A safe first-line approach to managing skin tears within an acute care setting (part 2)

KEY WORDS

- ▶ Acute setting
- >> Compression liners
- **→** Hosiery
- >> Lower Limb Skin Tear Pathway
- >> Skin Tear Champions
- **▶** Wound healing

In their previous article (part 1), the authors outlined the evidence for their approach to the management of skin tears, which included the updated International Skin Tear Advisory Panel (ISTAP) definition (LeBlanc et al, 2018) and introduced the updated Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust's Skin Tear Pathways for the upper limbs. Here, in part 2, the authors present the recently launched Lower Leg Skin Tear Pathway, explaining the background and rationale for using hosiery liners to apply compression in clinical areas where vascular assessments, ankle brachial pressure index and knowledge of compression bandaging might not be commonplace.

¥kin tear prevention and management has moved up the national agenda following recognition that skin tears are common and have major effects on healthcare providers, carers and patients alike as they increase healthcare costs, cause pain and reduce quality of life (Chang et al, 2016; LeBlanc et al, 2018; Munro et al, 2018). Part 1 of the review of the management of skin tears described how the authors audited and enhanced the Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust Upper Body Skin Tear Pathways (Vernon et al, 2019). This article looks at the development of the recently-launched Lower Limb Skin Tear Pathway for acute care, which was instigated by one the authors at the Wounds UK Annual Conference in Harrogate in 2017, pledging to "look into ways to improve the care of patients in an acute hospital with leg ulceration, using the best evidence".

A Trust-wide audit carried out in 2018 identified 132 patients who had received treatment for a lower leg wound over a 4-week period, equating to 1,716 lower leg wounds per year. There was anecdotal evidence of a chaotic approach to lower limb wound management, which prompted a review of the existing treatment pathways and staff adherence to them. After confirming that there was good adherence to the treatment pathways and recognising that skin tears are traumatic wounds caused by mechanical forces that would benefit from compression (LeBlanc et al, 2018), focus moved to reviewing the efficacy and cost of existing lower limb treatment regimens and that associated with compression therapy (Vernon et at, 2019).

LOW LEVELS OF ANKLE BRACHIAL PRESSURE INDEX ASSESSMENTS

Early identification and assessment are important in the differential diagnosis of lower limb wounds and optimising healing through targeted, costeffective treatment (Wounds UK, 2019). Ankle brachial pressure index (ABPI) relates ankle pressure to central systolic pressure and can assist holistic assessment, determine arterial blood flow to the foot and safety of compression therapy. It is considered an essential part of the assessment but can be a challenge for generalist nurses, due to training, time pressures and available resources, and is, therefore, not widely conducted in practice. One survey found that 40% of leg ulcer patients had not received an ABPI assessment or it was unclear whether a recording had been taken (Gray et al, 2018). This is in line with the findings of Guest et al (2018) who identified low levels of Doppler ABPI assessment in lower limb wound management. Incorrect interpretation of the ABPI result or a failure to recognise arterial disease can lead to the incorrect application of compression, resulting in pressure damage and tissue necrosis (Guttormsen and Smith, 2016). Where the clinician is unable to undertake an ABPI or is unable to interpret the results, an early referral to a specialist should be considered.

COMPRESSION

Compression therapy is one of the key principles of leg ulcer management (Wounds UK, 2019). The updated International Skin Tear Advisory

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Table 1. Some examples of sub-bandage pressure readings for Viscopaste, Softban and K-Lite (VSK), Softban, K-Lite and spiral (SB and KL) and K-Press systems (Vernon, 2018)

VSK		
Nurse 1	Application 1	11
Nurse 1	Application 2	11
Nurse 1	Application 3	10
Nurse 2	Application 1	10
Nurse 2	Application 2	11
Nurse 2	Application 3	10
Nurse 3	Application 1	10
Nurse 3	Application 2	9
Nurse 3	Application 3	9
Nurse 4	Application 1	15
Nurse 4	Application 2	13
Nurse 4	Application 3	15
Nurse 5	Application 1	9
Nurse 5	Application 2	11
Nurse 5	Application 3	7
Nurse 6	Application 1	12
Nurse 6	Application 2	13
Nurse 6	Application 3	8
	Average =	11

SB and KL x 2	(spiral)	
Nurse 1	Application 1	19
Nurse 1	Application 2	20
Nurse 1	Application 3	23
Nurse 2	Application 1	14
Nurse 2	Application 2	12
Nurse 2	Application 3	14
Nurse 3	Application 1	12
Nurse 3	Application 2	16
Nurse 3	Application 3	17
Nurse 4	Application 1	18
Nurse 4	Application 2	14
Nurse 4	Application 3	22
Nurse 5	Application 1	15
Nurse 5	Application 2	17
Nurse 5	Application 3	17
Nurse 6	Application 1	13
Nurse 6	Application 2	13
Nurse 6	Application 3	15
	Average =	16

K-Press System		
Nurse 1	Application 1	17
Nurse 1	Application 2	17
Nurse 1	Application 3	16
Nurse 2	Application 1	18
Nurse 2	Application 2	17
Nurse 2	Application 3	15
Nurse 3	Application 1	18
Nurse 3	Application 2	18
Nurse 3	Application 3	18
Nurse 4	Application 1	17
Nurse 4	Application 2	13
Nurse 4	Application 3	12
Nurse 5	Application 1	23
Nurse 5	Application 2	17
	Application 3	20
Nurse 6	Application 1	10
Nurse 6	Application 2	
Nurse 6	Application 3	10
	Average =	16

Panel (ISTAP) definition of skin tears suggests compression therapy should be used as a component of lower limb treatment (LeBlanc et al, 2018). However, the findings of the Training Needs Analysis identified that only 7% of staff members in Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust were implementing compression therapy to treat lower limb wounds prior to revising the Lower Limb Skin Tears Pathway.

The authors wanted safe, effective and consistent compression to be applied in acute care, so they assessed the pressure exerted on the lower leg by the Trust's then first-line bandage regimen (Viscopaste, Softban and K-Lite) and several other options (Softban, K-Lite applied in a spiral and K-Press) when repeatedly applied by 12 nurses. Six nursing sisters from the Skin Integrity Team and six ward-based nurses applied each bandage regimen three times on a volunteer. An inconsistent range of pressures was found across the 108 sub-bandage pressure readings for the three regimens (Table 1), with 15% of readings exceeding 17 mmHg (Class I), which should not be applied without a full vascular assessment (Vernon, 2018). This variability was affected by nurse training/

experience, application technique and the type of bandage(s) used. Although it is a safe treatment option in the absence of a full holistic assessment, it was decided to replace K-Lite with a 10 mmHg hosiery liner (Altipress, Urgo Medical) in patients without symptomatic peripheral arterial disease or at risk of embolism in order to improve the consistency of the level of compression.

LOWER LEG SKIN TEAR PATHWAY

The Lower Leg Skin Tear pathway for the acute care area (*Figure 1*), was launched in June 2019. The decision to use a 10 mmHg hosiery liner (Altipress, Urgo Medical) was made because it was easy to apply and eliminated the need to perform ABPI in patients with skin tears (Vernon et al, 2019). Care is split into nine processes:

- → Stopping the bleeding
- >> Cleansing the wound
- >> Categorising the skin tear as type 1, 2 or 3 (Figure 2)
- ▶ Dressing the wound with UrgoTul[®] Absorb Border (Figure 3)
- → Applying light compression (Figure 4)
- ▶ Reporting the details in the relevant systems/care plans

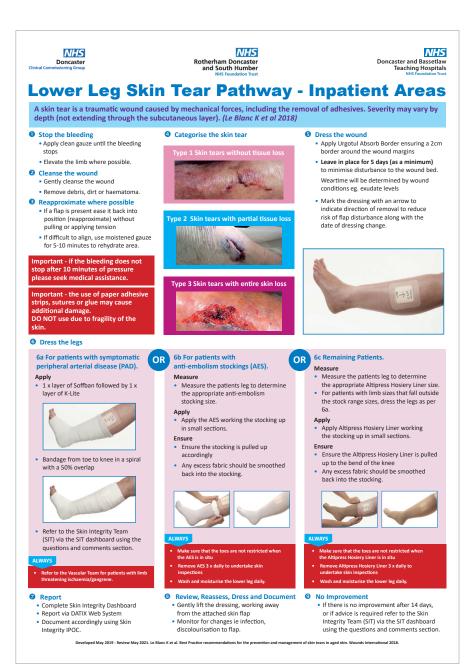


Figure 2. Skin tear prior to re-approximation

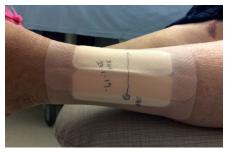


Figure 3. The dressing is marked with an arrow to indicate the direction of removal and with the date the dressing should next be changed



Figure 4. The hosiery is applied to consistently give 10 mmHg of pressure at the ankle (Altipress[®] Liner)

Figure 1. Lower Leg Skin Tear Pathway

- Reviewing, reassessing, dressing and documenting changes at each assessment/ dressing change
- Seeking advice from the Skin Integrity Team if there are complications or there is no improvement after 14 days.

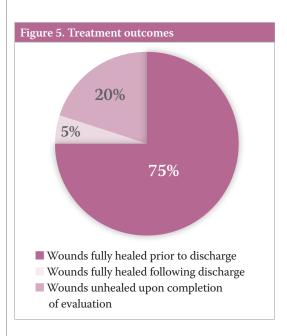
DRESSING THE WOUND AND THE LOWER LIMB

A suitable contact wound dressing should be applied to the skin tear — $UrgoTul^*$ Absorb

Border, a non-adherent lipidocolloid technology dressing, is currently the dressing choice on the Skin Tear Pathways as it meets the criteria of a suitable dressing for the treatment of skin tears according to ISTAP guidelines (Le Blanc, 2018). Next, a safe level of compression needs to applied to support the veins and improve blood flow, optimising the healing of skin tears and ulcers (Urgo, 2019). Excluding patients with PAD disease and those in need of anti-embolism stockings, the remaining patients should wear

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Table 2. Patient demographics and descriptions of skin tears					
Patient number	Age	Sex	Number of skin tears	ISTAP skin tear classification	Cause of skin tear
1	79	F	2	3	Trauma from stair lift
2	91	M	1	1	Unknown, hospital-acquired
3	78	M	2	3	Unknown
4	91	F	4	1 (1 tear) 2 (3 tears)	Fall
5	87	F	1	1 (1 tear) 3 (1 tear)	Unknown
6	84	F	1	3	Fall at home
7	88	F	2	3	Trauma from Home
8	82	М	1	3	Trauma
9	79	F	1	3	Fall, hospital-acquired
10	82	F	1	3	Trauma
11	90	F	2	2	Fall: 1 present on admission and 1 hospital-acquired
12	91	F	1	2	Unknown, hospital-acquired



their hosiery liners every day. For application, the hosiery liner should be gently pulled and folded back from the heel so the foot can be inserted snugly into the elasticated pocket, then worked up the leg in small sections from the ankle to the bend at the back of the knee. Excess fabric should be smoothed back and it should be checked that toes able to move freely. Rough nails should be filed and jewellery removed before applying or removing the hosiery liners. A bandage system can be applied, if required, underneath the hosiery liner to reduce oedema and reshape the leg.

EVALUATION CASE SERIES

During November and December 2018, the new pathway was assessed using a case series of 12 patients. Three male and nine female patients, with a mean age of 85.2 years (range 78–91 years), presented with 20 skin tears (*Table 2*). The skin tears ranged from ISTAP classification 1 to 3 and skin flaps were present in 10 of the wounds. None of the patients presented with signs of infection. The majority had no pain at presentation; nine patients gave a score of 0 on the Numeric Rating Scale (NRS-11), where 0 is no pain and 10 the worst pain imaginable. One patient scored 1, another 2 and a third 3 on the NRS-11 pain score.

Sixteen skin tears were present on admission and four were hospital-acquired, one of which occurred in a patient with a pre-existing community-acquired skin tear. Almost half of the tears were fall-related, with two occurring in hospital. The cause of almost a third of the skin tears was unknown. Patients 6 and 10 had tears located on the calf; the remaining 18 tears were on the shin.

Mean wound size was 1.9 cm long (range 0.8–5 cm) by 2.35 cm wide (range 1–10 cm) by 0.1 cm deep (range 0.0–0.3 cm) and mean wound area was 6.1 cm² (range 1–40 cm²). Subcutaneous fat was visible but not breached in the larger wounds. Granulation tissue was present in the wound beds of 18 tears. The majority of tears had no (n=9) or minimal (n=10) exudate. The surrounding skin was

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		Wound size (length x width)					
Wound number	Day 0 (at presentation)	Day 5 (initial dressing change)	Day 28 (4-week assessment)	Day wher healed			
1	2 cm x 2 cm	2 cm x 1.5 cm	2 cm x 1 cm	44			
2	1 cm x 1 cm	0.5 cm x 1 cm	0.5 cm x 1 cm	44			
3	2cm x 1cm	1 cm x 1 cm	Healed	18			
4	1 cm x 1 cm	Healed	Healed	11			
5	1 cm x 1 cm	0.4 cm x 0.3 cm	Healed	15			
6	1 cm x 1 cm	1 cm x 1 cm	Healed	12			
7	3 cm x 1.5 cm	0.5 cm x 1 cm	Healed	12			
8	5 cm x 3 cm	3 cm x 5 cm	Healed	16			
9	2cm x 2cm	1.1 cm x 1 cm	Healed	16			
10	1 cm x 2 cm	Healed	Healed	4			
11	4cm x 10cm	3 cm x 10 cm	1.2cm x 3.9cm	61			
12	1 cm x 1 cm	Healed	Healed	6			
13	1 cm x 3 cm	Healed	Healed	6			
14	1 cm x 2 cm	1 cm x 1 cm	Healed	8			
15	1.5 cm x 2 cm	1 cm x 2 cm	Healed	14			
16	5 cm x 5 cm	5 cm x 5 cm	3 cm x 1.2 cm	27			
17	1cm x 1cm	0.3 cm x 0.4 cm	Healed	17			
18	3cm x 2cm	2.7 cm x 2 cm	Unknown	4			
19	1 cm x 3 cm	Healed	Healed	8			
20	0.8 cm x 2.5 cm	0.5 cm x 2 cm	Healed	19			

healthy in eight cases, dry in four instances and fragile in six cases. Macerated skin was present in two cases.

During patients' hospital stay, all of the wounds were treated with UrgoTul® Absorb Border and an Altipress® Liner, which applies consistent 10 mmHg of pressure at the ankle. Patients' legs were measured to ensure the correct size liner was used (nine small, one medium and two extra large). Staff reported that the liners were easy to size and fit. UrgoTul® Absorb Border and Altipress® Liner were continued until the wound healed or the patient was discharged from hospital. This treatment regimen was then continued in the community to manage unhealed wounds (Figure 5). No patient reported hosiery-related discomfort at any time during the evaluation period and there were no hosieryrelated complications.

At the initial assessment on Day 5, five skin tears had completely healed. The mean wound length was 1.15cm and mean width was 1.7cm (range

0–10 cm). At this time, the mean wound area had decreased by 29%, from 6.1 cm² to 4.34 cm² (range 0–30 cm²). None of the wounds were surrounded by macerated skin and only one tear had dry skin around its circumference. None of the wounds were infected on Day 5 and the patients were pain free (all gave a rating of 0 on the NRS-11).

Fifteen wounds had healed 28 days after the start of treatment *(Table 3)*. The status of one skin tear was unknown. Excluding this skin tear, the average wound measured $2.7 \, \text{cm}^2$ (range $0.5-4.68 \, \text{cm}^2$), equating to an average 92.2% reduction in wound size (range 25%-100%).

Patients' mean hospital stay was 11.95 days (range 4–20 days). For the 16 wounds for which a healing date is known, the mean wound duration was 15.2 days (range 4–61 days). If the patient with the outlying healing time is excluded (an 84-year-old woman with a 40 cm² ISTAP type 3 skin tear), the mean healing time for the remaining 15 wounds was 12.1 days (range 4–19 days).

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Figure 6. Participants complete a four-page skin tear assessment form before and after attending the workshop

Table 4. Correct answers given before and after training			
Participant	Band	Pre-workshop	Post-workshop
		assessment	assessment
1	6	65%	97%
2	6	65%	97%
3	5	59%	95%
4	6	59%	97%
5	5	48%	95%
6	5	62%	97%
7	5	62%	97%
8	5	59%	100%
9	6	59%	92%
Average score		60%	96%

LAUNCHING THE SKIN INTEGRITY CHAMPION PROGRAMME

Once the evidence and data had been gathered that underpinned the rationale for the updated Skin Tear Pathways, the Skin Integrity Team was keen to pass on their insights and to support staff in a wider effort to improve the Trust's services and improve patients' quality of life. As education remains the cornerstone of improving clinical nursing practice, the authors launched the Skin Integrity Champion Programme earlier this year. Eleven people signed up to participate in the first workshop, which was held on 6 March 2019. Nine individuals attended, and all completed an assessment form (Figure 6), before and after the workshop so the authors were able to determine impact the training had on their knowledge of skin tears and it also identified any areas that needed clarification. The results showed that participants' knowledge improved dramatically as a result of attending the training, with average scores increasing by 36% (Table 4). The Skin Integrity Team intends to hold further regular workshops. The plan is for each clinical area to have at least one Skin Integrity Champion. This year, the team is running five sessions with 15 places per group, which, if filled, will equate to having 75 Champions across the Trust.

CONCLUSION

The new Doncaster and Bassetlaw Teaching Hosptials NHS Foundation Trust Lower Leg Skin Tear Pathway safely implements and incorporates compression in acute care with minimal additional training requirements. The timely intervention by acute care staff using an appropriate lipidocolloid dressing and the Altipress 10 mmHg hosiery liner for the treatment of lower limb skin tears (excluding patients with PAD disease and those in need of anti-embolism stockings), has proven to be easily implemented and will contribute to improved healing rates and costs associated with unhealed wounds. Improved healing rates will lead, in turn, to the improvement in quality of life and wellbeing of patients (Spanos et al, 2017) — an impact that should not be underestimated.

Once the pathway and Champion Programme have been in place for 6 months, the Skin Integrity Team will review them in order to monitor care provision across the Trust with the aim to identify any subsequent training needs.

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