Journal of Neonatal Surgery 2018; 7:40
DOI: 10.21699/jns.v7i3.777

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CASE REPORT

Neumann's Tumor - A Rare Neonatal Tumor

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How to cite: Sahin C, Akış ZY, Kaymakci A, Gergin ÖT. Neumann's tumor - A rare neonatal tumor. J Neonatal Surg. 2018;7:40.

ABSTRACT

Neumann's tumor, also known as congenital granular cell tumor, congenital myoblastoma, congenital epulis, was first described by Neumann in 1871. It's a rare cause of newborn's intraoral masses. they are usually on the maxilla and soliter, they can rarely be seen on the mandibula and multiple. Even if it is not clinically symptomatic, surgical resection is performed because of its cosmetic appearance, negative psychological effect on the family, differential diagnosis and treatment. Neumann's tumor is fully cured by surgical resection because it does not show recurrence or metastasis after excision.

Key words: Congenital epulis; Mandible; Neumann's tumor

INTRODUCTION

Neumann's tumor, also known as congenital granular cell tumor, congenital myoblastoma, congenital epulis, was first described by Neumann in 1871 [1]. It is a rare cause of intraoral masses witnessed at birth. It is usually solitary and arises from the maxilla. We report a rare presentation where there were multiple tumors arising from the mandible.

CASE REPORT

A female baby, born of full-term normal vaginal delivery, weighing 3320 g, without any abnormality on antenatal scans, presented with two solid lesions originating from the mandibular gingiva. One of the solid masses was about 2 cm in diameter with thick pedicle, mobile, and prolapsing into the mouth and the other one was 0.7 cm wide and had thick-ground pink-red lobulated surface. There were ulcerous areas on the surface of the masses (Figure 1). There was no other pathology on intraoral examination. The family history was non-significant. The mother did not take any medicine, alcohol, and also did not smoke during the pregnancy. The neonate could not be fed orally due to the masses, so she was admitted in neonatal intensive care unit. Oral masses were excised under general anesthesia on the 1st day of life. The post-operative period was uneventful; she was discharged on the 2nd post-operative day. Pathological examination of the masses revealed polypoid lesions consisting of cells with uniform eosinophilic granules cytoplasm, uniform nuclei, and no significant nucleoli, starting from the epithelium. Cells were S-100 negative, desmin negative, cd 68 negative (Figure 2), and neuron-specific enolase positive. The histopathological biopsy was reported as Neumann tumor.

DISCUSSION

Neumann's tumor is a rare soft tissue tumor of the newborn these benign mesenchymal tumors. These tumors are usually solitary and originating from the anterior part of maxillary alveolar ridge. Besides, it has been also rarely described as arising from the mandibular gingiva and as multiple masses [2,3]. The tumors are seen as having flat or lobular surface, pediculous and hard, pink-red, and prolapsed mass originating from gingiva. Although these tumors are largely solitary, it has been reported that 5–16% may be multiple [4].

Ethiopathogenesis is not fully known, but it is thought to be originated by gum stromal cells or the outer lamina epithelium of granular cells. Although it was thought that hormonal effect was the cause in girls, 10 times more cases in girls than in boys suggest intrauterine hormonal reasons, non-detection of estrogen, and progesterone receptors in tumor cells invalidate this hypothesis [5].

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Submitted: 12-05-2018 Accepted: 01-07-2018
Conflict of interest: None Source of Support: Nil

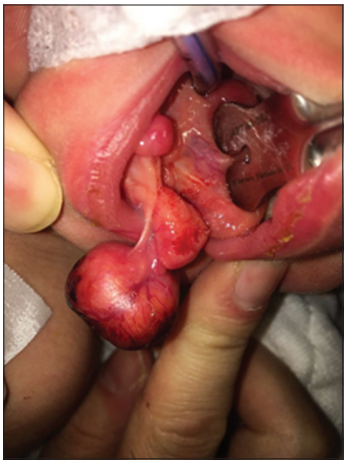

Figure 1: Two prolapsed solid lesions were observed originating from the gingiva and there were ulcerous areas on the surface of the masses

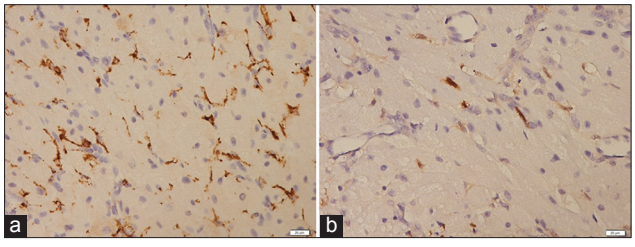

Figure 2: (a) S-100 negative cells with uniform eosinophilic granules cytoplasm, uniform nuclei, and no significant nucleoli. (b) CD68 negative cells with uniform eosinophilic granules cytoplasm, uniform nuclei, and no significan nucleoli

Neumann tumor is distinguished from other granulosa cell tumors in adults by neonatal gingival origin, diffuse presence of odontogenic epithelium, increased vasculature, and absence of angiocyte-containing interstitial cells [6]. In addition, while S100 positivity is present in adult granulosa cell tumors, S100 negativity is mentioned in Neumann's tumor as in our case.

Neumann tumor should be differentially diagnosed from the other oral masses which include teratoma, leiomyoma, hemangioma, fibroma, rhabdomyoma, fibrosarcoma, lymphangioma, lipoma, and heterotopic gastrointestinal cyst [7]. Although macroscopically difficult to distinguish, there is no difficulty in recognizing pathologically. These tumors can cause feeding problems and respiratory distress in babies if they prolapse in the mouth. Surgical resection should be performed in these symptomatic tumors [8]. In our case, masses were resected early due to feeding difficulty, risk of respiratory distress, and poor cosmetic appearance.

In Neumann's tumor, metastasis or recurrence after excision is not seen [7]. Small-sized tumors are known to even regress spontaneously within 6–8 months [9]. Recurrence was not observed in the index case during the 1-year follow-up.

Author's contribution

All authors contributed equally in concept, design, literature review, drafting the manuscript, and approval of the final manuscript.

Consent statement

Authors declared that they have taken informed written consent, for publication of this report along with clinical photographs/material, from the legal guardian of the patient with an understanding that every effort will be made to conceal the identity of the patient however it cannot be guaranteed.

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