

Below or Above-Knee Amputations

Introduction

Amputation is the surgical removal of all or part of a limb. Below- or above-knee amputations are some of the most commonly practiced major amputations in orthopaedic surgery. To patient, major amputation represents a loss of a major body part.

Indications

- Dead limb: usually results from peripheral vascular disease, but sometimes follows severe trauma or burns
- Dangerous limb: with a malignant tumour or potentially lethal infection or because of a crush injury
- Nuisance limb: because of rest pain, recurrent infection, gross deformity beyond reconstruction (either congenital or acquired) or severe loss of function

In Hong Kong, the most common causes for lower limb amputation are peripheral vascular disease and complications of diabetes mellitus, such as infection or intractable ulcerations. The level of amputation i.e. below or above the knee joint depends on the viability of the soft tissue, the level of infection and the knee joint deformity.

The Surgery

- The procedure will be performed under either general or spinal anesthesia
- The skin, muscles, nerves and blood vessels are divided around the selected level of amputation, the bone(s) is then sawed
- Stop the bleeding, the soft tissue is closed around the bone end to create a stump
- A plastic drain is inserted into the stump to drain haematoma. The drain is usually removed within 2 days after the operation
- The skin is closed with stitches or staples and they are usually removed 2 weeks after the operation if the wound heals uneventfully

Before the Surgery

- Optimization of the underlying disease: better control of the blood sugar level, improve the circulation by vascular surgery if possible, improve the nutritional status etc
- Antibiotics to control infection if necessary
- Regular wound dressing
- Counseling for rehabilitation plan
- Preparation for anesthesia

After the Surgery

- Compressive wound dressing is commonly used for controlling of swelling and minimizing. Patient with above-knee amputation is usually given a soft dressing which is sterile, compressive stump bandage.
- Patient with below-knee amputation is usually given a rigid dressing, such as a Plaster-of-Paris cast to protect the stump immediately after the operation. This “constant volume”

dressing offers some advantages in minimizing the stump pain and controlling edema and knee joint contracture.

- A prosthesis may be prescribed for ambulatory rehabilitation, depending on the patient's training potential, condition before and after the operation

Risk and Complication of the Surgery

Relate to anesthesia

- Counseled by anesthesiologist

General risks

- Heart attack, chest infection, stroke, deep vein thrombosis and pulmonary embolism, urinary tract infection etc. All can be fatal if severe enough.

Specific risks and complications

- Slow or non-healing of stump wound from bleeding haematoma, infection or wound dehiscence, requiring revision or further amputation
- Wound scar problem such as repeated breakdown, hypersensitivity or contracture.
- Stump pain and numbness, phantom limb pain
- Progression of disease and further amputation if not well controlled
- Prosthesis related complications: skin ulceration, impingement by bony prominence, contracture etc.
- Repeated surgery may be necessary to rectify the complications

Remarks

The information contained is very general, the list of complications is not exhaustive and other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.