From Skin Tears to Leg Ulcers

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Age changes our bodies
Elderly – infection risks

- Decreased immune function
- Decreased efficacy of vaccines in elderly
- Co morbidities– diabetes, COPD
- Diminished mucosal barriers
- Mechanical changes to urinary tract system
- Malnutrition
Elderly skin

- Weaker and more susceptible to tearing
- Epidermal papillae flatten weakening rete pegs holding skin together
- Skin is drier, less elastic and tissue paper thin due to less subcutaneous fat, collagen, elastin deposition and sebum gland secretion
- Healing rates slower due to poor circulation and epidermal turn over rate
- Polypharmacy
- Nutritional deficits
  - Sussman and Golding (2011)

- “Healability”
Cross section of the skin
Physiology of wound healing

- Vascular response
- Inflammatory response
- Proliferation
- Maturation

(Flanagan 2003)
Phases of wound healing
Ref: Wikipedia 04/11
Intrinsic and extrinsic factors associated with skin tears

- Female
- Caucasian
- Immobility
- Long term corticosteroid use
- History of skin tears
- Altered sensory status
- Cognitive impairment
- Limb stiffness/spasticity
- Neuropathy
Intrinsic and extrinsic factors associated with skin tears

- Having blood drawn
- Polypharmacy
- Dependence for ADLs
- Using assistive devices
- Applying and removing stockings
- Removing tapes or dressings
- Vascular problems
- Cardiac problems
- Pulmonary problems
- Visual impairment
- Transfers and falls
- Prosthetic devices
- In/Continence
- Skin cleansers
- Improper use of skin sealants

Ref: LeBlanc and Baranoski (2011)
STAR Skin Tear Classification System Guidelines
1. Control bleeding and clean the wound according to protocol.
2. Realign (if possible) any skin or flap.
3. Assess degree of tissue loss and skin or flap colour using the STAR Classification System.
4. Assess the surrounding skin condition for fragility, swelling, discolouration or bruising.
5. Assess the person, their wound and their healing environment as per protocol.
6. If skin or flap colour is pale, dusky or darkened reassess in 24-48 hours or at the first dressing change.

STAR Classification System

**Category 1a**
A skin tear where the edges can be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour is not pale, dusky or darkened.

**Category 1b**
A skin tear where the edges can be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour is pale, dusky or darkened.

**Category 2a**
A skin tear where the edges cannot be realigned to the normal anatomical position and the skin or flap colour is not pale, dusky or darkened.

**Category 2b**
A skin tear where the edges cannot be realigned to the normal anatomical position and the skin or flap colour is pale, dusky or darkened.

**Category 3**
A skin tear where the skin flap is completely absent.

Skin Tear Audit Research (STAR). Silver Chain Nursing Association and School of Nursing and Midwifery, Curtin University of Technology. Revised 4/2/2010.
Prevention strategies

- Skin hygiene, warm water and soapless
- Moisturising of skin twice daily – damp skin
- Wear long sleeves and long trousers
- Protect from trauma during routine care

Use proper procedures for transfers
- Pad rails, wheel chair legs, furniture edges
- Adequate nutrition and hydration
- Avoid adhesives on the skin
- Caregivers to have short fingernails

Ref: LeBlanc and Baranoski (2011)
Carville et al. (2014)
Skin tear sustained

- Cleanse wound with warmed saline or water
- Evacuate any clots or debris if possible
- Unravel skin to oppose edges – the skin can act like a plaster, but this must be done within the first hour or two to be totally effective
- Steri-strip across wound, but do not apply tension to the surrounding skin as this can cause further damage
- Observe the flap for colour
- Non adherent absorbent dressing
- Minimal tape
- Bandage from joint to joint

Ref: LeBlanc and Baranoski (2011)
Lower limb Oedema

- Multiple causes of oedema
- Prompt management is essential, as wound healing can be delayed otherwise
- Lower limb wounds can be slow to heal – particularly the shin (poor blood supply)

- Support to the surrounding tissue – Soffban and crepe toe to knee bandaging
- Tubigrip toe to knee – unless arterial compromise suspected
- Three layer tubigrip in sections
Poor bandaging technique
Assessment

Healability
What does the patient bring with them in order to heal the wound?

- Comorbidities—Diabetes, CHF, PVD, Anaemia...
- Previous history of slow to heal or ulceration
- Poor nutrition
- Smoking
- Polypharmacy
When does a wound become an ulcer?

- Between 4 – 6 weeks
- Refer onto District Nurse service for detailed examination of limb
- Immediately if there is a past history of an ulcer, venous hypertension or poor healing
- Or if they have an ulcer already
- Or if no improvement within two weeks

- Delay in referral increases the healing time
Arterial map of the lower limb

- Aorta
- Right common iliac artery
- Internal iliac artery
- Lateral femoral circumflex artery
- Lower superficial femoral artery
- Descending branch of lateral femoral circumflex artery
- Inferior genicular artery
- Femoral artery
- Profunda femoris artery
- Popliteal artery
- Anterior tibial artery
- Posterior tibial artery
- Peroneal artery
- Dorsalis pedis artery

The most common sites for arterial occlusion are:
- Lower superficial femoral
- Aorto-iliac vessels
- 7% multiple sites

Dorsal arch
Positions of the Pedal Pulses
Arterial ulcers

- Pedal pulses absent
- Foot cool, pale or dusky pink
- Delayed capillary return
- Hairless
- Poor condition toenails
- Pain
- Foot/ anterior/posterior of the limb
Arterial ulcers
Venous system of the lower limb
Venous disease

- Venous hypertension what is it?
- Deep and superficial veins connected by perforators
- Incompetent valves
- High pressure in veins
- Oedema and venous stasis
Oedema: blood has left the highway (veins) and gone to the hills! (skin).
Guidelines: VLU full-thickness defect of the skin persists due to venous disease of the lower leg.

- Identify those at risk of VLU
- Assess and accurately diagnose VLU
- Optimise management plan
- Promote self care
- Prevent complications
- Optimise QoL (e.g. pain)
- Reduce VLU recurrence
- NZWCS Leg Ulcer Assessment form based on guidelines

Slide courtesy Mandy Pagan
Southern DHB
Leg Ulcer Assessment Form

- HISTORY – Clinical, Pain & Leg Ulcer
- EXAMINATION of the Leg & Ulcer
- Wound assessment
- INVESTIGATIONS to Support Diagnosis
- Diagnosis
- Planning, Implementation & Evaluation
Venous ulcers

- Can palpate pedal pulses
- Skin warm to touch
- Toenails in good condition (look for tinea)
- Capillary return brisk
- Oedema
- Shallow ulcers around gaiter
Venous ulcers
Arterial or venous
Summary

- Prevent skin tears
- Treat skin tears promptly
- Identify the aetiology of the ulcer
- Refer on promptly if required
References


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- Wikipedia as stated on slides.
Thanks

- Mandy Pagan
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- All the patients that gave consent for their photos to be used for teaching purposes