The Skin in Diabetes Mellitus

Dr. Shernaz Walton M.D., FRCP (Lon)
Consultant Dermatologist
Hull and East Yorkshire Hospitals NHS Trust
and
Honorary Clinical Reader
Hull York Medical School
• Diabetic Vascular Abnormalities

• Diabetic Neuropathy

• Cutaneous Infections

• Insulin Resistance and Acanthosis Nigricans

• Associated Conditions
Case 1

- Older female presents with this rash of 2 months duration
- Suspected cellulitis
- Otherwise well apart from Diabetes diagnosed 6 years ago.
**Erysipelas-like erythema**

- Well-demarcated, red areas
- Occur on legs or feet of older people with diabetes
- May have underlying destructive bone disease
- Average duration of diabetes - 5 years
- Cardiac decompensation may be involved
Case 2

- 60 yr. old male presents with brown marks on his shins
- Asymptomatic
- Long standing H/O Diabetes
Diabetic Dermopathy (DD)

- Most common dermatosis
- Microangiopathy and possibly neuropathy involved
- Lesions predominantly on shins (shin spots), forearms, thighs and over bony prominences
Diabetic Dermopathy (DD) Contd.

- Not Specific for diabetes
- No correlation between shin spots and duration/severity of diabetes
- Presence prompts investigation for other ‘pathys’ in a known diabetic
Case 3

• 76 yr. old lady presents with a 2 year H/O non healing ulcer on left foot
• Complains of tingling/numbness affecting her feet
• Diabetes for a number of years
DIABETIC NEUROPATHY (DN)

- Distal symmetrical polyneuropathy with mixed motor and sensory involvement
- Dorsally subluxed digits, distally displaced plantar fat pads, depressed metatarsal heads, hammer toes and pes cavus
DIABETIC NEUROPATHY (DN) contd

- **Diabetic foot** - Multifactorial aetiology
  - Peripheral neuropathy → ulcers
  - Accentuated plantar arches/hammer toes
  - Interdigital maceration → bacterial and fungal infection
  - Diabetic angiopathy → ulceration, necrosis, gangrene and osteomyelitis
• Proper foot care is essential to prevent painless and slowly penetrating ulcers, often occurring in the middle of a callosity - neuropathic ulceration
DIABETIC VASCULAR ABNORMALITIES

- **Diabetic Microangiopathy**
  - Affects small and large vessels
  - Proliferation of endothelial cells and deposits of P A S-positive material in the basement membrane of arterioles, capillaries and venules
  - Decreased luminal area
  - Responsible for retino-, nephro-, neuro- and dermo-pathy
**Large-vessel disease**

- Atherosclerosis is the second form of vascular disease associated with diabetes
- Intermittent claudication
- Pallid and cool skin distally on extremities
- Common clinical sequelae
  - MI
  - Cerebral thrombosis
  - Nephropathy
  - Ischaemia and gangrene of legs and feet
- Microangiopathy is usually present
Case 4

- 18 year old Insulin dependant diabetic lady
- Presents with non healing ulcers on shins
- Previous ulcers have healed with scarring
ASSOCIATED CONDITIONS (AC)

- NECROBIOSIS LIPOIDICA
ASSOCIATED CONDITIONS (AC) contd

• DISSEMINATED GRANULOMA ANNULARE

  - Inconclusive evidence and rarely seen in diabetes
ASSOCIATED CONDITIONS (AC) contd

DIABETIC BULLAE

- spontaneous atraumatic
- mostly on hands and feet
- arise on non-inflamed skin
- few mm to 3-5cms in size
- heal without scarring in 2-5 weeks
- histology shows intra-or sub-epidermal separation without acantholysis
ASSOCIATED CONDITIONS (AC) contd

- PRURITUS
  - frequency of generalized pruritus in diabetics is unknown
  - anogenital pruritus may be caused by candidiasis or haemolytic streptococci
ASSOCIATED CONDITIONS (AC) contd

• STIFF JOINTS AND WAXY SKIN

- waxy tight skin on the backs of the hands and joint limitation
- may be seen in insulin-dependent diabetes
ASSOCIATED CONDITIONS (AC) contd

- SCLEROEDEMA OF DIABETES MELLITUS
  - mainly in adults with non-insulin dependant diabetes
  - patients often overweight
  - permanent
  - causes little morbidity
  - no specific treatment
ASSOCIATED CONDITIONS (AC) contd

- VITILIGO
  - more frequent in diabetes
  - in late-onset diabetes, a 4.5 % frequency has been reported
ASSOCIATED CONDITIONS (AC) contd

- Eruptive Xanthomata
  - may develop in diabetes with hyperlipidaemia
  - lesions slowly resolve
ASSOCIATED CONDITIONS (AC) contd

FINGER PEBBLES

- 75% of diabetics compared with 21% of controls
- pebbly appearance of knuckle and distal finger skin
- changes of external origin (trauma) or internal (acanthosis nigricans)

ASSOCIATED CONDITIONS (AC) contd

- REACTIVE PERFORATING COLLAGENOSIS (FOLLICULITIS)
  - reports in patients with diabetes and/or renal insufficiency
  - cause attributed to diabetic microangiopathy and trauma by scratching
ASSOCIATED CONDITIONS (AC) contd

• HAEMOCHROMATOSIS
  - liver disease
  - hyperpigmentation
  - joint disease
  - hypogonadism
  - diabetes
ASSOCIATED CONDITIONS (AC) contd

• SKIN TAGS
  - occur on eyelids, neck, axillae
  - obesity is often associated
• **LOCAL INSULIN REACTIONS**
  - Immediate local erythema → urticaria within 30 mins and subsides within an hour (IgE-mediated)
  - Serious generalized immediate reactions are rare
  - Most common – delayed hypersensitivity reaction (onset 2 wks after start of insulin therapy)

  Itchy nodule (1-2 days at site of injection)
  → Hyperpigmentation
  → Scarring
ASSOCIATED CONDITIONS (AC) contd

- INSULIN LIPODYSTROPHY
  - rare
  - hypertrophic plaques at sites of insulin injection
  - atrophy of subcut. fat
  - seldom shows complete spontaneous resolution
  - mechanism not clear
 Incorrect text or Poor image quality for OCR: Original image not available for review.
CUTANEOUS INFECTIONS (CI)

- Furuncles/carbuncles - Staph. aureus
- Non-clostridial gas gangrene - E.coli, Klebsiella, Pseudomonas and Bacteroides
CUTANEOUS INFECTIONS (CI) contd

- Candida albicans infection of mouth, nailfolds, genitals and intertriginous areas
  - recurring or chronic infection \(\rightarrow\) balanitis and phimosis
CUTANEOUS INFECTIONS (CI) contd

- Dermatophyte infections
  - more frequent in diabetes
CUTANEOUS INFECTIONS (CI) contd

- Viral warts – severe and extensive