



## Lobular Capillary Haemangioma of Oral Mucosa- A Case Report

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### Abstract

**Background:** Lobular capillary haemangioma is a rare histo pathological variant of pyogenic granuloma. It is a non-neoplastic tumor of the oral cavity. It is more common in females.

**Case report:** The present case report discusses one such lesion that was reported by a twenty-seven year old female during her third trimester of pregnancy. The lesion was surgically excised and examined histo pathologically to confirm lobular capillary haemangioma.

**Conclusion:** The association of pregnancy and pyogenic granuloma was analysed in the present report. Relapse of the lesion was prevented by removing the contributing local etiological factors.

**Keywords:** lobular capillary haemangioma, pyogenic granuloma, pregnancy, female-sex hormones, Excision biopsy.

### Introduction

Lobular capillary haemangioma (LCH) or Pyogenic granuloma (PG) is a benign vascular tumor of the skin or mucous membranes characterized by rapid growth and friable

surface<sup>[1]</sup>. Pyogenic granuloma is a non-specific conditioned enlargement <sup>[2]</sup>. It is one of the inflammatory hyperplasias seen in the oral cavity as a tissue response to irritation, trauma or hormonal imbalances. Hartzell was the first one to

introduce the term “pyogenic granuloma” or “granuloma pyogenicum” in 1904<sup>[3]</sup>. Although it is a common lesion in the skin and oral mucosa, it is extremely rare in the gastrointestinal Tract. In the oral cavity it is commonly seen in the keratinized gingiva. There are two kinds of PG namely Lobular capillary hemangioma (LCH type) and non-LCH Type, which differ in their histological features<sup>[4]</sup>. The lesion varies from a discrete spherical, tumour like mass with a pedunculated attachment to a flattened, keloid like enlargement with a broad base. It is bright red or purple and either friable or firm, depending on its duration; in the majority of cases it presents with surface ulceration and purulent exudation. The lesion tends to involute spontaneously to become a fibroepithelial papilloma, or it may persist relatively unchanged for years. It is more common in teenagers and young adults with a female predilection of 2:16. The increased incidence of these lesions during pregnancy may be related to the increased levels of estrogen and progesterone<sup>[1,5]</sup>. Pyogenic granuloma of the oral cavity is known to involve the gingiva commonly (75% of all cases). Vilmann et al<sup>[6]</sup> described that pyogenic granulomas can be of few millimetres to several centimetres in size and commonly involve maxillary labial gingiva. Uncommonly it can occur on the lips, tongue, buccal mucosa, palate and so on<sup>[1]</sup>. The treatment of lobular capillary haemangioma is complete excision<sup>[7]</sup>. Surgical excision should be done with utmost care to prevent excess bleeding due to its haemorrhagic nature.

### Case Report

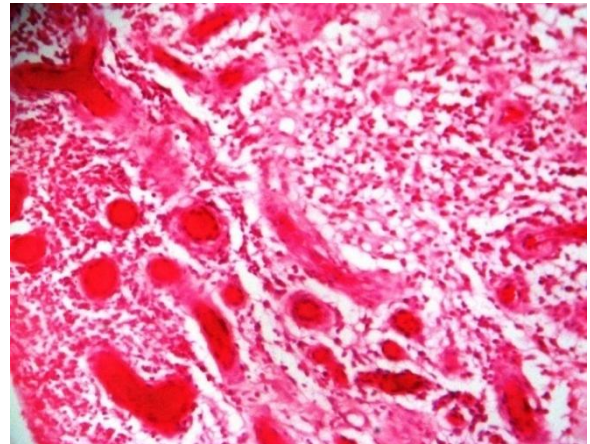
A twenty-seven year old female came to our private dental clinic with the chief complaint of swelling in the upper right back region of the jaw. A brief case history of the patient was recorded. The patient was systemically healthy. There was no palpable lymph nodes. The swelling had started as a small painless enlargement from the interdental papilla between second and third maxillary molars during her third trimester of pregnancy. It had gradually increased in volume and had attained the present size, six months after post partum. The corresponding upper right third molar was partially erupted and impacted. The oral hygiene status of the patient was fair. The swelling was measuring about 2.5×2 cm in size and was interfering with occlusion. It was red in colour, pedunculated and firm in consistency. The surface had many cauliflower-like protruberances (fig:1). There was no bone involvement. Intra-oral periapical radiograph showed no abnormal radiographic features. On clinical examination, the swelling was diagnosed as pyogenic granuloma. Differential diagnosis included peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic carcinoma, haemangioma and papilloma. During the first visit, full-mouth oral prophylaxis was done. The patient underwent routine haematological investigations. The haematological report was normal. Excisional biopsy was planned to be carried out in the second visit.

### Surgical Procedure

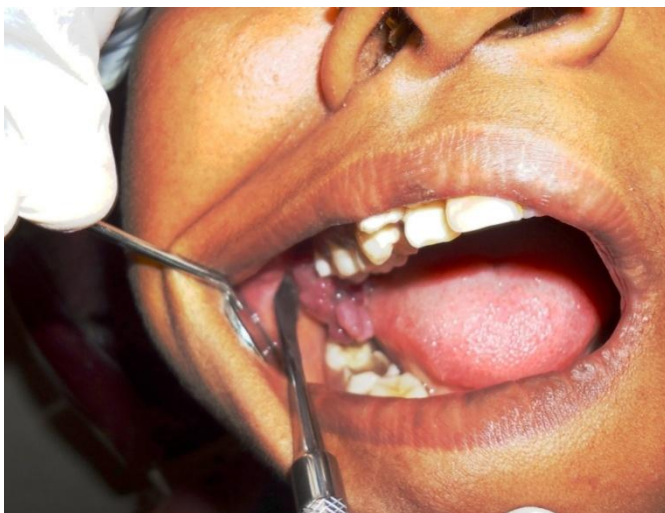
The surgical site was adequately anaesthetized using 2% lignocaine with 1 in 80,000 adrenalin by local infiltration method. Excisional biopsy of the lesion was done till the muco-periosteum and the area was curetted to prevent further relapse. The partially erupted third molar that acted as the source of irritation was extracted. The extracted site was carefully inspected for debris, calculus and bone spicules. Then the extracted site was sutured using 3-0 black silk suture. Surgical pack was placed and post-operative instructions were given. The excised tissue (fig:2) was sent for hispathological investigation. Histopathology specimen (fig:3) showed numerous capillaries lined by endothelial cells in a loose and fibrillar connective tissue. It also showed inflammatory infiltrate. There was no evidence of granuloma or malignancy. The diagnosis was lobular capillary haemangioma.



**Fig: 2** showing the excised mass



**Fig: 3** microphotograph showing H & E Section of the tissue at 10×10 magnification



**Fig: 1** pre operative photograph of the swelling in the upper right back region in relation to the molars



**Fig: 4** one-year post operative picture showing the healed site

### Discussion

Although pyogenic granuloma was originally thought to be caused by pyogenic organisms, it is now believed to be unrelated to infection <sup>[7]</sup>. So the term “pyogenic granuloma” is a misnomer

because the lesion does not contain pus and is not strictly speaking a granuloma <sup>[1,3,11,14]</sup>. Although PG may occur in all ages <sup>[4,12]</sup>, it is predominant in the second decade of life in young adult females, possibly because of the vascular effects of female hormones <sup>[1,7,8,9]</sup>. Studies done in Jordanian<sup>[4]</sup> and Singaporean populations were in agreement with this finding. In contrast, a recent study reported that the average patient age was 52 years with a peak incidence of occurrence in the sixth decade of life <sup>[14]</sup>. Some authors believe that patients are mostly males under 18 years of age, females in the age range 18 to 39, and older patients with an equal gender distribution <sup>[15]</sup>. Epivatianos et al. <sup>[4]</sup> reported predominance in women (1:1.5) and the presence of etiological factors in 16% of cases, whereas, non-LCH PG was associated more frequently (86%) with etiological factors. In the present case report, lobular capillary haemangioma developed in the patient during her third trimester of pregnancy. Hosseini et al <sup>[16]</sup> observed that gingival enlargements increased in pregnancy and atrophied in menopause. Yuan et al <sup>[17]</sup> concluded that the morphogenetic factors were higher in pyogenic granuloma rather than normal gingiva supporting the mechanism of angiogenesis in oral pyogenic granulomas in pregnant females. Kuo, Ying, and Ming stated the role of two angiogenesis enhancers, that is, VEGF and bFGF, and two angiogenesis inhibitors, that is, TSP-1 and angiostatin in mechanism for angiogenesis. Vascular morphogenesis factors Tie-2, angiopoietin-1, angiopoietin-2, ephrinB2, and ephrinB4 were found upregulated in pyogenic granuloma compared to healthy gingiva <sup>[16]</sup>. The

importance of decorin, vascular endothelial growth factor, basic fibroblast growth factor, or connective tissue growth factor particularly in angiogenesis associated with a profound inflammation has been proved by some investigators <sup>[7]</sup>. Due to its frequent occurrence in pregnant females pyogenic granuloma is also called as granuloma gravidarum or pregnancy tumor<sup>[7]</sup>. The partially erupted third molar in this patient might have acted as a source of plaque accumulation in this patient. So plaque accumulation along with hormonal imbalance might be the etiology for LCH in this patient. One year post operative of the surgical site showed excellent healing(fig:4). There was no relapse of the lesion and oral hygiene maintenance of the patient was very good. In the present case, the lesion was surgically excised and was sent for histopathologic examination. All the contributing local etiologic factors like plaque and calculus were completely removed in the present case. Other treatment modalities include use of Nd: YAG laser, carbon dioxide laser, flash lamp pulse dye laser, cryosurgery, electrodesiccation, sodium tetradecyl sulfate sclerotherapy<sup>[18]</sup> and intralesional steroids <sup>[19]</sup>.

### Conclusion

The present case report highlighted the association of lobular capillary haemangioma in pregnant women. The need for surgical excision and proper oral hygiene maintenance to prevent relapse is emphasized. Surgery should be carried out after post-partum to promote uneventful healing and to prevent recurrence.

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