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Reports written by

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Skin Tears

Skin Tears Year 2022: An update on definition, epidemiology, classification, etiology, prevention and treatment
Dimitri Beeckman

The updated 2018 ISTAP (International Skin Tear Advisory Panel) definition of a skin tear is “A skin tear is a traumatic wound caused by mechanical forces, including removal of adhesives. Severity may vary by depth (not extending through the subcutaneous layer)”.

ISTAP Classification for skin tears:
- Type 1: Linear of flap tear which can be repositioned to cover the wound bed.
- Type 2: Partial flap skin loss that cannot be repositioned to cover the wound bed
- Type 3: Total tissue loss exposing entire wound bed

Skin tears are caused by a variety of mechanical forces: shear and friction, including trauma, falls, poor positioning, transferring techniques, equipment injury, and removal of adherent dressing. Neonates and older individuals are particularly susceptible because of age-related physiological skin changes. Photo-aging also increases risk of skin tears.

It is essential to identify risk factors in order to prevent skin tears: general health (polypharmacy, nutrition), mobility, fragile skin or previous skin tears. If any of these risk factors is present a program for skin tear prevention should be implemented.

An interdisciplinary approach is needed, patients should be empowered, skin-friendly dressings should be used. Protective clothing and fall prevention are also essential. Traditional water and alkaline soap washing should be avoided. Excessive washing contributes to skin dryness and irritation, so frequency of bathing should be minimized, Emollient therapy Is vital for this individuals.

Assessment should involve bleeding control, cleansing, approximate wound edges (gently) and avoid trauma, protect perilesional skin and control pain. The skin flap is the best dressing, but it should be removed if it is not viable.

When dressings are applied, you can draw arrows to indicate the direction of the flap to take into account when removing the dressing. Skin glue is recommended to approximate edges. Iodine based dressings, hydrocolloid dressings and steri-strip should not be used to treat skin tears.

Skin tears in acute care settings, the hidden wound
Julia Bresnai-Harris

Skin tears in acute care occur more frequently than pressure ulcers. Regarding prevalence of skin tears, in acute care it ranges from 3.3-22%, in palliative care settings 30%, in the paediatric acute care setting, one study reported a prevalence of 17%. An audit of in-patients in acute hospitals across Wales identified a prevalence of 2.57%
ISTAP has a website with resources and materials that can be downloaded: www.skintear.org

Skin tears: late pick-up? Paradigm shift. Update in 2022
Dave Baer

Difficulties associated to skin tears include fragile skin, medication (cortisone, anticoagulation), duration of the wound, hematomas.
To approximate edges, when a flap exists, transcutaneous anchor stitches can be used to fix the flap.
The 6 hour deadline for suturing should be disregarded (18 h as a general rule and 24 hours up to even 48-72 h for the face). We must try to suture, even if they are long-lasting wounds, if no signs of infection are present.
Some rules to be applied: The wound should be cleansed with sterile saline solution. Devitalized tissues, foreign bodies and hematomas should be removed. Surgical debridement should be used when indicated.
Silicone interface dressing prevents the dressing from adhering to the wound.

Scar prevention and treatment modalities

Introduction / The burden of scars
Hubert Vuagnat

We may find atrophic scars (acne, stretch marks), hypertrophic and keloid scars. Wounds with a lot of inflammation have an increased risk of becoming pathological scars. Scars can result in physical problems such as itching, skin fragility, sensitivity, pain and contractions. Furthermore, psychological problems may arise. “Textbook on scar management”, with Luc Téot at first writer has been published.

Innovations in scar prevention & management
Luc Téot

Regarding scar management, we need high quality trials but we have mostly expert opinions. It is difficult to use objective tools to assess the result of a therapy on a scar.
Recent guidelines on scar prevention and treatment have been published.
One of the cheapest solutions after large surgery is microporous hypoallergenic tape. It is adhesive, microporous, in polyurethane, hypoallergenic and should be used for a minimum of 3 months.
Use hydrocolloid dressings in children, especially in burns, to control scar tension, to eliminate stretching forces, to protect from UV and to prevent hypertrophic scarring. It becomes cost effective and theoretically can be worn for 4-7 days continuously, even during bathing, 3 to 6 months. No RCT are available.
Silicone products are the most used. Gels, spray and silicone gel sheeting can be found.
Intralesional corticosteroid injections have been used since the mild 1960s. There is large consensus for the use of intralesional triamcinolone acetonide.

Regarding compression and massage, pressure garments are frequently used for the prevention of excessive scar formation post-burn. Multiple clinical cases, some short series and no RCT exist. The disadvantage is poor compliance (it has to be worn 23h per day/6 months) and specialists are needed (physiotherapists).
Cryotherapy is an old technique, but still very used by dermatologists. Cryosurgery creates oedema and blisters, with risk of hyperpigmentation.
The combination of 5- Fluorouracil and corticosteroid injections is used “off-label” it reduces the recurrence when performed prior to surgery. This technique has good results, without systemic side effects.
Scar surgery is efficient in excision of hypertrophic scars. Different varieties are: excision+ suture+ radiotherapy, excision+ simple suture, excision+ z-plasty.
Techniques should be combined (silicone, intralesional corticosteroids, cryotherapy, pressure, surgery, radiation, laser therapy, 5-fluorouracil, bleomycin, interferon, intralesional botulinic toxin, fractional lasers, intralesional cryotherapy).
Scar camouflage helps to reduce the negative impact of scars on self-image: make up with specific products and tattoo are useful.
Patients should be educated about the benefits of occlusion and moisture of scars.

Light and other modalities for treatment of scars
Hans-Joachim Laubach

Considering atrophic scars, fractional photothermolysis may induce collagen production due to activation of senescent fibroblasts secondary to cytokines release. It is also used to promote skin rejuvenation and in patients with post-lupus discoid scars, acne scars or regressed infantile hemangioma. It could also stimulate melanin production. Other strategies in atrophic scars are hyaluronic infiltration or surgery.
For hypertrophic and keloid scars inflammation should be reduced. The traditional treatment is triamcinolone. The injection should be superficial so that the product do not diffuses subcutaneously.
Pulsed dye laser is also helpful. It works by creating a biological response within the skin (photobiomodulation not destruction), it reduces FGF-beta1and decreases fibroblasts activity and transformation into myofibroblasts).

What’s new?

What’s new in dressings and the local treatment of wounds?
Christine Faure Chazelles

Regarding wound dressing reviews in 2020-2021:
- “Wound cleansing (4 studies)”: lack of convincing data to guide decision-making on the effectiveness of wound cleansing/lack of cleansing and on optimal cleansing approaches for venous leg ulcers.
- “Topical treatment for facial burns (12 randomised clinical trials)”: convincing data with a low to very low confidence level for the effects of any topical intervention on wound healing in people suffering from facial burns.
- “Silicone gel sheeting for treating hypertrophic scars (13 randomised studies)”: no certainty as to the efficacy of silicone sheeting vs other treatments.

What’s new in technologies?
Sylvie Meaume

- Light therapy: Flex LED based Smart Light System: Blue light has antimicrobial + anti-inflammatory

effects in the first stages of the healing process. Controlled via Bluetooth and a mobile application.
- Local oxygen therapy: There are several devices (continuous diffusion, constant pressure of 22 mmHg and cyclical pressure of 10-15 mmHg)
- Electrical stimulation (WoundEL and Accel Heal Solo devices): A Cochrane review concludes that electrical stimulation probably increases the proportion of healed pressure sores, but its effect on the time required to achieve complete healing is uncertain, and the certainty level associated with the evidence for all endpoints is moderate, low or very low.
- Debrichem: A topical desiccant agent containing methanesulfonic acid. Indicated for the treatment of chronic infected and necrotic wounds. This innovative product dries out (dehydrates) the biofilm and pathogens, claiming chemical debridement. The surrounding healthy skin is not affected.
- Cold plasma: Plasma is a non-biological but physical term, consisting of ions and electrons selected for their regenerative, bactericidal and pH-modulating properties. A multi-centre, randomised, open-label, prospective non-inferiority trial with 78 patients showed that 59% of patients treated with cold plasma had healed completely after six weeks vs 5% of those treated with "best practice wound dressings".
- Wound Express: A device placed on the thigh that increases venous and arterial blood flow, to be combined with leg compression therapy.
- Provizio: A system for detecting areas at risk of pressure ulcers. It measures epidermal moisture and informs caregivers of early changes before they are visible on the skin.
- Interdry: A textile (silver) that evacuates moisture from folds (intertrigo management).

What's new in telemedicine?
Anne Dompmartin-Blanchere

It is necessary to create an agile care pathway (teleconsultation + being able to examine patients in person, if biopsy is necessary + being able to hospitalise the patient if necessary, if there are any complications). This helps identify fragile patients. The limitation is the cost of coordination.
In terms of savings, a real-life study in Cannes with access to SS data concluded there would be savings of €4929/patient over a 9-month period. Similar results were found in a randomised controlled trial. Home care provides the opportunity to use what already exists and adapt care to the patient; it reduces hospitalisation, transport and costs.
The future lies in remote assistance-telecare, which allows for the remote provision of support and improved knowledge, especially if the patient cannot be moved or if there is no expert nearby. It enables the caregiver to be assisted and reassured.

What's new in skin substitutes?
Luc Téot

- The epidermis is immunocompetent; the dermis is not.
Seventy-six substitutes are commercially available. Three systematic reviews and 22 RCTs have examined the use of 16 separate skin substitutes for diabetic foot ulcers, pressure sores and venous ulcers. More studies with better designs and reporting are needed.
Data on leg ulcers and artificial dermis are scarce. There was a limited series of six patients with non-healing ulcers and all healed after an average period of 14 weeks.
With regard to the possibility of spontaneous re-epithelialisation without skin grafting in bi-layer collagen-based artificial dermis, a study with 122 patients with lower limb wounds showed that Integra and Nevelia had the highest percentages of graft take with skin grafting. However, Pelnac showed more rapid re-epithelialisation without skin grafting.
A recent study with 71 patients compared Pelnac and Integra. Integra was more effective for wounds deeper than 1.5 cm.
Therefore, the clinical indications for skin substitutes (with or without skin grafting) are as follows:
- Surgical, requiring a thin skin graft:

o Burns or trauma
o Scar revision plastic surgery
o Chronic wounds
o After tumour resection
- Non-surgical, without skin grafting:
o Small diabetic foot wounds
o Chronic wounds with no possible secondary grafting

Persistent wounds

Assessment shortcomings
Julie Malloizel

It is always necessary to understand the pathophysiology of the wound and undertake a comprehensive assessment for a holistic approach.
There have been few studies evaluating compliance. Compliance should be part of the aetiological assessment. In the event of non-compliance, healing rates are half as high and the healing process lasts twice as long. Recurrence rates are two to 20 times higher in non-compliant patients (who stop wearing compression therapy after healing).
The wound should be closely observed to detect purulent drainage, bone contact and subcutaneous calcification.
The atypical nature of the wound does not relate solely to the local appearance (fungating, infiltrated appearance) but also refers to the location, the appearance of the peri-lesional skin, pain, and progression. Biopsy will help us determine the diagnosis.

Assessing comorbidities
Sylvie Meaume

Comorbidities can cause delayed healing, which is why they need to be identified.
Venous insufficiency should be identified. In the event of a leg wound, venous disease should be investigated, for example skin tears on the leg or surgery to remove a leg tumour, and venous compression therapy should be prescribed. We should not wait until the wound becomes chronic (six weeks). We should consider "functional" venous insufficiency in paraplegic patients.
We should consider the associated PAD in the event of heel pressure ulcers and not only in the event of typical leg ulcers and diabetic foot wounds.
Few studies have assessed the direct relationship between hyperglycaemia and wound healing, and those that have investigated the relationship between HbA1c and time to wound healing have found either no relationship or conflicting results.
Anaemia appears to have no effect on wound healing if blood volume is maintained.
Nutritional problems have mainly been shown to be related to pressure sores. A thorough clinical examination should be carried out (mouth, teeth, social context). Vitamin deficiency should be treated.
Medications that can interfere with wound healing include anti-cancer drugs, immunosuppressants, hydroxyurea, NSAIDs, corticosteroids, nicorandil, and anticoagulants.
Psychiatric and neurological disorders can have an impact, for example with cognitive impairment, depression and stress. One study showed that in elderly subjects experiencing stress, increased cortisol levels were linked to pressure ulcers. Relaxation has a beneficial effect on patients with chronic wounds.
Oedema (hydrosodium inflation in tissues) reduces oxygenation regardless of the location of the wound. Lower limb oedema aggravates tissue damage irrespective of its origin: cardiac or venous

insufficiency or malnutrition. Compression therapy and elevation of the legs improve tissue oxygenation.
In conclusion, depending on the wounds being treated, check-lists of co-morbidities to investigate should be drawn up and diagnostic methods should be provided to specify them. The social and economic context should not be overlooked.

Role of local infection
Eric Senneville

Emergence of the concept of chronic biofilm-based infections. Biofilms will promote the proliferation of anaerobic bacteria and thereby lead to inflammation.
The microbiology of persistent wound infections is characterised by:
- Gram-positive cocci: Staphylococcus aureus, streptococci
- Gram-negative bacilli: E. Coli, Klebsiella, Proteus, Pseudomonas aeruginosa
- Strict anaerobes: Peptostreptococcus, Bacteroides, Clostridium

A persistent wound is more likely to become infected (it has increased inflammation, less granulation and remodelling, and an altered microbiota). When the wound becomes infected, there are more pro-inflammatory cytokines; there is also more enzymatic activity (metalloproteinases) and less growth factor activity.
The biofilm phenomenon is normal for bacteria and is highly dynamic. The diffusion of antibiotics is altered and bacteria are more resistant.
Antiseptics can reduce the bacterial load and prevent infections from recurring. The disadvantages are cytotoxicity, allergisation and acquisition of resistance.
The Therapeutic Index for Local Infection (TILI) score helps initiate early treatment for local infection based on the direct signs (presence of pathogens in the wound, infected surgical wound or purulent discharge) and indirect signs (peri-lesional erythema, increased local heat, oedema, induration, swelling, spontaneous or pressure pain, stagnant healing, increase/change in the colour or odour of the exudate.
The treatment of biofilms should always include a disruptive strategy, with mechanical debridement.

Non-healable wounds
Isabelle Fromantin

A non-healable wound can be a consequence of the disease, the treatment, the inability to treat, or a social wound.
With regard to wound treatment, it is necessary to prevent alteration, local infection and pain and provide comfort. We need to have a long-term, ecological vision that includes supportive care: paramedical, medical (geriatrician, palliative care) and networks (home care).
The Wound-QoL questionnaire helps us regularly assess the quality of life of patients, which is essential.
A lack of O2 can be responsible for the absence of healing: when revascularisation is not possible, for some sickle cell ulcers, on irradiated areas and in cases of non-operable radionecrosis.
It is always necessary to work with the patient to decide on the best choice in their unique situation.

Reports written by

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Wounds and dementia: dealing with a more complex treatment situation

This talk was presented jointly by a psychologist and a doctor with experience in treating dementia patients, working at the Sainte Perrine hospital in Paris.

The presentation began by addressing the concept of variability in the clinical presentation of dementia, but also in that of the associated wounds. Depending on the stage of dementia (mild, moderate or severe), the associated wounds and their treatment will be different. At the initial stage, patients may show a pattern of denial with regard to the wound, which seems like a much smaller problem than the cognitive disorder whose consequences they are experiencing, or conversely, they may focus on the wound because it represents an issue that's more readily controlled than their memory problems. At more advanced stages, the patient often presents psychobehavioural disorders, making treatment difficult on a variety of levels: providing care, performing therapeutic actions, keeping the dressing in place, etc.

The type of wound is also influenced in part by the aetiology of the patient's dementia. As such, the wounds may be directly related to the type of dementia, and may be experienced differently, as well as the treatment, depending on the type of neurocognitive pathology. For example, patients with vascular dementia have an increased risk of developing an arterial ulcer, patients with Alzheimer's dementia often present scratching wounds, and those with Lewy body dementia show post-traumatic wounds induced by the falls often associated with this pathology.

Besides these difficulties, there are common obstacles in the treatment of dementia patients, regardless of the stage and the cause of the cognitive disorders. Memory problems are indeed the cause of patients' frequent manipulation of their wound dressings (since the patient doesn't remember that they have a wound), but also of a sense of isolation and abandonment since the patient forgets about the treatment and care that's being provided to them. In addition, these memory problems are often combined with language disorders, causing problems with communication and understanding and leading to an erroneous interpretation of the medical situation.

The cognitive symptoms are also the source of a problem of recognition that affects all of the patient's senses, known as agnosia: visual agnosia, in which the patient cannot see the wound as it is (incorrect assessment of severity, size, etc.), olfactory agnosia and tactile agnosia (difficulty with expressing symptoms, especially painful symptoms associated with the wound, and with distinguishing sensations of discomfort and pain). Finally, the patient's cognitive disorders are manifested in deterioration of executive functions, making management of wound care very difficult, especially in a home setting: inability to make an appointment with the caregiver to replace the dressing or even open the door for them, loss of deductive reasoning ("if there's a bandage there, I shouldn't touch it"), etc.

The presentation continued with specific clinical cases, illustrating the difficulties of wound treatment in dementia patients and the tools that caregivers can use to overcome them. The different types of wounds seen in dementia patients were presented, divided into different categories:
- acute traumatic wounds: resulting from falls (sometimes occurring in a context of constant wandering about), behavioural problems (notably in cases of gestural stereotypy: an unexplained repetitive gesture that eventually results in a wound), auto-aggression induced by medical care (especially in cases of physical restraint, which may cause bedsores, sometimes with unusual topographies), or wounds occurring during food or liquid intake (confusion between container and contents, resulting e.g. in the edge of a glass breaking in the patient's mouth).
- chronic wounds: identical to elderly patients without cognitive problems, but with treatment made more difficult by the presence of cognitive problems.

The speaker also reminded the audience that treatment of these patients is ultimately based on

common sense (opt for plastic cups and plates, trim nails short, etc.), but also on ingenuity: put multiple pairs of socks one over the other to prevent a patient with a diabetic foot from touching the wound, combine stockings with trousers to limit access to leg ulcers, etc. It is also important to adapt to the patient by identifying situations, locations, caregivers, and environments in which the patient feels more at ease and where treatment can proceed in a more favourable way.

The speaker then discussed the dementia patient's perspective on their wound. She mentioned the concept of the body map, which is doubly distorted in a dementia patient with a wound. The elderly dementia patient thus experiences multiple "breaches": a breach in their skin and in their psychological boundary, which are intimately related. These breaches contribute to the patient's anxiety, which in turn contributes to the difficulties of wound treatment (apprehension, refusal of care, etc.).

Dr Candas concluded by reminding the audience that for these patients, a multidisciplinary, ethical and prudent approach is often the key to successful treatment. The objective to keep in mind is also to maintain patients' quality of life as much as possible, which does not always mean healing of the wound.

Domestic wounds in childhood

Anne Le Touze

Domestic accidents are caused by the unsuitable environments of children, in particular preschoolers. Sport and school courtyard accidents are generally dermal abrasion injuries.
Animal bites usually involve a dog known to the family that is considered as a cuddle toy. These are usually tissue-damaging facial wounds.
Some general points in relation to facial wounds: anti-tetanus vaccination, local anaesthesia +/- nitrous oxide or general anaesthesia; we should use fine monofilament sutures that cannot be absorbed by the skin; they should be sufficiently close together but not very tight; they should be removed on the 5th day to avoid excessive inflammation. We can use Steri-Strip closures or skin glue. Glue is very beneficial for eyelid wounds.
With regard to the lips, we need to perfectly realign the Cupid's bow and restore continuity of the orbicularis oris muscle. It should be noted that local anaesthesia causes contours and marks to disappear.
Wounds with loss of substance can be left to heal by secondary intention.
Regarding the ears, if cartilage has been exposed, antibiotic therapy is necessary.
The eyelids usually require general anaesthesia.
As for wounds inside the mouth, they need to be sutured to prevent bulging scars. Anaesthetic sprays are effective and absorbable sutures (not too fine) should be used, since absorption occurs very quickly in moist environments.
Penetrating facial wounds require general anaesthesia, cleaning and drainage if skin is too severely detached; we suture what we can suture and should also consider healing by secondary intention if a flap is complicated.
Crushed fingers from doors are typical in children under the age of 5. We can find:
- Subungual haematoma: spontaneous evacuation is impossible (intense pulsing pain and risk of infection). When the haematoma covers more than 50% of the plate area, it can be evacuated with a needle or scalpel.
- Nail plate avulsion: it can be sutured.

- Finger nail and fingertip wounds: 50% have a fracture. Cutaneous fingertip and nail bed suturing are required, and it is necessary to reposition the nail plate. We should prescribe antibiotic therapy and remove the nail sutures on day 21.
- Distal amputation: before the age of 6, we repair the fingertip and nail fragment with a simple suture; after this age, we use a fingertip advancement flap.
With perineal wounds, there can be foreign bodies in the rectum or vagina (x-ray, ultrasound).
Straddle injuries are typical, with tearing of the vulvar area.
The possibility of sexual abuse should always be considered if the causal mechanism is not clearly explained.
We should keep in mind the psychological aspect for the child (trauma of the accident, fear of treatments and caregivers, body image and what other people think) and for the parents (guilt, and the scar that evokes the accident and alters the child's body image).
Abuse is seldom obvious. If the child shows fearful or overly calm behaviour, this should be a warning sign.

In conclusion:
- Domestic wounds in childhood vary in terms of their severity
- Classic repair techniques are used
- However, we should always bear in mind that:
o Children heal in hypertrophic mode
o There are few vascularisation problems: attempt conservative treatment
o Children are growing individuals
- They require a specific approach.
- Triangular relationship: caregiver - child - parent

Christine Boureau

We need to adopt an appropriate attitude with children. We should think about our verbal, non-verbal (body language, bodily posture, gestures, facial expressions, breathing) and para-verbal (rhythm, tone, volume, melody, flow, pauses) language. We need to choose our words, because the subconscious does not understand negation (we should avoid "don't be afraid, don't worry), so we should choose reassuring, positive words. Be careful – if our non-verbal language is inappropriate, our message will not be credible. Non-verbal language is more important than verbal language. We should be open to communication with positive behaviours (forward movement, smiling face, open hands, uncrossed legs).

We should stimulate the senses (hearing, sight, smell, movement, taste) and distract the child with conversational hypnosis (working on para-verbal language), a tablet with cartoons, soap bubbles, etc. These communication practices are essential to make dressing changes (usually associated with stress and anxiety) positive, reassuring and calm experiences, and avoid high-dose analgesics and even general anaesthesia.

Wounds in impoverished settings

This presentation discusses the different types of wounds encountered in poorer countries, but also illustrates how to improve health care access in those countries, notably by promoting training for local health care workers.

When we think of wounds in impoverished settings, we often think first of wounds related to neglected tropical diseases: leprosy, Buruli ulcer, leishmaniasis, etc. However, it's important to remember that

we also encounter more “traditional” wounds in these settings, sometimes all the more frequent due to their association with an impoverished social and professional environment that exposes people to the risk of post-traumatic wounds; burns are also frequently seen.

In addition, certain acute wounds may result from specific aspects of the natural environment, e.g. snake bites. Finally, changes in lifestyle habits associated with limited access to preventative hygienic and dietary practices may give rise in certain populations to a sharp increase in the number of diabetic and/or obese patients. Diabetic foot wounds and leg ulcers are therefore also seen in these countries.

The presentation continues with a reminder of six major fundamental principles of healing that are applicable to all wounds, including those that occur in an impoverished setting.
1) Assess and correct the underlying damage that is the source of the wound and treat the patient’s overall health
2) Keep the wound moist
3) Protect the wound from all forms of trauma
4) Promote cleanliness of the wound bed
5) Work to prevent perilesional lymphoedema
6) Prevent or correct any disability to limit any handicap caused by scarring (particularly with burns)

These principles may be easier or harder to apply depending on the patient’s resources and environment. For example, while it is universally agreed that a chronic wound must be cleaned with soap and water, access to clean water is a real problem in certain regions. In addition, access to wound dressings or compression devices is not always possible, making it difficult or even impossible to keep the wound moist or prevent oedema. In such cases, we need to turn to local resources and be able to adapt. Strips of cloth can be used, and certain dressings can be replaced by local biological materials.

Other limitations also arise when providing treatment in impoverished settings, in particular as regards the prevention of disabilities after a burn. Access to effective rehabilitation with appropriate personnel and materials is often limited, preventing early recovery and leading to tissue loss. Such tissue loss sometimes results in disability, further aggravating the difficult situation in which the patient may already find themselves.

The second part of this presentation focuses on how to transfer knowledge about wound treatment to the health care providers working in these areas. Associations are working to provide both initial training and post-training follow-up with caregivers. At a later stage, this training can also be taught and passed on by those same caregivers to other personnel working in other cities, regions, etc.

This type of training needs to be adapted to local conditions and practical realities on the ground, and must therefore be based on an initial understanding of the issues faced by patients. It is therefore important to have access to patients in order to have a clear view of local resources and move away from “pure theory” to stay focused on concrete practice.

The presentation concludes by highlighting the fact that wound treatment represents enormous costs for all countries, including poorer ones with limited resources, which therefore have great difficulty offering optimal care to patients and appropriate training to health care workers.

For these reasons, it is essential to provide health care workers with appropriate training by offering a multidisciplinary approach to treatment, including traditional medicine and traditional healers in certain situations, as these are often the first recourse for many patients.

Wounds and medical devices

This talk was presented jointly by Dr Faure and Dr Meaume. They discussed wounds caused by medical devices, which can be divided into two broad types described in the literature:
- MARSIs, or medical adhesive-related skin injuries, associated with the adhesives contained in many medical devices (bandages, sterile drapes, electrodes, etc.), which may or may not be the original cause of the wound.
- DRPUs, or device-related pressure ulcers.

Dr Faure began by talking about MARSIs. These can include wounds and irritant or allergic dermatoses.
The wounds induced by MARSIs result from different mechanisms, sometimes in combination, related to avulsion upon removal of the adhesive (pulling off one or more layers of the epidermis), tension that results in pulling and shearing of the skin, and skin tears which may vary in depth.
Certain risk factors have been identified for the development of MARSIs, including extremely young or old age (newborns, especially premature births, and elderly patients with dermatoporosis), xerosis, presence of an underlying irritant or inflammatory dermatosis (eczema), malnutrition, etc.

Preventative tools exist and are based on the following principles:
- Appropriate skin care: avoid traditional soaps, opt instead for mild cleansers, hydrate the skin, ensure photoprotection
- Attempt to remove adhesives in a non-traumatic manner by using alcohol- or silicone-based solvents (prioritise the latter in case of skin damage, as alcohol is painful in this case)
- Use skin protectants like silicone-based barrier creams that form a transparent film (Aldanex, Cavilon, etc.). These are available in various forms (wipes, sprays, etc.) and do not prevent secondary adhesion of the adhesive product.
- Choose the right wound dressing: avoid traditional adhesives and opt for silicone adhesive tapes with at-risk patients, and silicone-edged bandages that can be removed with minimal trauma; use cohesive rather than adhesive strips; use tubular bandages (Tubifast), etc.
- Learn application techniques that minimise trauma: apply to clean, dry skin, choose the orientation with the least tension from a nearby joint when the device is applied, gently caress the adhesive areas rather than rubbing hard when securing the bandages, etc.
- Learn removal techniques that minimise trauma: hold the skin around the adhesive in place when removing the bandage, pull it off tangentially, etc.

The presentation continued with Dr Meaume, who addressed the topic of DRPUs. First described in 2018, these injuries may affect the skin or mucous membranes and have been observed particularly frequently during the COVID-19 pandemic.

The speaker recalled that all patients with medical devices (MDs) of any kind are at risk of developing this type of wound: patients with cervical collars, non-invasive respirator masks, urinary probes, oximetry probes, catheters, nasal cannulas, oxygen masks, etc. The common feature in all these wounds is that they follow the form of the MD and show unusual locations: ears, nose, lips, urinary and non-sacral meatus, heels. Their occurrence is all the harder for care providers to prevent because they have few preventive tools, in contrast to pressure sores with a more traditional topography.

Here again, the risk factors for occurrence are known: severe cutaneous oedema (with a third sector often observed in ICU patients), decrease in Glasgow score, long ICU stay, etc.

These wounds can be prevented, however: for example, devices are now being developed that can hold orotracheal ventilation tubes in place without having to rest on the patient’s lips. In addition, it is advisable with at-risk patients to identify all areas of contact between the MD and the skin, and to protect these areas e.g. by applying a hydrocolloid or hydrocellular bandage. Finally, the use of these

MDs should be minimised whenever possible; when they are required, their location should be changed as often as necessary (changing sides, changing anatomical site if possible, etc.).

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