



Lower Limb Amputation: Working Together

A review of the care received by patients who underwent major lower limb amputation due to vascular disease or diabetes



Summary

Although amputation is often perceived as a simple procedure, this study has demonstrated that the pathway of care is complex. This complexity brings with it the challenge of organising appropriate acute medical and surgical care and providing subsequent rehabilitation. Better co-ordination of these aspects of management is required to deliver good care.

In the care pathway, there were often delays. These included delay in referral to and in review by a vascular surgeon and then between the decision to operate and the operation itself. The consent form was frequently found to be inadequate, failing to detail the benefits of the procedure as well as serious complications including mortality. The operation was often performed out of hours in an emergency operating theatre and unsupervised non-consultant grade surgeons did a third of all amputations. Post operatively both medical and surgical complications occurred frequently. There is clear room to improve practice in these areas.

Co-existing medical problems were common and occurred in both the pre- and post operative periods. These frequently required non-surgical specialist care but this was provided inconsistently. More than half of the patients had diabetes and blood sugar control was often poorly managed. There were other care issues related to diabetes which could be improved by routine involvement of the specialist diabetes team.

Pain was also a common feature throughout the peri-operative period. Optimal pain management was not

consistently provided. Pain also limited the ability of the therapy teams to commence rehabilitation. Review of all patients by a specialist pain team would improve patient experience and has the potential to improve early mobilisation and shorten length of stay.

Physiotherapists were often not involved early enough in the patient pathway. Structured involvement of physiotherapists in the multidisciplinary team should include pre-operative discussion of rehabilitation potential and the level of amputation as well as early post operative rehabilitation and co-ordination of discharge plans.

In addition to improved co-ordination of specialist involvement for these patients, other apparently small details have the potential to improve patient experience and outcomes. Screening for MRSA, nutritional assessment, falls risk assessment and documentation of timely antibiotic administration all fell below an acceptable level.

The development of a co-ordinated pathway, which delivers care by all of the relevant specialists when it is needed, should ensure delivery of optimum care and improve outcomes. The National Vascular Database provides an opportunity to measure the standards set within this pathway and would enable units to assess their own performance and potentially reduce mortality to <5%, the target set by the Vascular Society of Great Britain and Ireland.

Principal recommendations

A 'best practice' clinical care pathway, supporting the aims of the Vascular Society's Quality Improvement Framework for Major Amputation Surgery, and covering all aspects of the management of patients requiring amputation should be developed. This should include protocols for transfer, the development of a dedicated multidisciplinary team (MDT) for care planning of amputees and access to other medical specialists and health professionals both pre- and post operatively to reflect the standards of the Vascular Society of Great Britain and Ireland, the British Association of Chartered Physiotherapists in Amputee Rehabilitation and the British Society of Rehabilitation Medicine. It should promote greater use of dedicated vascular lists for surgery and the use of multidisciplinary records. (*Vascular Society of Great Britain & Ireland (development), Medical Directors (implementation)*)

All patients with diabetes undergoing lower limb amputation should be reviewed both pre- and post operatively by the specialist diabetes team to optimise control of diabetes and management of co-morbidities. The pre-operative review should not delay the operation in patients requiring emergency surgery. (*Consultant Diabetologists*)

When patients are admitted to hospital as an emergency with limb-threatening ischaemia, including acute diabetic foot problems, they should be assessed by a relevant consultant within 12 hours of the decision to admit or a maximum of 14 hours from the time of arrival at the hospital, in line with current guidance. If this is not a consultant vascular surgeon then one should be asked to review the patient within 24 hours of admission. (*Medical Directors*)

For patients undergoing major limb amputation, planning for rehabilitation and subsequent discharge should commence as soon as the requirement for amputation is identified. All patients should have access to a suitably qualified amputation/discharge co-ordinator. (*Medical Directors*)

As recommended in the Quality Improvement Framework for Major Amputation Surgery (VSGBI), amputations should be done on a planned operating list during normal working hours and within 48 hours of the decision to operate. Any case waiting longer than this should be the subject of local case review to identify reasons for delay and improve subsequent organisation of care. (*Medical Directors*)

