Case Report

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Dentistry Section

Lobular Capillary Haemangioma in the Anterior Maxillary Gingiva of a Six-year-old Patient: A Case Report

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ABSTRACT

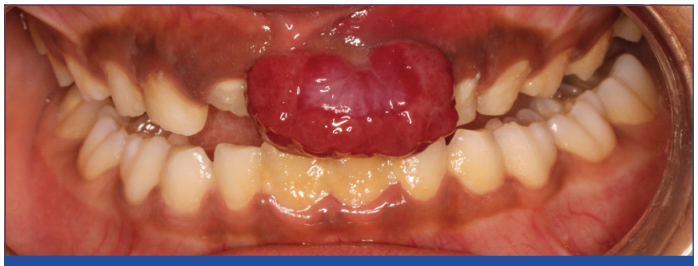
Haemangiomas are benign proliferative tumours with vascular tissue origin. These neoplasms are recognised as benign tumours commonly found in infancy, characterised by a period of rapid growth accompanied by proliferation of endothelial cells, followed by gradual involution. The male to female ratio is observed to be 3:1, with a predominant impact on the female population, particularly during the early stages of their second decade of life. The diameter of the lesion spans from a few millimeters to several centimeters, with rare instances exceeding 2.5 cm. The present case report details the occurrence of Lobular Capillary Haemangioma (LCH) in a young male patient of six years, who exhibited gingival overgrowth in the anterior maxillary region. The patient presented with symptoms of discomfort during mastication, occlusal interference, and excessive hemorrhage during oral hygiene practices. Due to the lesion's extensive blood supply and the confirmation of the diagnosis in the histology report, it was surgically removed in a single session while the patient was under conscious anaesthesia. The patient underwent a thorough six-month follow-up examination, which demonstrated a favourable outcome with no evidence of lesion recurrence. Although haemangiomas are prevalent soft tissue tumours in the head and neck region, they are infrequently found in the oral cavity and rarely encountered by doctors. Intraoral haemangiomas most commonly occur in the lips, tongue, buccal mucosa, and palate. However, this case report describes a rare occurrence in the maxillary anterior site, which has limited documentation. The treatment involved the use of monopolar cautery, which effectively reduced bleeding at the surgical site after the use of a scalpel. The purpose of present case report is to report an unusual case of a benign tumour occurring in the anterior maxillary region, which was diagnosed as LCH.

Keywords: Infancy, Paediatric surgery, Pyogenic granuloma, Rare tumour

CASE REPORT

A six-year-old male child with a reddish lesion near his upper front tooth for the past 20 days visited the Department of Pedodontics and Preventive Dentistry. After getting the patient's history, the parent revealed that the patient had previously had damage around his upper front teeth one month ago when he was playing and fell down. His right central deciduous tooth (51) was avulsed upon the fall, and his left central deciduous tooth (61) was mobile and avulsed after three days. A lesion, large enough to obstruct his usual occlusion, had started as a little red spot in the same region and gradually grew until it reached its current size. The past medical history was non contributory.

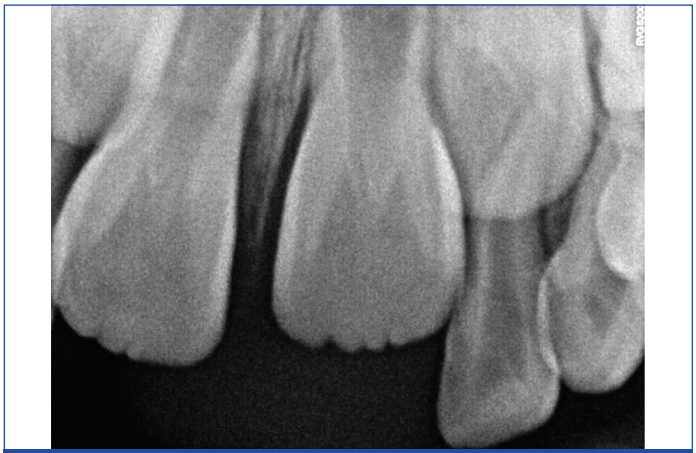
On clinical evaluation, no significant extraoral findings were noticed. Intraoral examination revealed a solitary, pedunculated erythematous exophytic growth measuring 2 cm arising from the 21 region fully and 11 region partially [Table/Fig-1]. The growth was above the level of occlusion, and the borders were distinct.



[Table/Fig-1]: Intraoral preoperative image of the lesion.

The lesion was soft in consistency, non tender with a pedunculated base, and slight bleeding on palpation. Based on the history and clinical appearance, a provisional diagnosis of Pyogenic Granuloma (PG) was made. The differential diagnosis included various types of haemangiomas, such as cavernous haemangioma or infantile haemangioma, although they differ in their histological and clinical appearance.

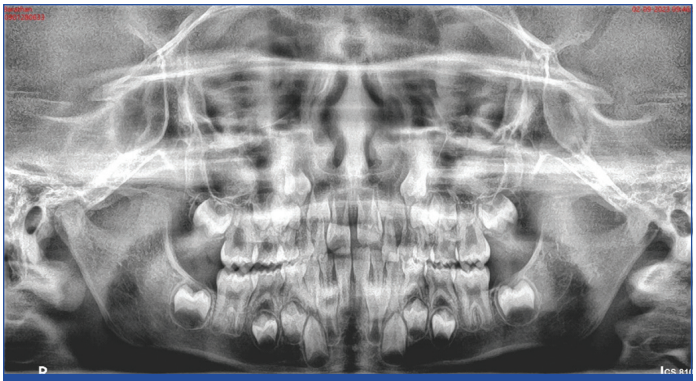
An Intraoral Periapical Radiograph (IOPAR) revealed an ill-defined radio-opaque shadow in the maxillary anterior region of 11,21 [Table/Fig-2]. The radiograph showed no displacement of the tooth. None of the teeth showed root resorption. The Orthopantomogram (OPG) revealed developing roots in relation to 11 and 21 [Table/Fig-3].



[Table/Fig-2]: IOPAR irt 11,21.

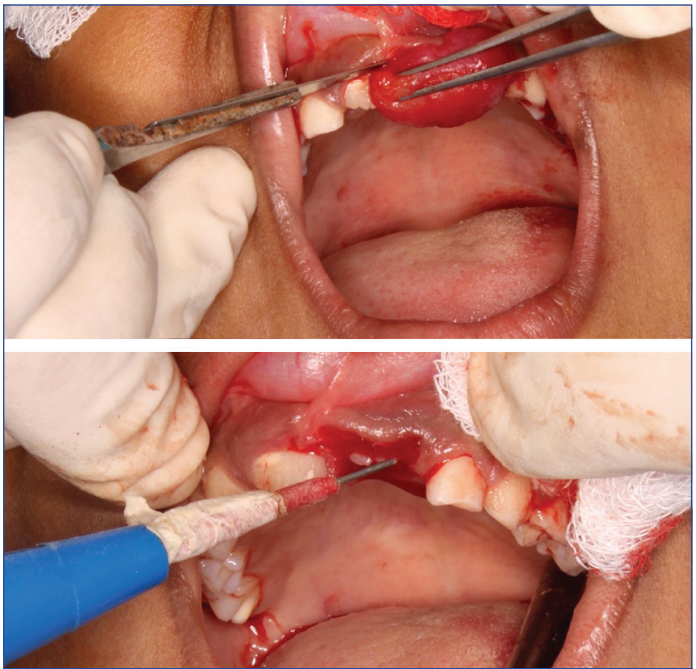
Blood investigations: The blood reports were normal with a haemoglobin value of 13.2 gm/dL, platelet count of 3.72 lacs/uL, and bleeding time and clotting time of two minutes 35 seconds and nine minutes 10 seconds. The patient tested negative for Human Immunodeficiency Virus (HIV), and Hepatitis C Virus (HCV) and Hepatitis B surface Antigen (HBsAG).

Treatment: The treatment plan was to remove the lesion under conscious sedation using a scalpel and monopolar cautery. Treatment began with the parents' informed permission after they were

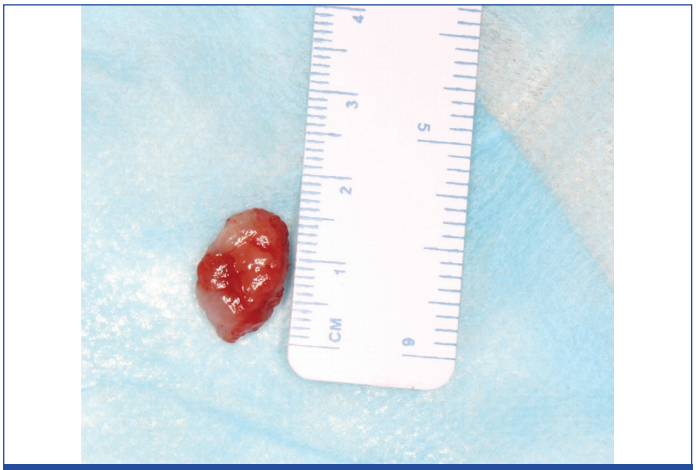


[Table/Fig-3]: Orthopantomogram (OPG).

educated about the condition, possible side-effects, and benefits and drawbacks of the suggested course of therapy. The afflicted area was cleaned and irrigated, and oral prophylaxis was carried out to lessen the irritation surrounding the lesion. The patient was treated under conscious sedation, the lesion was surgically removed after an evaluation of the patient's general health and suitability for the treatment. The erythematous growth was first cut with a surgical blade, bleeding was stopped with monopolar electrocautery, and a haemostatic agent (gel foam) was kept on hand because bleeding was anticipated due to the vascular lesion [Table/Fig-4,5]. Without any suturing, the lesion was fully removed from the base [Table/Fig-6]. The surgical site began to recover after a full day.

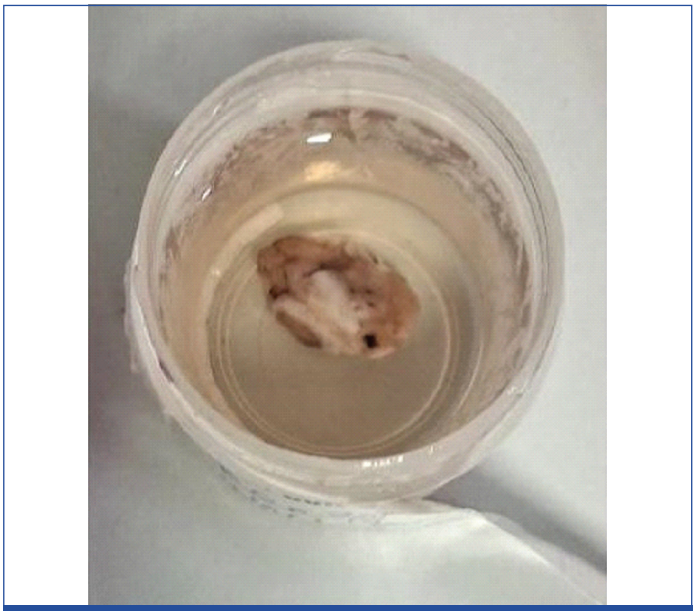


[Table/Fig-4,5]: Intraoral operative pictures using a surgical blade and monopolar electrocautery.

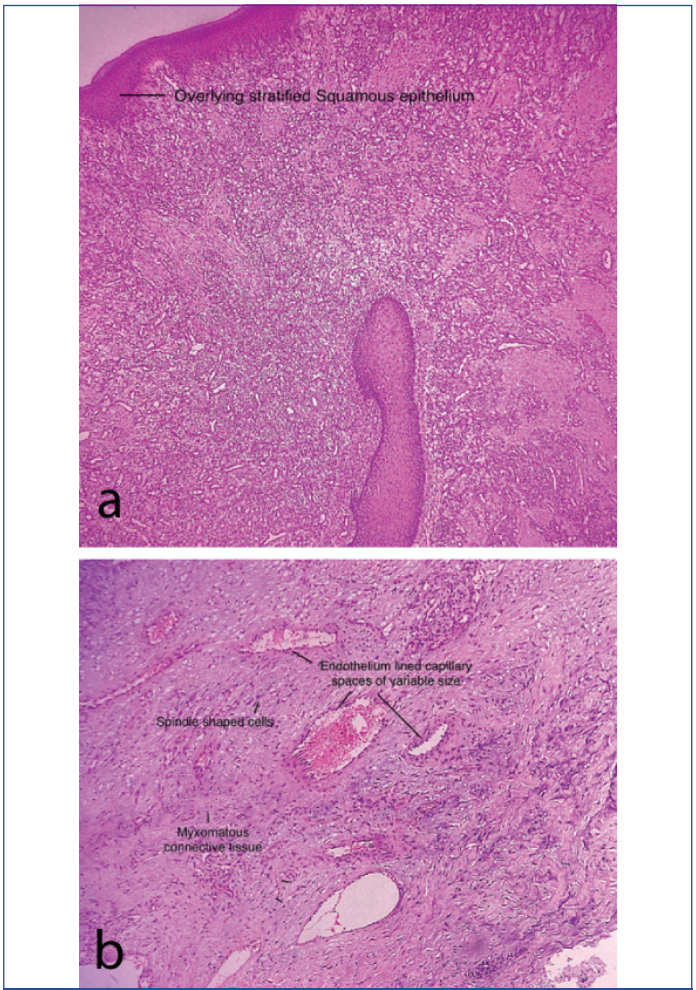


[Table/Fig-6]: Excised lesion.

The excised lesion was stored in a 10% neutral buffered formalin solution [Table/Fig-7] and was sent for histopathological investigation. Multiple Haematoxylin and Eosin (H&E) stained sections showed fibrous connective tissue stroma with small to large endothelium-lined capillary spaces admixed with a few areas of proliferating bland spindle-shaped endothelial cells, some of which showed evidence of lumina formation. The intervening stroma is myxomatous in a few areas and shows a moderate inflammatory cell infiltrate. The overlying parakeratinised stratified squamous epithelium showed areas of ulceration replaced by a fibrinopurulent membrane. Clinically correlating, histopathology was suggestive of LCH [Table/Fig-8a,b].

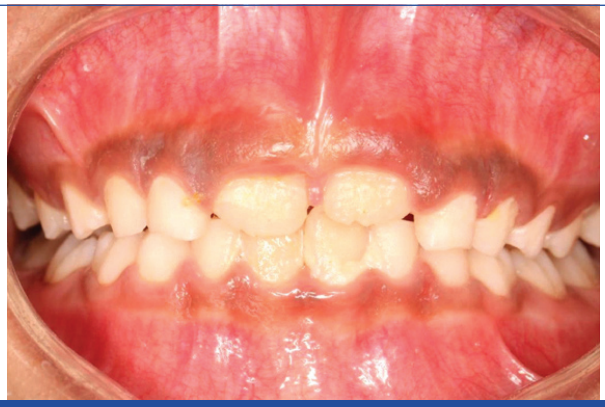


[Table/Fig-7]: Excised lesion in formalin.



[Table/Fig-8a,b]: Histopathological report showing Lobular Capillary Haemangioma (LCH) (H&E, 4x and 10x, respectively).

The patient was advised not to touch the surgical site, brush or gargle vigorously, or consume hot meals or liquids. The patient was followed-up every month for six months to check for recurrences, and after six months following surgery, no erythematous growth was visible [Table/Fig-9].



[Table/Fig-9]: Six-month follow-up.

DISCUSSION

In 1943, PG was initially reported [1]. Since then, it has been described as a red-coloured, smooth, or lobulated growth that protrudes outward from the surface, often attached to a stalk-like structure or occasionally without one, and has a tendency to easily bleed [1,2]. The lesion is neither "pyogenic" (meaning it forms pus) nor is it a "granuloma" (meaning it is an organised collection of inflammatory cells belonging to the monocyte family). Therefore, the name "PG" is an inaccurate description of the lesion. Furthermore, in 1980, the name "Lobular Capillary Haemangioma" (LCH) was developed as the underlying histological counterpart of the condition [3]. LCH is a non cancerous vascular tumour that develops on the skin and mucous membranes. In some cases, it may also be detected beneath the skin or within blood vessels. It can develop on its own, in areas where there has been trauma, or within capillary abnormalities [4].

A variety of synonyms are used for PG, such as LCH, granuloma pyogenicum, granuloma telangiectaticum, angiogranuloma, epulis gravidarum, and pregnancy tumour (the latter two when occurring in the gingiva during pregnancy) [5]. PG has two histological variations. The first form is distinguished by the rapid growth of blood vessels structured in lobular aggregates known as LCH PG, while the second type exhibits a highly vascular proliferation that mimics granulation tissue, referred to as non LCH PG [6]. Haemangiomas are a broad category of vascular developmental malformations that often affect infants and children [7]. According to reports, it affects 5-10% of one-year-old children. Although just a small percentage of instances are said to be congenital, the majority of haemangiomas are not apparent at birth and develop throughout the course of the first eight weeks of life [8]. Vascular abnormalities, on the other hand, are evident from birth and last a lifetime [9]. Infantile haemangiomas are often divided into three categories: superficial, deep, and mixed [10]. PG develops over time in response to things like hormones, trauma, and localised irritation [11]. Children's oral cavities seldom experience it, with poor dental hygiene being the main contributing reason. Trauma, however, is the primary factor in present situation [12].

In a case report published by Tedjosasongko U et al., the 10-year-old patient had a red, smooth, flat-surface papule measuring approximately three millimeters on his right upper lip. During the monitoring period, the size of the lesion increased to 7 mm within a span of four weeks. The patient's increased mass was determined to be caused by an intensified lip-biting habit, acting as a traumatic aetiological component. Subsequently, the nodule was surgically removed under general anaesthesia [13].

The patient's increased mass was determined to be caused by their intensified lip-biting habit, which acted as a traumatic etiological component. Subsequently, the nodule was surgically removed under general anaesthesia [13].

Rachappa MM and Triveni MN conducted a case study on a seven-year-old male child who presented with a swelling on the posterolateral aspect of the hard palate. The development exhibited remarkable expansion within a span of one week, characterised by a solitary, pedunculated, spherical-shaped reddish swelling with a well-defined border. A tentative diagnosis of PG was obtained, and it was surgically removed under local anaesthesia [14].

Surgical intervention for haemangiomas is the most widely adopted therapeutic approach and can be performed with or without vascular ligation and embolisation [15,16]. Alternative treatments, including intralesional injections of sclerosing agents, steroid therapy, interferon alpha-2b, radiation, electrocoagulation, cryosurgery, and various laser therapies like Yattrium Aluminium Garnet (YAG) and Carbondioxide (CO_2) lasers, as well as embolisation, are options for cases where surgery is not suitable [15].

The differential diagnosis includes various types of haemangiomas, such as cavernous haemangioma or infantile haemangioma, although they differ in their histological and clinical appearance [17]. Kaposi's sarcoma may bear a resemblance to LCH, particularly in individuals who have Acquired Immunodeficiency Syndrome (AIDS) or other conditions that weaken their immune system [17]. Angiosarcoma is a cancerous tumour that affects blood vessels and can appear similar to LCH in terms of symptoms and characteristics [8,17]. Both PG and Peripheral Giant Cell Granuloma (PGCG) exhibit comparable clinical symptoms, and the presence of chronic poor oral hygiene can trigger their development. The key distinction lies in the prominent presence of many giant cells observed during histopathological examination in cases of PGCG [18].

CONCLUSION(S)

In present case, the lesion was present on the maxillary anterior gingiva, which is a rare location for LCH to be present. After the initial diagnosis indicated a haemangioma, leading to the selection of surgical excision as the primary treatment method, along with the use of monopolar electrocautery to control bleeding, a final diagnosis of LCH was made. Efforts to eliminate them through basic excision can result in significant medical complications. Therefore, dental surgeons should be cognizant of these hazards while diagnosing and managing patients and should take essential precautions before attempting to remove seemingly harmless lesions.

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