Diabetic foot or pressure ulcer on the foot?

Diabetes is one of the greatest health challenges facing the United Kingdom (UK) today, with 2.5 million people diagnosed with diabetes in the UK, not including up to half a million people who have the condition but are unaware of it (Diabetes UK, 2009).

Disease of the foot is a complication of diabetes caused by damage to the nerves and blood vessels that serve the limbs (Diabetes UK, 2009). Active foot disease may be either of recent onset or chronic but deteriorating.

The term active foot disease refers to anyone with diabetes who has:

- ***An ulcer, blister or break in the skin of the foot***
- ***Inflammation or swelling of any part of the foot, or any sign of infection***
- ***Unexplained pain in the foot***
- ***Fracture or dislocation in the foot with no preceding history of significant trauma***
- ***Gangrene of all or part of the foot (Diabetes UK, 2009).***

People at highest risk are those who have a previous history of ulcers, neuropathy or nerve damage and circulatory problems.

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A pressure ulcer is defined as an area of localised damage to the skin caused by prolonged or excessive soft tissue pressure along with shear or friction, or a combination of these (European Pressure Ulcer Advisory Panel [EPUAP], 2005).

The heel has been identified as the second most common site for pressure ulcer development, accounting for up to 28% of all reported ulcers (Barczak et al, 1997). Indeed, Clark et al (2004) concurred, identifying in their survey that 261 (25.8%) patients experienced their most severe ulcers in the heel area.

Published literature has identified inconsistencies, and deficits, in the knowledge base of many healthcare professionals involved in the management of diabetic foot disease and diabetic foot ulceration (Mitchell et al 2000; Mackie, 2006). One survey investigated the educational needs of nurses involved in wound care, by exploring areas of deficiency and proficiency in education and practice (Edwards et al, 2005). They highlighted that 35% of nurses had only minimal knowledge of the diabetic foot, despite the fact that 85% of the nurses questioned were involved in the management of diabetic foot ulceration (Edwards et al, 2005). This may be surprising, yet it evokes the question of whether individuals with diabetes are receiving optimum care, and if practitioners are being taught how to undertake an effective and evidence-based assessment of health needs.

The National Institute for Health and Clinical Excellence provide guidance for practitioners on best practice treatment on individuals with either a diabetic foot ulcer (NICE, 2004) or a pressure ulcer (NICE, 2005). However, how can we be satisfied that appropriate guidance is being followed by the multidisciplinary team? Diabetes UK strongly recommend that effective management of disease of the foot in diabetes, requires effective integration of the input of different healthcare professionals, who together have the skills necessary to assess and treat foot lesions. **KO**

Do practitioners differentiate between a diabetic foot ulcer and a pressure ulcer on the foot?

PC: This whole area relates to the use of strict definitions regarding the grading and classifying of lower extremity wounds. It has become more problematic due to the admirable drive to reduce the number of pressure ulcers. I think many practitioners struggle to differentiate between a pressure ulcer (PU) and a diabetic foot ulcer (DFU). A recent prevalence survey in my local hospital showed a larger than expected increase in the number of pressure ulcers. When this data was examined, it was found that nursing staff on the ward were counting all DFUs as pressure ulcers. While this may be strictly true in that most DFUs have some kind of pressure within their aetiology, most DFUs (with the obvious exception of heel wounds)

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are not 'classic' pressure ulcers. Work done by McIntosh and Ousey (2008) confirmed this confusion. When they showed a picture of a wound on a heel of a patient with diabetes to a cohort of podiatrists and a cohort of nurses, they found that 'nurses were generally of mixed opinion, with 46% claiming they would manage this wound as a pressure ulcer and 54% as a diabetic foot ulcer. There was a general consensus across the podiatrists that this wound would be managed as a diabetic foot ulcer (85%), with the minority (15%) providing pressure ulcer care'.

LC: I believe that many practitioners try to differentiate between diabetic foot ulceration and pressure ulceration, as many understand the need for correct diagnosis of aetiology to ensure that effective treatment is recommended. The difficulty comes when the ulceration may have a number of causative factors, for example, a patient with diabetes who has peripheral arterial disease with reduced mobility develops a heel ulcer. Is this due directly to pressure, ischaemia or secondary to diabetic neuropathy, or is it ok just to say the ulcer is multifactorial? What is vital for effective management is to ensure that all patients with diabetes who develop foot ulceration, regardless of the location of the ulcer or whether it is thought to be directly related to pressure, are seen and assessed by a member of staff, be that medical, nursing or podiatry, who are competent at holistic assessment of the diabetic foot. This includes assessment of neuropathy, arterial status, risk factor management and diabetes management.

Is there in fact a difference?

PC: There is a difference, but I think confusion lies with the term 'pressure' ulcer. Many ulcers, including DFUs, have a type of pressure within their aetiology which could be, among others, shear or intermittent compressive stress. What most people mean by a pressure ulcer, as defined above by EPUAP may involve shear, but is most commonly also associated with immobility and consistent pressure. The old-fashioned term of decubitus ulcer or bed sore could be seen as more appropriate. The paradox is that often within DFU management, reduction of mobility to offload the ulcer is advocated, whereas the focus of pressure ulcers is to keep people moving and mobilise where possible.

LC: There are differences between pressure ulcer *per se* and diabetic foot lesions, but pressure from an ill-fitting shoe can cause ulceration in the diabetic foot patient. Is this due to pressure or underlying neuropathy? The neuropathy precludes the patient from having normal protective pain sensations. Then again, you could argue that spinal injuries are insensate, but if a sacral pressure ulcer developed on a spinal patient who had been sitting on an inappropriate surface for a number of hours, you would be clear that this has developed due to direct pressure. The important message to get across is that the real issue is not whether the 'label' of the wound is correct, but that the patient receives the most appropriate care through assessment and correct referral within a prompt time-frame to a 'specialist' in that area. These are commonly attached to the diabetic centres where full assessment is undertaken in line with NICE guidance, and links are established to provide access to the full multidisciplinary team, including diabetologist, diabetic nurse specialists, dieticians, orthopaedic consultants, vascular consultants, etc.

Do you think treatment for foot ulcers is dependent on which healthcare professional group assesses the individual on first contact?

PC: As the work above by McIntosh and Ousey (2008) supports, it obviously does. I think the message needs to be, that with all ulcers, the aetiology is the primary factor to address. If the cause is due to a patient being immobilised, use of pressure-relieving supports and repositioning is vital. If the aetiology is due to neuropathy and resultant altered foot shape and abnormal stresses, the use of offloading devices to reduce mobility and subsequent stresses is also vital. The common denominator is the reduction of pressure. The role of addressing systemic factors and taking an holistic approach to care within the management is also crucial. Thus, addressing diabetes control, vascular supply, managing infection, etc need to be central.

LC: Yes most certainly, the focus on treatment depends greatly on which healthcare practitioner group the patient is seen by. In general, community nursing teams tend to

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focus on wound bed preparation, and community podiatry teams on aspects of pressure from footwear and offloading techniques. However, there are bodies of practitioners, be they podiatry or specialist nurses, that understand and deliver complete holistic assessment of the patient; assessing the foot for evidence of neuropathy and ischaemia, while also addressing issues relating to footwear and the need for offloading, in combination with effective wound bed preparation. However, these do tend to be found in specialist diabetic centres/clinics.

How can we ensure that practitioners understand that there is a difference between an individual with diabetes who has a pressure ulcer and an individual who has a diabetic foot ulcer?

PC: This has to be through joint education sessions and combined, or shared working. Practitioners need to understand that the wound belongs to the patient not a professional group, and the best management strategy for these patients is good multidisciplinary working in combination with good multidisciplinary education.

LC: The only solution is education to provide practitioners with the knowledge required, and to ensure that they are aware of the policies that surround diabetic foot management and where patients should be referred. Local policy can also help to ensure that clear referral pathways are in place for all staff.

Do you agree that nurses have only minimal knowledge of the diabetic foot?

PC: I think this is a broad statement. I know some nurses who have an excellent knowledge of the diabetic foot and some leading centres employ specialist nurses to manage the condition. The generalist nurse who deals with a wide variety of conditions should not be expected to have a great knowledge of the diabetic foot, but should have the minimal skills as laid down by the National Minimum Skills Framework (Diabetes UK, 2011). That is to say, the practitioner should be 'aware of the need for urgent expert assessment of all newly presenting foot ulcers/lesions, and of the steps to be taken to obtain it. Such lesions include all ulcers, the development of unexplained inflammation/swelling of the foot, the development of pain in the foot and any other problems which cause concern.'

As a minimum, the nurse should be able to recognise a problem and have unfettered access to expert opinion. This role of identification should be supported again by good multidisciplinary team-working and education.

LC: No, you cannot simply distinguish knowledge levels by professional groups. There are many highly skilled nurses who understand and add value to the management of diabetic foot management. Likewise, some podiatrists have more skills and knowledge in biomechanics and have little experience in the care of the patient with a diabetic foot ulceration. It all depends on the exposure to training and personal area of expertise. Nurses often play a vital role in the management of both acute and chronic diabetic foot ulceration and are key members of the diabetic foot multidisciplinary team.

In this present economic climate of saving money and promoting quality in the health service, how can we ensure that practitioners have the knowledge and skills to maintain and execute evidence-based care for those with lower limb ulceration?

PC: As I have described above, the key to improving quality while providing value for money is easy access to specialist assessment. Wherever there is good evidence about the beneficial nature of a particular sequence of healthcare interventions, it is necessary to put into place organisational arrangements that will maximise the chance that the interventions will be performed and the arrangements are effective. The National Minimal Skills Framework (2011) highlighted the competencies required of practitioners dealing with foot disease within diabetes. It is not though enough simply to train healthcare professionals to perform their technical and professional roles adequately. Nor can one reasonably expect that patients will turn up for an intervention at the right time and in the right place. In addition to the required competencies, there needs to be structures or pathways of care enabling professionals to apply their knowledge and skills consistently and efficiently. There also needs to be signposts or self-enabling information for patients. Integral to this process is the development of an integrated

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foot care team, allowing fluidity of unfettered movement of patients across traditional boundaries.

LC: Effective management of the diabetic foot does provide cost-effective care regardless of the current economic climate — early assessment and intervention saves legs. Amputations are highly costly procedures both financially and, more importantly, in terms of negative effect on patient's quality of life. Again, education is key to this both with regards to core knowledge regarding pathophysiology of disease and the urgency due to potential rapid deterioration and local referral pathways. The difficulty that many members of staff face is finding the time to access education, with many clinics already down to the bare bones of staffing levels. Organisations and higher education institutes need to find flexible solutions to bridge the gap in education and address the difficulties in releasing staff to attend face-to-face teaching. One solution is the use of e-learning platforms specifically designed to increase knowledge in tissue viability.

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