

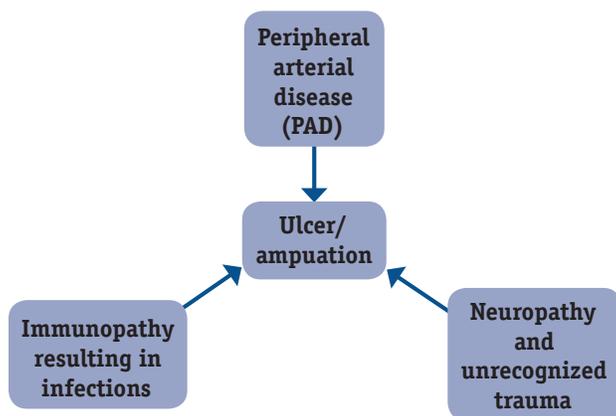
Canadian Limb Salvage: A Call to Action

This is a brief summary of a presentation given at the annual conference of the Canadian Association of Wound Care, in Niagara Falls, Ontario, on November 4, 2016. It has been produced with the financial support of Medtronic. The presenters were Tej Sahota, BSc, DPM, AACFAS; Sudhir Nagpal, MD, FRCSC; Christine Murphy, RN, BClinSc, MClInSc, PhD; Petra O'Connell, BSc, MHA. The session focused on a system-wide approach to limb salvage by reviewing the prevention and earlier detection of DFU in the community as well as exploring the benefits of a tertiary clinic model with a focus on limb salvage.

Introduction

Diabetes is the leading cause of non-traumatic lower limb amputation in Canadian adults. Persons with diabetes are over 20 times more likely to undergo non-traumatic lower limb amputations than those without diabetes.² Diabetes-related foot ulcerations are often the result of identifiable risks such as diabetic neuropathy and/or peripheral arterial disease. A non-healing foot ulcer precedes 85% of these amputations, but the good news is 85% of all amputations due to diabetes are preventable.³ According to the International Diabetes Federation, reductions in amputations can be achieved by well-organized diabetic foot care teams (limb salvage teams), good diabetes control and well-informed self-care.⁴

Figure 1: Diabetic foot pathology rendering the foot prone to ulcers and amputation



A Model for Early Risk Identification, Prevention and Intervention

The Alberta Diabetes, Obesity and Nutrition Strategic Clinical Network developed a clinical pathway for pa-

tients with diabetes who are at risk for developing a foot ulcer or who already have an ulcer. This pathway ensures that patients—regardless of where they live—receive the appropriate care from the right provider, at the right time. The pathway also helps providers identify foot problems and facilitate early intervention to prevent amputations. To view the pathway, please visit: www.albertahealthservices.ca/assets/about/scn/ahs-scn-don-info-graphic-diabetic-foot-care-clinical-pathway.pdf.

Limb salvage involves saving a lower extremity that would otherwise have been amputated.¹

Tools and resources are also being developed by the Network to support both providers and patients. A foot risk-assessment form will aid in identifying patients who have low, moderate, high or urgent risk. High-risk-foot teams have been developed to improve access to care for patients with a high-risk foot. These initiatives ultimately decrease the need for emergency care and over time will provide a 50% reduction in patients who require an amputation due to a diabetic foot ulcer.

A Model for a Limb Salvage Clinic

Efforts to prevent amputations in persons with diabetes have resulted in the development of limb salvage clinics in the U.S. and Europe. These clinical settings employ functional limb salvage techniques to provide optimal prevention and management of complications while maintaining an ulcer-free lower extremity. Limb salvage

clinics provide rapid access to service, diagnosis and treatment as well as long-term follow-up. The success experienced in these specialized clinics demonstrates the need to consider a similar approach in Canada.

Steps for Setting Up a Limb Salvage Clinic:

1. Create a business plan that provides a blueprint of the vision for the clinic and how it will run and secure funding.

2. Ensure support from facility/administration as well as buy-in by the local health authority.

3. Secure clinic space and assemble a team that may include membership from advanced podiatry services, revascularization teams, wound care teams and specialists in rehabilitation, infectious diseases, nephrology, endocrinology, prosthetics and orthotics, depending on clinical assessment.^{1,5}

4. Ensure that the clinic is able to perform the following activities:⁵

- Vascular assessment with revascularization, as necessary
- Biomechanical and podiatric assessment
- Wound assessment and staging/grading of infection and ischemia
- Site-specific bedside and intra-operative incision and debridement
- Culture-specific and patient-appropriate antibiotic therapy
- Screening to evaluate the risk of a foot for developing diabetic foot complications
- Reduction of risk of re-ulceration and infection by various protective mechanisms
- Collection of data to insure the following patient benefits:⁵
 - A reduction in time for assessment and intervention to improve vascular status
 - A reduction in time for assessment of wound healing potential
 - A reduction in time for medical and surgical intervention for infection

Conclusion

Diabetes-related foot amputations place a tremendous emotional and financial burden on patients, their families and health-care systems. It is becoming recognized that the cost, morbidity burden and demand for applying resources toward co-ordinated, affordable care of diabetic foot ulcers is comparable to that of several forms of cancer.

Early adopters of limb salvage models must provide evidence of the cost-effectiveness of limb salvage programs to demonstrate to funding agencies the usefulness of these highly specialized teams.

Limb salvage centres are currently rare in Canada despite the fact that incidence rates of PAD and diabetes are expected to rise. This combination of increased numbers of foot ulcers and lack of limb salvage centres will continue to place a major burden on the health-care system.

Limb salvage models that incorporate early vascular evaluation and treatments are essential for maximizing outcomes, saving limbs and lives and contributing to healthier, more productive individuals and communities.

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