A few pints later …

An unusual presentation of Pyogenic granuloma with the patient requiring a blood transfusion

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1. Core Trainee 2. Specialty Doctor 3. Specialty Registrar 4. Consultant

Background- The patient

- 17 year old male- born at term without complication
- Medical History: Autism, Global Development Delay, Learning Difficulties. 15q 11.2 deletion, Bronchial Asthma, Eczema and Sleep Disorder
- **Medications:** Salbutamol, Beclomethasone inhaler, Diprobase, Ferrous Fumarate
- NKDA
- **C/O:** Chronic profuse daily bleeding ULQ gingivae affecting oral intake leading to recent weight loss
- A and e attendance with hemorrhage from gingivae- causing collapse

Methods- His story begins…

A and E

- Self presented with acute blood loss, collapse, pallor and fatigue
- **Spontaneous daily oral bleeding** for a few months
- Intermittent and self-terminating pooling of blood in his mouth making him hesitant to eat and causing significant **weight loss**.
- At presentation- vital signs= Sinus tachycardia 118, all other signs normal. Normal ECG
- **Hb 31** on admission, Microcytic Hypochromic anaemia 40 g/L
- **Transfused 4 units of compact red blood cells= Hb 91**
- On examination: Friable, exophytic vascular lesion on the upper left alveolus
- Bleeding arrested with local measures, prescribed tranexamic acid mouthwash
- Referred for urgent CBCT and Consultant review, worsening statement given

Consultant Clinic

- O/E: Mucosal lesion occupying the gingiva and alveolus, surrounding an UL7, **Submerging ULE** and extending to involve the UL6. Unerupted UL5 found on OPT
- Urgent **CBCT** scan report: Abnormal multiple small non corticated radiolucencies and breach of alveolar crest. Potential vascular tumour or arterial malformation, **MRI** recommended
- Pre and Post contrast MRI: **No signal voids to suggest AVM**, hypervascular inflammatory mass
- Plan for urgent GA surgery- excisional biopsy, split fit and clinic to ensure modification of plaque control

Theatre

- Urgent theatre **Extraction of upper submerged E's and excisional biopsy of mass and bone**
- Granulomatous lesion around UL6/7 bled easily on touch and movement
- **Bipolar** used to arrest bleeding and **Vicryl** suture to aid closure
- Impressions taken for splint under GA for **vacuum splint** fabrication- to aid healing, comfort and to minimise trauma post-operatively
- 1 day follow up for review with Consultant
- Discharged home on routine analgesia, oral Co-Amoxiclav 625mg for 5 days to reduce risk of secondary haemorrhage and **Tranexamic acid oral rinse**

Follow up

- Review 1 week and 3 weeks
- Post-operatively, the patient made an excellent recovery, with **resolution of the lesion** and **return to a normal diet**
- He did not require long term antimicrobial management
- Finding the nightguard helpful to stop chewing cheek
- Dad cleaning mouthguard, patient cleaning teeth independently
- **OH demonstration** around area
- Further review at 3 weeks- healing well **emphasised good OH essential to prevent recurrence**

Results- Histopathology

Histopathology revealed a pyogenic granuloma colonised with Actinomyces species. No fungal colonisation. Trabecular bone fragment showed some osteoblastic rimming- consistent with bone remodelling.

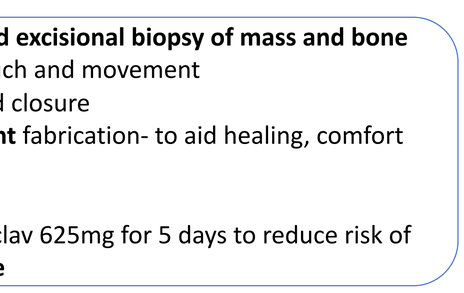
Microscopy

Credit histopathology slides- Gordon Reid
FVRH Consultant Histopathologist

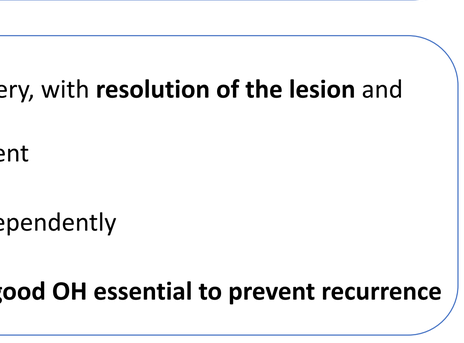
Histological sections show oral stratified squamous lined mucosa with a central polypoid area of ulceration. This is associated with acute inflammation and neovascularisation and is morphologically in keeping with changes of pyogenic granuloma. The adjacent squamous mucosa shows changes of pseudo epitheliomatous hyperplasia. There is no evidence of dysplasia or malignancy.

As discussed in the associated biopsies I note that this lesion is associated with a degenerate deciduous tooth and the histological features would be entirely in keeping with reactive changes and pyogenic granuloma in association with this. There is no evidence of malignancy.

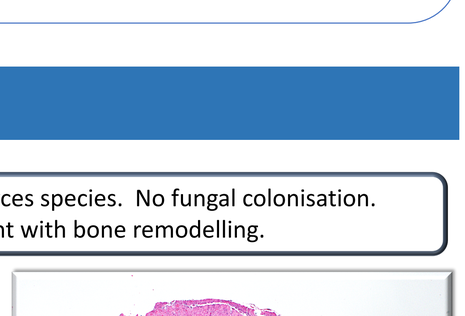
Low power overview



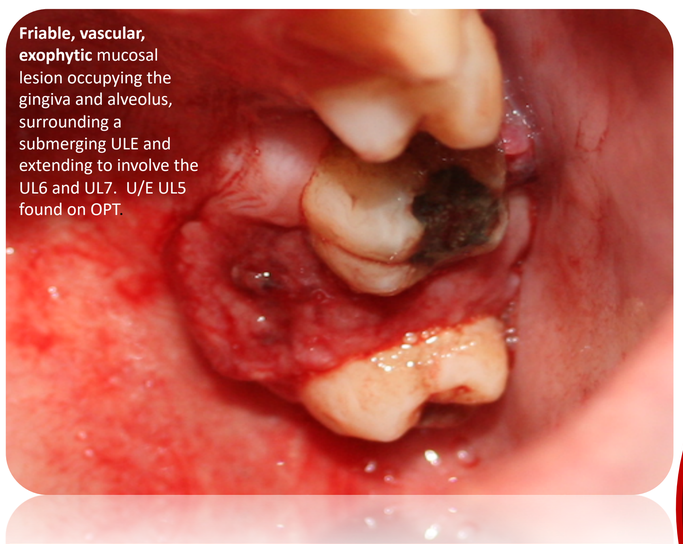
"The image shows central polypoid ulceration with a small cuff of residual pseudoepitheliomatous epidermis towards one side (right hand side of image)."



"Underlying the ulceration is granulation tissue with a regular lobular pattern of neovascularisation with associated mixed inflammation."

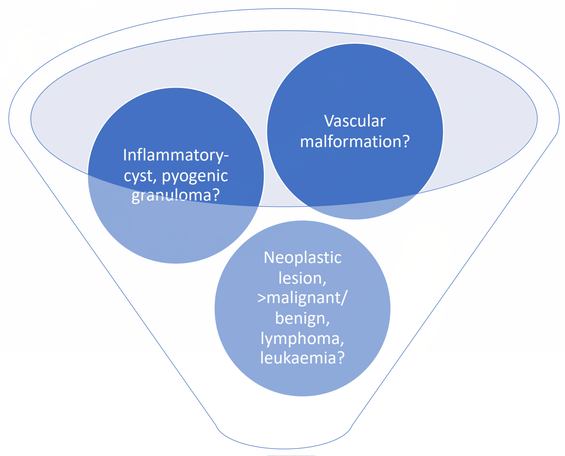


Clinical photo



Friable, vascular, exophytic mucosal lesion occupying the gingiva and alveolus, surrounding a submerging ULE and extending to involve the UL6 and UL7. U/E UL5 found on OPT

Differential diagnoses



Pyogenic granuloma

FBC's in A and E:

- ↓ **HB 31**
- ↓ 58.6fl MCV- **Microcytic RBC**
- ↓ 246 g/L MCHC- **Hypochromic RBC**
- ↓ **0.126 PCV- Haemodilute**
- ↓ **RBC 2.15 10^12/L**
- ↓ **MCH 14.4 pg**
- ↑ **Platelets 621 10^9/L**
- Borderline low reticulocyte count
- Slightly extended prothrombin time 17.1s
- Normal differential count
- Normal APTT
- Extremely low iron LEVELS- 2umol/L
- Transferrin saturations only 3%
- Ferritin less than 1
- Normal folate B12 and LDH

Negative blood cultures

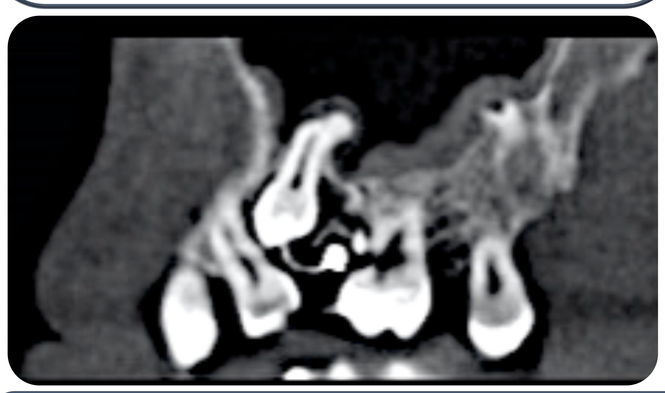
Iron deficient microcytic hypochromic anaemia

However good collaborative evidence of profuse bleeding from mouth

Radiographs

CBCT: identified radiolucent voids within the bone, with a cortical breach on the alveolar ridge, raising the possibility of a vascular malformation or tumour.

Contrast MRI: demonstrated a hyperintense mass in the upper left maxillary ridge however there were no signal voids to suggest an arteriovenous malformation. It concluded a highly vascular, inflammatory lesion likely relating to the submerged ULE



MRI results: Hyperintense mass in relation to left maxillary alveolus, no signal voids would suggest AVM. Hypervascular inflammatory lesion. Possibly related to the unerupted teeth. No bone destruction= not suggestive of aggressive malignant process. No lymphadenopathy.

Pyogenic Granuloma (PG) overview

- **Localised proliferation of inflammatory granulation tissue/ very vascular fibrous tissue.**
- **Most common** of all oral tumour like growths- considered neoplastic. Can also occur on skin.
- Term is a **misnomer**- no pus, not true granuloma. 'Focal fibrous hyperplasia' may be more suited term.
- Soft and vascular in nature, can have ulcerated surface - prone to hemorrhage, often painless.
- Not associated with infection
- Approximately **1/3 of PGs occur due to trauma** and poor oral hygiene may also contribute (1).
- Arises due to local irritants- in this case UE E and poor oral hygiene, Compounded by the bleeding
- Can recur if OH/ cause not addressed
- In females during pregnancy- this would be a pregnancy epulis- incidence of PG- higher in females with high steroid hormones.
- No racial predilection

Discussion

This case represents an unusual presentation of pyogenic granuloma which reduced the quality of life and required a blood transfusion in an otherwise medically fit young teenager.
It underlines the helpfulness of multimodal imaging in directing diagnosis and management.
Diagnostic biopsy, extraction and supportive measures to reduce trauma and secondary haemorrhage resolved the lesion and its surprisingly far-reaching consequences.

References:
(1) Bhaskar SN, Jacoway JR. Pyogenic granuloma- clinical features, incidence, histology, and result of treatment: report of 242 cases. J Oral Surg. 1966 Sep;24(5):391-8. PMID: 5220911.
Bibliography:
1. Ngan, V. 2003. Updated by Sivasaththivel, M. Tandon,S., Ly, L. Copy edited by Mitchell, G. January 2021. Pyogenic Granuloma, New Zealand derm, https://dermnetnz.org/topics/pyogenic-granuloma/ [accessed 07.04.21]
2. Banerjee, A. Thavaraj, S. 2020. Clinical problem solving in dentistry Odell's Clinical Problem Solving in Dentistry 4th Edition: : Elsevier pg: 59-62.