1st Diabetic Limb Salvage Conference: A team approach

This report is from a conference that took place on 27–29 September 2007 at the JW Marriott Hotel, Washington DC, US. The event was sponsored by Georgetown University Hospital.

Introduction

The 1st Diabetic Limb Salvage conference took place in Washington D.C from the 27th to the 29th September. The conference was organised by the diabetic footcare team at Georgetown University Hospital. It was attended by over 1000 delegates from 29 different countries, including the UK, with 50 of the American states represented. The conference was presented as a single track, highlighted with live surgical cases and a choice of workshops and symposiums. This report was written by Paul Chadwick and Jane McAdam, Principal Podiatrists, Salford PCT and Hope Hospital.

The first session, 'Defining the Problem and Gaining Perspective', covered the growing problem of the increasing incidence of diabetes in the US, due to obesity, a changing racial mix, longer life expectancy and familial history. The incidence is growing rapidly in specific racial groups. For example, 50 % of Pima Indians suffer from diabetes, possibly due to their recent adoption of a 21st century lifestyle with which their genetic profile is not able to cope. This group have a 'thrifty gene' which has the role of protection from starvation during times of deprivation, but results in increased body fat during more plentiful times.

The complications of diabetes were discussed, especially in terms of morbidity and health costs. For example, 50% of people with diabetes and peripheral arterial disease (PAD) will have a cardiovascular incident, a myocardial infarction or pass away within 5 years of diagnosis. Furthermore, this group account for 20 % of the case load, 70 % of the interventions and 90 % of health care costs.

Developments in the last decade

David Armstrong spoke about the major developments that have improved diabetic foot care over the last decade. He summarised developments in ulcer management in three ways.

1. What you take off the wound – the elimination of the edge effect, debridement.

2. What you put on the wound to encourage healing for example, topical negative pressure, matrix replacements, skin-grafting, non-removable casting techniques.

3. How to prevent recurrence. This was the most difficult and under-researched area. He demonstrated that patients with PAD had a ten-fold risk of developing a new lesion, and that ulcerations on the plantar hallux had a five-fold increase risk of re-ulceration.

Neuropathy

The second session covered neuropathy and was opened by Andrew Boulton who covered the epidemiology of sensory loss in the diabetic foot. This was followed by an interesting presentation by Ivica Ducic who outlined the surgical decompression of peripheral nerves in some cases of unilateral neuropathic patients. He emphasised the importance of patient selection, physical examination (including a positive Tinel's sign) and the skill of the surgeon, to increase the chances of success.

Delegates were then given a chance to reflect on the issue of compliance, including a discussion of motivational interviewing and the 'stage of change' theory. The major point made was that as practitioners we should talk to our patients about how they manage their condition by asking

questions, rather than telling them what they should be doing.

Vascular disease

The following morning focused on vascular interventions, in particular on the differing approaches to revascularisation: endovascular versus distal bypass. Although after a long and sometimes heated debate, there was no clear conclusion about which was the more successful approach, it was clear that vascular intervention was aggressively pursued in the presence of ulceration. While endovascular surgery was rapidly becoming the surgery of choice, most surgeons advocated bypass to address larger wounds. It was also clear that distal procedures (for example of the dorsalis pedis artery) were commonly performed. It was highlighted that while no single revascularisation procedure lasted indefinitely, bypass has proven durability whereas endovascular work still has this to prove.

Delegates were encouraged not use the term microvascular disease, but to use microvascular dysfunction and that the presence of the latter should not preclude people from reconstructive surgery. Within the vascular session speakers also advocated obtaining an Ankle Brachial Pressure Index (ABPI) for all individuals. While we had some difficulty with this principle, in terms of its reliability in people with diabetes due to vascular calcification, the emphasis from the speakers was that a reduced ABPI was the best indicator of systemic vascular disease, thus giving an early opportunity to modify risk factors. Anton Sidawy said 'The first person who diagnoses PAD determines the outcome of the limb and the person'.

A final point highlighted was the presentation of PAD being a predominantly tibial vessel disease. One study suggested 36 % of people with pre-diabetes (impaired glucose tolerance) have an increased risk of tibial PAD, with the pattern of blockage mimicking that of a person with diabetes.

Biomechanics

The Friday afternoon began with a session entitled 'Biomechanics or Biomagic? Tackling the dilemmas of foot function'. Michael Mueller presented the case for tendo achilles lengthening as part of the surgical management of forefoot ulcers. Lawrence Lavery then gave a very good summary of the research underlying offloading techniques and use of footwear in preventative care. He highlighted the importance of reducing shear and explained the development of insoles to address this issue.

A further session was devoted to Charcot foot. There was a summary of the patho-physiology of this disorder which reflected the work of William Jeffcoate. Surgical reconstruction was strongly advocated, with the techniques described including use of external fixators, internal locking plates and tendo achilles lengthening. Aggressive bracing post-surgery was advocated.

Workshops

The final day began with the opportunity to attend three workshops from a choice of nine including debridement, vascular assessment, dressings, total contact casting and living cell therapy. These were sponsored by companies and as such had a product focus. On the whole the workshops were informative, with the hands on approach allowing delegates to experience use of new or unfamiliar products.

Wound care

The final session focused on changing a non- healing wound to one that was healing. This covered some basics such as dressing choice, the role of antibiotics post-amputation and a rational approach to improving glycaemic control to aid wound healing. It also had some in-depth presentations, including the role of microcirculation, the push-pull theory and the role of biofilms in the process of delayed wound healing. The latter described how rapidly biofilms regenerate following debridement and the case for individuals removing the biofilms on dressing changes using a surgical scrub, similar to the way dentistry has developed the use of brushing teeth to remove plaque (a biofilm).

Summary

Overall the conference was a very positive experience. It gave the team a chance to reflect on their practice, benchmark their service against practice in the USA and importantly to gain new knowledge and approaches to the care of the diabetic foot. At times, the approach felt more aggressive than that sometimes taken in the UK and this may be a reflection of public versus private healthcare. However, this approach can certainly teach lessons and encourage debate. Furthermore, the link between diabetic foot disease, either well-established or incipient, and overall health was highlighted, clarifying the role of podiatrists in recognising potential morbidity and taking actions to prevent this undesirable outcome. ■