NATVNS best practice in the prevention, assessment and management of skin tears

Introduction

Skin tears are viewed as an increasing problem by healthcare practitioners and if appropriate treatment is not given, these injuries may become chronic wounds with prolonged healing subsequently causing unnecessary pain and distress (Jones & Millman 1983). Traditional management of skin tears can cause new damage and slow down the healing process (Meuleneire, 2002). This type of injury usually occurs in immature skin (neonatal) and in the elderly. As our population changes and the number of elderly people increases, therefore whether we are caring for patients in their own home, a care home or hospital, we need to be aware of best practice in prevention, assessment and management of skin tears. This document summarises the current evidence.

International consensus

An international consensus panel have defined skin tears as “A wound caused by shear, friction and or blunt force resulting in separation of skin layers. A skin tear can be partial-thickness (separation of the epidermis from the dermis) or full thickness (separation of both the epidermis and dermis from underlying structures)” (LeBlanc et al 2011). Skin tears most commonly occur at the extremes of age, in critically ill or medically compromised individuals and in those who require assistance with personal care (Carvell et al, 2007, Irving et al 2006, Belton 2008). Prevention of skin tears where possible should be our priority. When skin tears occur, accurate assessment and appropriate management will minimise further trauma and preserve viable tissue.

Prevalence of Skin Tears

The evidence on prevalence and incidence of skin tears is limited and generally dated. An Australian study conducted in a long term care facility indicated that 41.5% of known wounds were found to be skin tears (Everett & Powel 1994). In 1991 an incidence of 0.92% was reported in an elderly care facility in the USA (Malone et al, 1991). A more recent survey found prevalence of between 8-11% in public hospitals in Western Australia (Government of
Western Australia Department of Health, 2009). The work carried out in Australia led Carville et al (2007) to state that skin tears are perceived to be common wounds and occur more frequently than pressure ulcers. To date there are no prevalence data available for the UK therefore the true extent of patients requiring hospital attendance or the resource impact or cost to the patient of the NHS due to skin tears is still not fully known.

The management of skin tears differs between care settings. An international survey aimed at exploring assessment, prediction, prevention and treatment of skin tears was carried out between June and December 2010 (LeBlanc et al 2011). In total 1127 healthcare professionals from 16 countries completed the survey. 69.6% of respondents reported a problem with current assessment and documentation of skin tears in their practice settings. A simplified method of documenting and assessing skin tears was favoured by 89.5% of respondents. Despite the availability of skin tear assessment and classification scales, the majority (80.9%) admitted they were not used in their practice settings.

If we compare this to the prevention and management of pressure ulcers where there are well recognised best practice guidelines which incorporate risk assessment, classification and management strategies, it is clear that we need to offer practitioners better information on prevention and management of skin tears.

**Age related skin changes associated with skin tears**

Both intrinsic and extrinsic factors make the skin more vulnerable

The outermost component of the epidermis is composed of keratinocytes which makes up the stratum corneum which is the major barrier to chemical and microbial invasion. As we age the turnover time of keratinocytes is reduced by 50% in the epidermis during the later years of life (Sibbald et al 2009). This results in thinning of the epidermis. Additionally, the dermal-epidermal junction thins and flattens with age this reduces the resistance to shearing forces (Voegell, 2010). The dermis is composed of connective tissue and other components such as blood vessels, lymphatics, macrophages, endothelial cells and fibroblasts. During the ageing process there is approximately 20% loss in the thickness of the dermal layer.

Finally the subcutaneous fatty layer becomes thinner with age and certain areas of the body such as the face, neck and hands will lack cushioning produced by the fatty deposits and as such these areas and the arms and lower legs, can become susceptible to skin tears (Resnick 1993). The vascular capillaries become more fragile leading to ecchymosis and senile purpura (White et al 1994)
Neonates and infants are also susceptible to skin tears. Neonates have underdeveloped skin and children have only 60% epidermal thickness (Baharestani 2007). Neonates also have decreased epidermal to dermal cohesion (Irving 2006).

Other factors to consider

Immunological status and malnutrition, circulation and oxygen intake may also impact on fragility of the skin (Meulenire, 2002).

Best practice in prevention of skin tears

Prevention of skin tears starts with early identification of individuals who are at risk. Based on available evidence the consensus statement of an international panel suggests the following strategies should be part of prevention

1. Assess for risk upon admission to healthcare service and whenever the individuals condition changes and document in care plan
2. Implement a systematic prevention protocol (points 3-10)
3. Have individuals at risk wear long sleeves, long trousers or knee high socks
4. Provide shin guards/leg protectors for those individuals who experience repeat skin tears on shins
5. Ensure safe patient handling techniques and equipment/environment
6. Involve individuals and families in prevention strategies
7. Educate registered and non registered staff and care givers to ensure proper techniques for providing care without causing skin tears
8. Consult dietician to ensure adequate nutrition and hydration
9. Keep skin well lubricated by applying hypoallergenic moisturiser at least 2 times per day. Encourage the patient or their carers to apply emollient.
10. Protect individuals at high risk of trauma during routine care from self-injury

LeBlanc & Baranoski (2011)
Stephen-Hayes & Carville (2011) also give practical advice on maintaining a safe environment to minimise the risk of skin tears which includes

- Ensure adequate lighting and position small furniture (night tables, chairs) to avoid bumps or knocks. Remove rugs and excessive furniture.
- Upholster or pad sharp borders of furniture or bed surroundings with padding and soft material
- Use appropriate aids when transferring patients and adopt good manual handling techniques according to local policy
- Never use bed sheets to move patients as this can contribute to damage by causing dragging effect on the skin. Always use lifting device or slide sheet
- Where possible reduce or eliminate pressure, shear and friction using pressure relieving devices and positioning techniques

Include these points where relevant in the patients care plan

**Best practice in assessment and management of skin tears**

The most important aspect of assessment and management is to minimise further trauma and preserve viable tissue.

It is important to classify the type of skin tear as this will determine the severity of the skin tear and aid in planning appropriate treatment. The STAR Skin Tear Classification System (Carville et al, 2007) is a validated classification tool and is the one recommended by the NATVNS for use throughout Scotland.(Fig 1). It is important for the practitioner to be aware of the classification system which is being used in their clinical setting.
The same principles used to manage other wounds should be employed when treating skin tears (Baranoski, 2003). O’Regan reviewed the existing literature on skin tears and concluded that wounds should be treated in a systematic way to include cleaning with normal saline, control of bleeding, clot removal, and an appropriate dressing to address wound bed characteristics (O’Regan 2002).

Figure 1 STAR skin tear classification system

**Recommendations for management of skin tears**

- Control bleeding
- Assess the wound, skin flap or pedicle and determine the type or category of skin tear using a validated documentation system (e.g. STAR classification system)
- Cleanse the skin tear following assessment using warm saline or water to remove debris and any residual haematoma
- Depending on healthcare setting a tetanus immunoglobulin may be administered
- Approximate the skin flap by gently easing the flap back into place using dampened cotton bud or gloved finger
• If the flap is difficult to align, consider using a moistened non-woven swab. Apply for 5-10 mins to rehydrate

• Encourage moist wound healing by applying a dressing such as soft silicone-based mesh or foam dressing, lipido-colloidal based mesh and foam dressing, calcium alginate, adsorbent clear acrylic and skin glue

• Avoid the use of adhesive strips. Sutures and staples are generally not recommended however they may be required in the treatment of deep, full thickness lacerations.

• If possible dressing should be left in place for several days to avoid disturbing the flap

• If an opaque dressing is used mark an arrow to indicate the preferred direction of removal and record in notes

• Dressings should be held in place with stocking-like products (e.g. tubular viscose retention bandage)

• Pain assessment should be carried out and appropriate analgesia should be provided

Stephen-Hayes & Carvile (2011); LeBlanc & Baranoski (2011)

Complete formal wound assessment form.

Document in care plan, complete accident/incident documentation and where relevant discuss with family or next of kin.

When to refer

If the skin tear is extensive or associated with a full thickness injury, significant and or uncontrolled bleeding or haematoma formation, a surgical/plastic surgery review may be required (Stephens-Hayes & Carville, 2011).
If the skin tear is on the lower leg and fails to progress consider early referral to local leg ulcer clinic or vascular nurse specialist for leg ulcer assessment. Referral to Tissue viability specialists may also be indicated if the wound fails to progress to healing.

**Best practice in ongoing management**

At each dressing change the dressing should be gently removed in the direction indicated by the arrow. If it does not remove easily, consider the use of saline soaks or silicone-based adhesive removers Mudge & Orsted (2010). The wound flap may be friable so care should be taken to prevent disturbing it. The wound should be observed for signs of infection and any changes in the colour of the tissue of the flap which may indicate that it is becoming non-viable (Stephen-Hayes & Carville, 2011).

**Conclusion**

Skin tears are common wounds, particularly at the extremes of age. We should be aware of the risk factors associated with skin tears and wherever possible minimise risk to patients. When a patient develops a skin tear, the use of a skin tear classification system will aid our decision making, and ensure we are all using the same language to describe lesions. Treatment regimes should be structured on best available evidence.
References

Everett S, Powell T (1994) Skin tears-the underestimated wound. Prim Intent 2;8:8-30
LeBlanc K, Baranoski S, Regan M (2011) Skin Tear Survey (unpublished data)
Meuleneire F (2002) Using a soft silicone-coated net dressing to manage skin tears. Journal of Wound Care 11;10:....
O’Regan A (2002) Skin tears; a review of the literature. Wound Counc Enterostomal Ther J 22;2:26-31
WoundsWest wound survey 2009: key results at a glance. Government of Western Australia Department of Health.