

Incision of skin and subcutaneous tissue

Overview

A simple incision on your skin pad will allow you to practise the basic techniques of using instruments, inserting sutures and tying knots.

Before trying the practical exercises in this module we strongly recommend you visit the chapter on the scalpel in Handling of Instruments.

1 Principles

When incising skin, the scalpel can be held in one of two ways:

For making large incisions e.g. laparotomy, and fat dissection, the scalpel should be held like a table knife, with the index finger guiding the blade. This method permits good downward pressure and is safer in terms of inadvertent injury. For precise control and for small and delicate incisions, e.g. excision biopsy, hold the scalpel like a pen.

The scalpel should be held at a 45 degree angle to the skin to make best use of the blade's edge.

Incising unsupported skin is like trying to slice a jelly, so you will need to stretch the skin with your non-dominant hand before making an incision.

Wounds with vertical edges heal best, so you should ensure that your incision is at right angles to the surface of the skin.

2 Practising on your skin pad

2.1 Assembling your skin pad jig

To ensure a secure fix, make sure the work surface is smooth. Rough surfaces will not work with the sucker feet.

Make sure that the jig will be properly oriented and comfortably positioned in front of you before you secure it in place.

Moisten both sucker feet with a little water, place the jig on the work surface and push down along the centre of it.

Make sure the feet have stuck securely by trying to move the jig. Insert the skin pad. You are now ready to start practising.

To easily remove the jig, completely slide the white part off to one side, leaving the sucker feet in place. Peel the sucker feet off individually. Slide the sucker feet back into the groove under the jig.

2.2 Making an incision

Use a felt pen or ballpoint to make two dots, about 7 cm apart, at the apex of the skin pad's curvature and in the long axis of the pad.

For precise control, hold the scalpel with the pen grip. Make sure that your arm is supported and that you can hold the scalpel without strain.

Stretch the skin with your non-dominant hand before making the incision. Without deviating from your markings, and cutting away from your hand that is stretching the skin, make a single, steady linear incision with the scalpel at right angles to the surface of the skin. Remember to hold the scalpel at a 45° angle to make best use of the blade.

The underlying foam on your skin pad represents subcutaneous fat. To make a more realistic wound for suturing, make a series of smaller cuts in the underlying foam. Because your skin pad is mounted on a convex base, the incision will gape slightly, just as in real life.

2.3 Other things to try

You may wish to experiment with further techniques, using the rest of the skin pad. For instance you might draw a small 'lesion' with a felt pen and practise removing it by excising an ellipse around it. The length of the ellipse should be a minimum of 3 times the width of the lesion. A 1 to 4 width to length ratio is ideal.

Make steady linear incisions, with the scalpel at right angles to the surface of the skin. Lift the skin with your forceps and using a series of small incisions, carefully excise a portion of subcutaneous tissue shaped like the hull of a boat.

This will make a wider wound which you can then practise closing using interrupted sutures and undermining techniques to relieve any excessive tension.

3 Things to avoid

3.1 Using the tip of the blade only

Avoid using the tip of the scalpel blade only. This leads to superficial scratching instead of an incision through the full thickness of the skin.

Holding the scalpel at a 45 degree angle to the skin will ensure that the correct amount of blade is in contact with the skin.

3.2 Sawing motion

Avoid a sawing motion consisting of repetitive stabbing cuts - these lead to a feathered edge and poor healing. Make a single, decisive incision.

3.3 Slanting sides

Inwardly slanting sides cause poor apposition of the edges and difficulty in wound closure.

Outwardly slanting sides cause dead space within the wound. Dead space permits the accumulation of blood or serum which can act as a focus for infection and result in delayed healing.

3.4 Handling the scalpel blade with fingers

Never risk cutting yourself by using your fingers to mount or remove a scalpel blade. Always use artery forceps to grasp the blade.

3.5 Passing unsafely

When passing a scalpel, never pass it blade first, but handle first with the blade facing downwards.

The safest way is to always put the scalpel in a kidney dish to pass it. Always replace the scalpel in the kidney dish when you have finished making your incision.