

## Congenital Epulis in the Newborn, Review of the Literature and Report of a Case

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### Abstract:

Neumann's tumor is a rare benign soft tissue lesion presents during birth. It arises from the gingival mucosa, at the anterior part of the maxillary alveolar ridge and is typically seen as protruding mass out of the newborn child's mouth that may interfere with respiration or feeding or lip closure. Female predilection is more compared to male population with ratio of 8:1. Excision of the lesion is the only possible treatment, but its spontaneous regression has been reported. Post-operative recurrence rate of this tumor is less and no damage to any dentition has not been reported, this suggests that radical excision is not required. This case report presents the case of a female infant with a solid ovoid mass protruding from the oral cavity. Treatment of this lesion was surgically done and subjecting to histopathological examination confirmed the diagnosis of congenital epulis. No post-surgical complications were noted, and examination of the infant later has revealed no sign of recurrence.

**Key Words:** Congenital epulis, congenital granular cell lesion, gingival granular cell tumor, Neumann's tumor

### Introduction

Congenital epulis, also known as granular cell tumor, is a very rare benign tumor in newborns.<sup>1</sup> It most frequently occurs on the incisal part of the alveolar ridge of the upper or lower jaw, but tongue involvement has also been reported.<sup>2</sup>

This lesion usually benign and as such no metastatic or recurrence has been reported so far.<sup>3</sup> When compared to mandibular alveolus, it has 3 times more frequency of occurring in maxillary alveolar region, with a female: male ratio of 10:1.3 times.<sup>3-5</sup> The lesion is usually solitary but has also been noted as multiple. A larger lesion may interfere with nursing or occasionally cause an obstruction for breathing. Although it does not grow after birth, spontaneous regression is not

expected and early surgical removal is preferred, especially if the functional impairment is present.

We report a rare case of epulis in a newborn which was treated surgically with no post-operative complication.

### Case Report

A newborn female baby was referred to our unit of Oral and Maxillofacial Surgery from the Department of Gynaecology of Navodaya Medical College and Hospital, Raichur, immediately after delivery for examination of a large oral tumor mass. History revealed normal pregnancy and delivery without any complications. No family history of hereditary diseases was reported.

Clinical examination depicted a well-defined, pedunculated, midline round tumor mass in oral cavity measuring 3 cm × 2 cm (Figures 1 and 2). The lesion was soft in consistency exhibiting a smooth erythematous surface. Palpation of the lesion base revealed its origin from the soft tissue of the crest of lower anterior alveolus region. The tumor mass obstructed it from normal closures and also interfered it with breastfeeding. However, there were no immediate airway concerns noted. The baby was instituted with a nasogastric tube to facilitate feeding immediately after the birth in the Department of Gynaecology and Obstetrics.

General physical examinations, including all relevant laboratory tests, were otherwise normal. Conventional ultrasonography (USG) showed a non-homogeneous, solid mass, space-occupying lesion measuring 3 cm which ruled out the possibility of vascular lesion. Clinically, the lesion was diagnosed as a case of congenital epulis, and it was planned to excise the lesion under general anesthesia.

An avascular zone was created at the base of the lesion by ligating at the base 24 h before surgery using 3.0 mersilk suture (Figure 3). Oral intubation was performed using 3.5 mm uncuffed endotracheal tube. The incision was given above the ligation, and the lesion was excised under general anesthesia having minimal hemorrhage during the procedure (Figures 4 and 5). Regular breastfeeding was initiated on the 2<sup>nd</sup> day after surgery and was discharged on the fifth post-operative day. At 2 weeks after surgery, the patient was reviewed and was noted to be thriving and gaining weight. Wound healing was satisfactory, and the gingiva was completely reepithelized after 2 weeks (Figure 6).



**Figure 1:** Appearance of a intra oral mass arising from the gingiva of the anterior mandible.



**Figure 4:** Excision of lesion at the avascular zone.



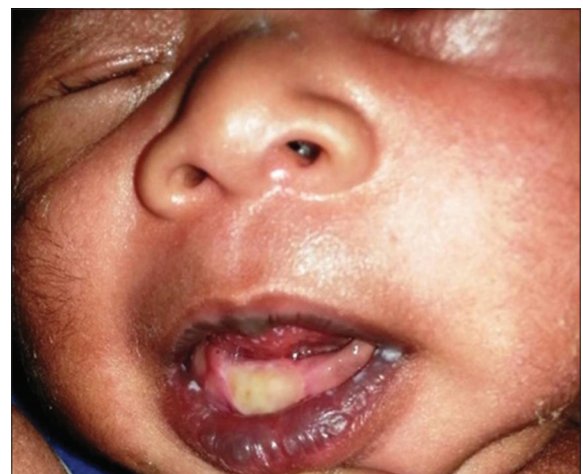
**Figure 2:** Appearance of pedunculated base of the intra oral mass.



**Figure 5:** Appearance of the alveolar ridge after the excision of the pedunculated lesion



**Figure 3:** Ligation at the pedunculated base to create an avascular zone for surgical excision of the lesion.



**Figure 6:** Satisfactory healing after first postoperative week.

**Discussion**

Epulis is a Greek word which means “a swollen gingiva.” It was first described, in 1871, by Neumann; so, it is also called

as Neumann’s tumor. This tumor usually originates at the future site of maxillary canine or lateral incisors, but these unerupted teeth are not involved. Etiology of this tumor is unknown but several theories have been proposed, namely, myoblastic theory, neurogenic theory fibroblastic theory,



histolytic theory, and endocrinological theories.<sup>3,4</sup> This tumor is not associated with congenital malformation or any dental abnormalities except few occasional reports of absent tooth or mild hypoplastic midface.<sup>6,7</sup> Clinically, this lesion presents in the alveolar mucosa as a pedunculated mass with a reddish to normal color.<sup>8,9</sup> A provisional diagnosis of epulis is made by subjecting the patient to clinical examination and diagnosis is confirmed by subjecting to histopathological examination. Although its histogenesis is not clear, it is thought to be a non-neoplastic, reactive, or regenerative lesion.<sup>10-12</sup>

Neumann tumor and other granular tumors in adults can be differentiated by its exclusive origin for neonatal gingiva, the presence of scattered odontogenic epithelium and extensive elaborated vasculature.<sup>13</sup> Hence, subjecting to imaging for cases of congenital epulis is important, especially for antenatal diagnosis with the help of ultrasound. The earliest reported case was identified at 31-week-old fetus.<sup>14</sup>

Considering differential diagnosis of a large mass in the neonatal oral cavity includes congenital malformations such as encephalocoele, dermoid cysts or teratoma, and benign and malignant neoplasm's including hemangioma, lymphatic malformations, melanotic or pigmented neuroectodermal tumors of infancy and rhabdomyosarcoma.<sup>15</sup>

When the lesion is large and is interfering with feeding and respiration simple surgical excision under local or general anesthesia is to be carried out ruling out the possibility if on vascular malformation using USG. Surgical excision gives a complete cure to this lesion, and post-operative recurrence has not been reported.<sup>16</sup> Hence, wide excision becomes unnecessary.

### Conclusion

Neumann's tumor is a simple but uncommon lesion that manifests in an otherwise healthy child. A preliminary diagnosis is usually done clinically; however, the histopathologic analysis is considered as gold standard for an accurate diagnosis. This lesion leads to concern or even cause fear in the parents who often require proper counseling. Proper management is a team effort by the maxillofacial surgeon, gynecologist, pediatrician, and anesthesiologist. Even though rare in recurrence and there is the absence

of malignancy in reports, regular follow-ups of the patient should be maintained.

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