The identification and diagnosis of malignant leg ulcers

Leg ulcers are predominantly managed by nurses working in primary care. One audit has suggested that 34 per cent of leg ulcer patients receive treatment without a documented diagnosis (Moffatt and Harper, 1997). Malignant leg ulceration is an uncommon condition but several recent reports suggest that its prevalence is increasing (Taylor, 1998; Yang et al, 1996). Tests such as tissue biopsy, which are required to exclude the less common causes of ulceration, are currently outside the role of the primary care nurse who has a vital part to play in referring patients to a specialist for further detailed assessment. This article raises awareness of the types of malignant leg ulcers and the clinical features associated with them.

It is uncommon for skin cancers to develop on the lower leg or for chronic ulcers to become malignant. However, malignancy should always be considered a possibility when establishing leg ulcer diagnosis (Ellison and McCollum, 1998). Diagnosing malignant leg ulcers presents a major challenge for nurses, not just in the initial assessment but throughout the management period. Boyce and Harding (1997) suggest vigilance on the part of clinicians when dealing with an apparently innocent wound which behaves abnormally.

Yang et al (1996) observed that some ulcerating skin cancers on the lower leg do not have the clinical features that are generally associated with malignancy. One-third of the malignant ulcers that they diagnosed had other identified causes of ulceration and some patients had multiple ulcers, not all of them due to the same cause. It is important to stress that early diagnosis of malignancy in ulcers can lead to reduced risk of metastasis, and simpler, less disfiguring treatment.

Studies of leg ulcer malignancy prevalence rates have shown an increase in recent years but whether this is due to a true rise in numbers or to more accurate assessment and data collection is open to question.

Yang et al (1996) collected data for seven years up to 1995 at their specialist leg ulcer clinic and identified 43 patients (4.4 per cent) with 55 malignant lesions in a cohort of 981 patients. Of these, 75 per cent had basal cell carcinoma (BCC), and 25 per cent had squamous cell carcinoma (SCC).

In 78 per cent of cases the lesions were in the gaiter area (the area of the leg from the malleolus to the mid-calf), 11 per cent were above the gaiter area and 11 per cent were on the foot. This was the first episode of ulceration for 44 per cent of the patients studied.

In a study of 185 patients at a leg ulcer clinic in Dublin, Colgan et al (1998) reported a prevalence of malignant leg ulcers of two per cent.

Leg ulcer malignancies It is advisable for nurses working with patients with leg ulcers to familiarise themselves with the types of skin tumours that may arise on the leg (Box 1). Much of the literature on ulcer assessment makes only passing reference to the possibility of malignancy. According to the Scottish Intercollegiate Guidelines Network (1998) and guidelines from the RCN (1998), if an ulcer is non-healing after 12 weeks or appears abnormal, the patient should be referred for a tissue biopsy. This raises the questions: “What is an abnormal appearance?” and “What is the expected healing rate of an ulcer?”

Clinical characteristics of malignancy It is difficult to make definitive rules for choosing which patients with leg ulcers need further investigations. It is important to observe ulcers for the clinical characteristics associated with malignancy (Box 2). The ulcer’s location can also help to identify the aetiology;
Venous ulcers usually occur in the medial malleolar area or gaiter area of the leg;
Ulcers on the foot are usually ischaemic or trophic and are more common in diabetics;
Ulcers on the calf are generally not vascular but may be vasculitic (patchy inflammation of the walls of small blood vessels), infected or malignant (White, 1999).
Colgan et al (1998) perform biopsies on patients whose ulceration appears at an unusual site, has an unusual appearance or may be vasculitic.

The appearance of the edge and base of the ulcer can indicate the stage of healing but can also highlight malignant changes. Harris et al (1993) identified clinical signs that are suggestive of malignancy:
Irregular nodular appearance of the ulcer surface;
A raised or rolled edge;
Raised granulation tissue in the ulcer base and firm surrounding skin with little lipodermatosclerosis (induration that results from fibrosis of subcutaneous fat);
Islands of epithelium that appear but do not persist.
Clinicians need to be alert to the appearance of apparently healthy granulation tissue, which on closer examination is exuberant, translucent, shining and often rolled over the margins of the ulcer (Harris et al, 1993). Voisard et al (2001) suggest that all ulcers with no vascular cause are suspicious, as are all lesions over a scar.

Monitoring the healing progress The rate of wound healing differs among patients, so it is difficult to define the interval of time after which all patients should undergo wound biopsy. Some ulcers are present for many months, so there is a need for an accurate and practical method of measuring and monitoring to ensure progress towards healing and the early detection of complications.
At Good Hope Hospital, this need is met through the use of the leg ulcer telemedicine (LUTM) system for shared hospital/community care of patients with leg ulcers (Dodds, 2002).
LUTM provides a complete problem-specific care record that includes digital images of wounds, the area of which can be measured from the image (Samad et al, 2002) and plotted to produce individual healing graphs. These graphs provide a simple method of assessing the effectiveness of treatment, early detection of problems and a prediction of the time it will take to complete the healing process (Hayes and Dodds, 2003) (Fig 4).
A sequence of images provides excellent clues to diagnosis and can be transferred electronically to other specialists should the ulcer fail to heal or if malignancy is suspected.

Diagnosis and treatment Most of the common malignancies can be detected during a routine histopathology examination. Biopsy is an invasive procedure, requiring expertise to ensure a satisfactory tissue sample and minimal pain for the patient. However, it can often be performed under local anaesthetic in an outpatient setting. There is a case for training specialist nurses to carry out full leg ulcer assessments – including biopsies – in leg ulcer clinics, potentially speeding up referral for treatment once a diagnosis has been confirmed (Walsh, 2002).
Malignant skin ulcers are usually excised, followed by skin grafting, depending on the extent of the excision. Further treatment and prognosis depend on the depth and type of tumour. Large lesions may infiltrate surrounding tissue and metastasise via the lymphatic system. Prognosis once metastasis has occurred is poor (Hughes and Van Onselen, 2001). Major amputation may be the only treatment option for large malignant ulcers (Lang, 1998; North et al, 1997).
Understanding compression therapy

The European Wound Management Association (EWMA) position document, Understanding Compression Therapy, sponsored by Smith and Nephew, was launched at the 13th EWMA conference in May 2003.

The potential impact of compression therapy on ulcer healing has been highlighted in numerous studies worldwide during the past decade. There can be few health care interventions that can claim such dramatic effects on patient outcome. Patients report improvements in pain, mobility and general quality of life as a result of their ulcer healing.

The physiological basis for compression therapy is well established. The document’s first paper describes the mechanisms behind compression and shows how effective materials impact on venous, arterial and lymphatic function, and the inflammatory processes associated with ulceration. The potential differences between individual compression systems when used in practice and the need to apply appropriate levels of compression are also discussed.

The second paper describes the mechanisms by which compression is achieved and maintained, and discusses some of the practical problems involved in measuring sub-bandage pressure.

In the third paper, the importance of treatments being effective both clinically and in terms of cost are discussed. The authors offer a method for evaluating the cost-effectiveness of a systematic treatment approach using high compression.

The need for clinical guidelines prompted the International Leg Ulcer Advisory Board to develop a recommended treatment pathway. The final paper in the document discusses the scientific basis of the pathway and the clinical issues underpinning it. It is clear that using compression is more effective than not using it, and that high compression is more effective than low.

Compression, however, is only one part of effective care provision. The pathway stresses the importance of correct assessment, particularly the identification of arterial disease, and the role of the multidisciplinary team in ensuring safe practice.

For compression therapy to reach its true potential, it is important that patient care is well delivered within effective, multidisciplinary services.

We are far from being able to establish pan-European standards for such therapy. The EWMA hopes the document will stimulate debate about the art and science of compression therapy.

Nursing responsibilities

All patients with leg ulcers require a comprehensive assessment so the most appropriate care can be planned and delivered. An assessment can also rule out the more uncommon causes of ulceration, such as malignancy (Walsh, 2002).

Nurses should be familiar with the types of leg ulcers and their normal characteristics in order to identify any abnormalities. Regularly recording measurements during the healing process will help nurses to detect any failure to heal. Not all skin malignancies will ulcerate, especially in the early stages, so non-ulcerated lesions with an atypical appearance should be referred to a specialist for assessment.

The nurse is also responsible for the psychological care of patients who may have a malignant ulcer, and for monitoring in case of any recurrent disease.

Conclusion

Despite the apparent rise in prevalence, malignant leg ulcers are still uncommon. The diagnosis, treatment and care of patients with malignant leg ulcers are neglected areas in nursing literature and research. Nurses who assess and monitor patients with leg ulcers should be aware of the clinical features of malignancy, and when and how to take appropriate action.

Digital images and measurement of ulcer area enable a patient’s healing pathway to be recorded. Deviations in progress to healing can be dealt with by a change in management or referral to other team members.

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