cells with an associated dense inflammatory infiltrate; often seen extending deeply into connective tissue and splaying skeletal muscle (Fig. 3). The inflammatory infiltrate is composed primarily of histiocytes, activated lymphocytes, neutrophils and eosinophils, sometimes prompting concern for a lymphoproliferative

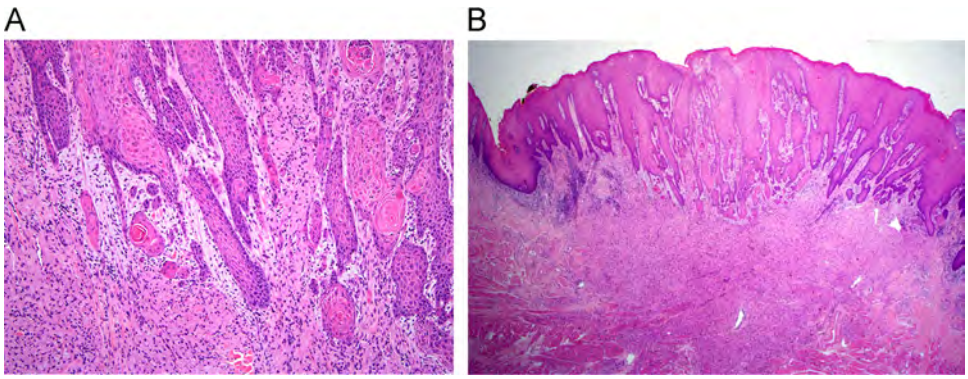

Fig. 2 – The lower architecture suggests the possibility of an invasive epitheil malignancy with the marked downward growth and fragmented islands. The transition from normal to proliferating epithelium is abrupt. The high power examination of the advancing epithelial front shows the presence of the subjacent granular cell tumor and the diagnosis of PEH is possible (H&E; original magnifications, 40 × and 200 ×).