Pyogenic Granuloma

Synonyms: lobular capillary haemangioma

Pyogenic granulomata are common benign vascular lesions of the skin and mucosa. They are not infective, purulent or granulomatous (as the name might suggest) - rather, a reactive inflammatory mass of blood vessels and a few fibroblasts within the dermis of the skin.

Aetiology[1]

- This is not fully understood: rapid growth occurs in response to an unknown stimulus that triggers endothelial proliferation and angiogenesis.
- Trauma and burns can provoke the sequence but frequently there is no identifiable cause.
- Bacterial infection may be involved. *Staphylococcus aureus* is often isolated from the lesion.
- Other suggested causes include viral oncogenes, hormonal influences (pregnancy, oral contraceptive pill) and cytogenetic abnormalities.
- They have also been associated with certain medications:
  - Systemic and topical retinoids[2, 3].
  - Indinavir (a protease inhibitor)[4].
  - Chemotherapy agents such as fluorouracil and paclitaxel[5, 6].

Epidemiology

- Mean age for presentation is 6-7 years. Thereafter, there is a decrease in incidence with age[7]. They represent 0.5% of skin nodules in children[8].
- They are more common in women, due to frequent formation on the gingiva during pregnancy (pregnancy tumour, or epulis gravidarum) - occurring in up to 5% of pregnancies[9].

Visual appearance

- Solitary[10], red, purple or yellow papule or nodule arising from normal skin.
- Size varies from a few millimetres in diameter to several centimetres.
- Polypoid appearance - they often develop a stalk or ‘collarette’ of scale at the base.
- Friable lesion - they are often seen to be bleeding, crusted or ulcerated.
Presentation[1]
- Rapid eruption and growth over a few weeks.
- Most commonly, they occur on the head, neck and extremities (particularly the fingers).
- They occasionally occur on the external genitalia[11].
- In pregnancy, they are most likely to occur on the maxillary intraoral mucosal surface during the second and third trimesters.
- They have also been reported on the labial mucosa in men[12].
- Rarely, multiple satellite lesions may develop - especially in adolescents and young adults after prior attempts to remove the original lesion.

Differential diagnosis[10]
Includes:
- Basal cell carcinoma.
- Campbell de Morgan spot.
- Glomus tumour.
- Congenital haemangioma.
- Kaposi's sarcoma.
- Malignant melanoma.
- Metastatic carcinoma of the skin.
- Spitz naevus.
- Squamous cell carcinoma.

Investigation[13]
Some advocate sending all lesions for histological confirmation. This is because the vascular nature of the lesion makes dermoscopy unreliable[14]. However, there may be occasions on which dermoscopy may be considered sufficient (eg, typical appearance in a very young child)[15].

Primary care management[13]
Most patients seek help because of the bleeding associated with the lesion. Treatment options include curettage and cautery, shave excision, excision with primary closure and laser therapy. Cryotherapy may work but does not provide a histological specimen for diagnosis. One study reported the use of sclerotherapy employing sodium tetradecyl sulfate as the sclerosant. As with cryotherapy, this technique does not provide a histological specimen. Moreover, sodium tetradecyl sulfate is only licensed for the treatment of varicose veins in the UK, so the usual considerations concerning the use of unlicensed medicines apply.

When to refer
- For assistance with diagnosis and removal.
- Following a recurrence.
- Where a nodular melanoma is suspected.

Complications
Pain and bleeding are the most usual problems associated with this lesion.

Prognosis
- Pyogenic granulomata are benign lesions.
- Untreated lesions will atrophy eventually but only a minority will spontaneously involute within six months.
- Recurrence rates following treatment can be common regardless of treatment modality.
- Pregnancy tumours tend to regress spontaneously following childbirth so treatment should be postponed accordingly.

Further reading & references
- Pyogenic granuloma; DermNet NZ
- Pyogenic granuloma; Primary Care Dermatology Society, 2012

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