Case Report

Received: Sep. 2010
Accepted: Jan. 2010

Congenital Granular Cell Tumor of Newborn: A Case Report

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ABSTRACT

Congenital granular cell tumor (CGCT) is a unique benign tumor of soft tissue in newborns, which usually occurs on the anterior alveolar mucosa of the jaws. It is 8 to 10 times more prevalent in females than males. We present a case report of a 3-month-old female infant, who had a solitary mass on the anterior mandibular alveolar ridge. The lesion, which was histologically a congenital granular cell tumor, was removed completely by simple excision.

Keywords: Congenital granular cell tumor, Gingival Neoplasms, Infant, Newborn.

INTRODUCTION

Congenital granular cell tumor, also known as congenital epulis or Neumann's tumor, is a very rare benign tumor found on the mucosa of the alveolar process of a newborn child. It is more frequently common on the maxillary ridge than on the mandibular ridge.[1–4] A few rare cases may occur on the tongue.[3–6] This tumor, first described by Neumann in 1871, shows an 8–10:1 sex predilection for females and presents at birth.[7–9]

The etiologic factors for CGCT are origins for CGCT: myoblastic, odontogenic, neurogenic, fibroblastic, histiocytic and endocrinologic.[7,9,10]

Unknown and the histogenesis is not certain. Different studies have suggested various controversial CGCT may clinically present as a sessile or pedunculated single mass, although multiple lesions have been reported as a case.(3,4,11,12) This paper reports a case of CGCT, describing its clinical and histopathological characteristics.

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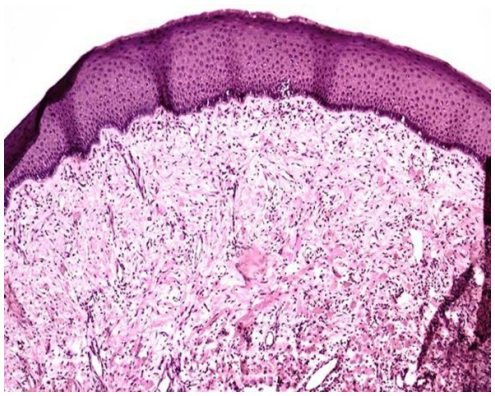
Case report

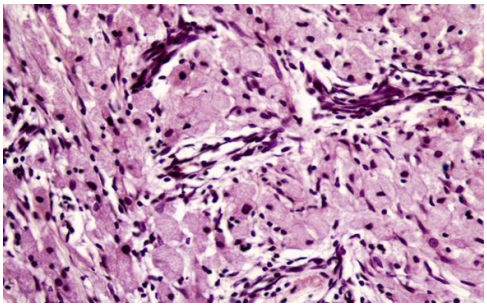
A three-month-old female infant was referred to Besat Hospital for the excisional surgery of a mass on her gum. The child was born at full term and a firm, non-tender pedunculated soft tissue mass, with healthy pink color, measuring 10×8×4 mm, was

found by physical intraoral examination after birth. In her parent's opinion, the lesion size had not changed after birth. External surface of this nodular lesion was smooth and there was no lobulated appearance. It was attached to the mucosa of the anterior mandibular alveolar ridge.

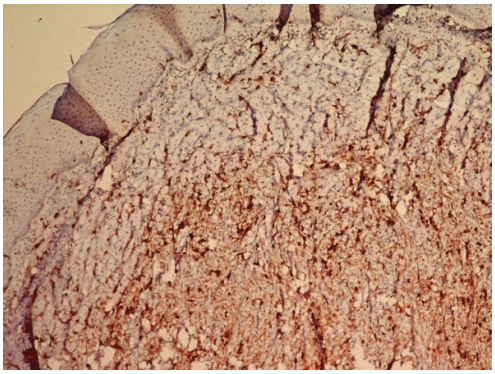
The lump did not interfere with feeding or breathing. Based on the clinical presentation of the lesion, a diagnosis of CGCT was suggested. It was completely excised under general anesthesia and sent for histopathological examination.

Microscopic evaluation of the specimen showed large, round or ovoid, homogeneous cells with granular eosinophilic cytoplasm and small, round, or ovoid, centrally located nuclei, arranged in sheets in nascent fibrous connective tissue stroma and the unencapsulated lesion was covered by a mildly acanthotic stratified squamous epithelium but it did not show pseudoepitheliomatous hyperplasia and the rete ridges were atrophic (Figure 1a-b).





Immunohistochemically, the lesion expresses S-100 protein (Figure 2). The microscopic and immunohistochemical findings confirmed the diagnosis of congenital granular cell tumor.



DISCUSSION

CGCT also known as congenital epulis, congenital epulis of the newborn,[2,3] congenital granular cell lesion,[3] gingival granular cell tumor of the newborn[1] and Neumann's tumor[1,7] is an uncommon benign tumor of the newborn and it is usually seen at birth.[2,4,7]

The size of the tumor may vary from several millimeters to a few centimeters and a large lesion may be diagnosed in utero by ultrasonography or even by magnetic resonance imaging (MRI).[1,2,10,12–14]

Clinically, lesions appear as well-defined sessile or pedunculated firm masses with

smooth or lobulated mucosal surfaces and a pink or red color.[2–4,8,10,15,16]

The CGCT predominantly involves the maxillary ridge so that it occurs three times more frequently on the mucosa of the maxillary ridge than on the mucosa of the mandibular ridge.[8,15–17] However, the present case was attached to the anterior mandibular ridge by a pedicle. The main location is anterior maxilla near the canine or the lateral incisors.[10] Other than gingiva, this lesion has been rarely reported on the tongue.[4,18] Like our case, the majority of CGCTs are solitary[19] but multiple lesions have been found in 10% of cases.[3,7,11,12]

The occurrence for congenital epulis in females is 8 to 10 times more often than males.[8,13] The sex predilection of CGCT suggests possibility of an endogenous hormonal influence although it has not been supported.[3,20]

There are different reports on CGCT: *It does not interfere with respiration and oral sucking [2,15] (our case was included in this group). **The lesion interferes with the feeding but it does not cause airway obstruction.[8,16] ***It may interfere with breathing and feeding, especially if the lesion is big.[15,16]

There is striking resemblance between CGCT and adult granular cell tumor under a light microscope.[8,21] Both lesions consist of large cells with abundant eosinophilic cytoplasm.[3,8,21] However, the latter is less vascular and shows pseudoepitheliomatous hyperplasia of the overlying squamous epithelium.[3,8,22,23] CGCT demonstrates atrophy of the rete ridges similar to our case [3,8,21] and plexiform arrangement of capillaries.[1,7] Immunohistochemical analysis is positive for vimentin and negative for S-100 protein, estrogen and progesterone receptors within the tumor cells of CGCT.[3,4,15] Unlike the adult granular cell tumor, lack of S-100 protein in immunohistochemistry in congenital epulis shows that it does not have a Schwannian origin.[3,21]

The treatment of choice for CGCT is a simple surgical excision and radical resection is not necessary as it is likely to damage the unerupted dentition. Most of the reported lesions are benign and recurrence and/or malignancy have not been documented after incomplete excision.[4,8,10,13,21] On the other hand, spontaneous regression of some very small lesions has been reported.[19,24,25] In addition, removal of CGCT by electrocautery and CO_2 laser has been reported.[1,5,15]

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