Case 18

- 54 yr old female
- Diabetic
- Renal failure
- Hyperparathyroidism
- Painful red plaque lower limbs
- Progressing to ulceration/skin necrosis
Summary

- 54 yr old female
- End stage Renal failure
- Developed painful necrotic plaques on legs
- Biopsy showed
  - Arteriole calcification
  - Ulceration
  - Fat necrosis
  - Vessel wall damage
  - Meshwork of calcification around fat cells
Differential Diagnoses

- Vasculitis
- Necrotising fasciitis
- Traumatic fat necrosis
- Pancreatic panniculitis
- Thrombophlebitis
- Monkeberg’s arteriosclerosis
- Calciphylaxis
Calciphylaxis

- Syndrome of vascular calcification and skin necrosis
- First described by Bryant and White in 1898 in patients with uraemia
- In 1962 Selye constructed a rat model
- Only in 1976 was calciphylaxis recognised as a clinical syndrome by Gipstein
- Frequency – 1-4% in ESRF
- Mortality rate – 2yr 60-80%
- Mortality worse in patients with proximal disease
Calciphylaxis

Arteriolar vascular calcification

Ischaemic subcutaneous necrosis

Painful spontaneous cutaneous ulceration

Significant morbidity & mortality
• Precise mechanism poorly understood and multifactorial
• Abnormal calcium and phosphate metabolism
• Background (usually) of chronic renal failure and secondary or tertiary hyperparathyroidism
• Usually calcium-phosphate product is raised
• Raised parathormone or vitamin D
• Very rarely renal and parathyroid function will be normal
• Non uraemic calciphylaxis
  – primary hyperparathyroidism
  – Malignancy
  – Alcoholic lover disease
  – Warfarin
  – Protein C and S deficiency
Calciphylaxis

• Shifting disease concepts
  – End Stage Renal Failure
  – Renal impairment - Hitti et al
  – Normal renal function - Hackett et al
  – Non-uraemic causes - Wolf et al

• Alternative terminology
  – Calcific uraemic arteriolopathy
  – Obliterative calcific vasculopathy
Glasgow Experience
2012-2014

- 10 cases of calciphylaxis
- 8/10 patients were female
- Mean age 69.5
- 60% had ESRF, 40% had chronic kidney disease
- 30% were hyperparathyroid
- 30% had a history of renal transplant
- 80% occurred on lower limbs
necrosis
eosinophils
BV necrosis
active inflam
rbc extravasation
Fat calcification
epidermal necrosis
dermal necrosis
skin ulceration
BV calcification
• Treatment in Glasgow
  – Haemodyalasis
  – Cinacalcet (oral drug to lower calcium)
  – Sodium thiophosphate (IV and oral)
  – Sevalamer (phosphate binder)
Sodium Thiosulphate

- >100 years: antidote for acute cyanide poisoning
- Topical treatment for acne & pityriasis versicolor
- Treatment of tumoral calcification
- 1st report use in Calciphylaxis – Cicone et al 2004
• Prognosis in the Glasgow Cohort
  – 6/10 have died from calciphylaxis
  – 2/10 have ongoing calciphylaxis
  – 2/10 are in remission

  – Mean time from diagnosis and death was 87 days
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