Information for patients and families

Risks associated with prone positioning during general anaesthetic.

Developed by Magdalena Smith and Sally Wilson for the Neuroanaesthesia and Neurocritical Care Society.

This document is intended as an organisational framework to prepare and inform patients and their relatives. It is not intended that the content is to be regarded as a substitute for informed discussion and consent between the patient and their clinical team.

Summary

During surgery under general anaesthetic great care is taken to position you safely. For some procedures you have to lie face down or in the prone position. Many people do not realise the importance of safe positioning during surgery. In this leaflet we will explain the process of prone positioning during general anaesthesia, the complications that can occur and what precautions we take to protect you from injury.

Introduction

Achieving the best position can be complex and there are some risks specifically involved with being prone. The prone position is necessary to allow surgical access for many types of operations. This includes many neurosurgical procedures on the brain and spine, but also some other operations on the back of the head, back, buttocks and legs.

Under a general anaesthetic you are not aware of anything and you cannot change your position or move your body. Although you will be positioned extremely carefully there is always a chance you may not be lying in a position you would find comfortable if you were awake.

You will be moved extremely carefully, but there is always a chance that you may find that you feel uncomfortable after your surgery. For these reasons it is very important that we take care choosing the best position for you and the surgery that you require. We also ensure that we have the most appropriate operating table, supports and protective padding to keep you safe during your operation.

Surgeons, anaesthetists, nurses and theatre support staff work together as a team. They are very experienced in safe and careful positioning of patients for their surgery. Although the theatre teams take great care, some complications may occur, even with the most careful positioning. The anaesthetist looking after you will be skilled in ventilating patients in this position so that your breathing is controlled throughout the procedure.

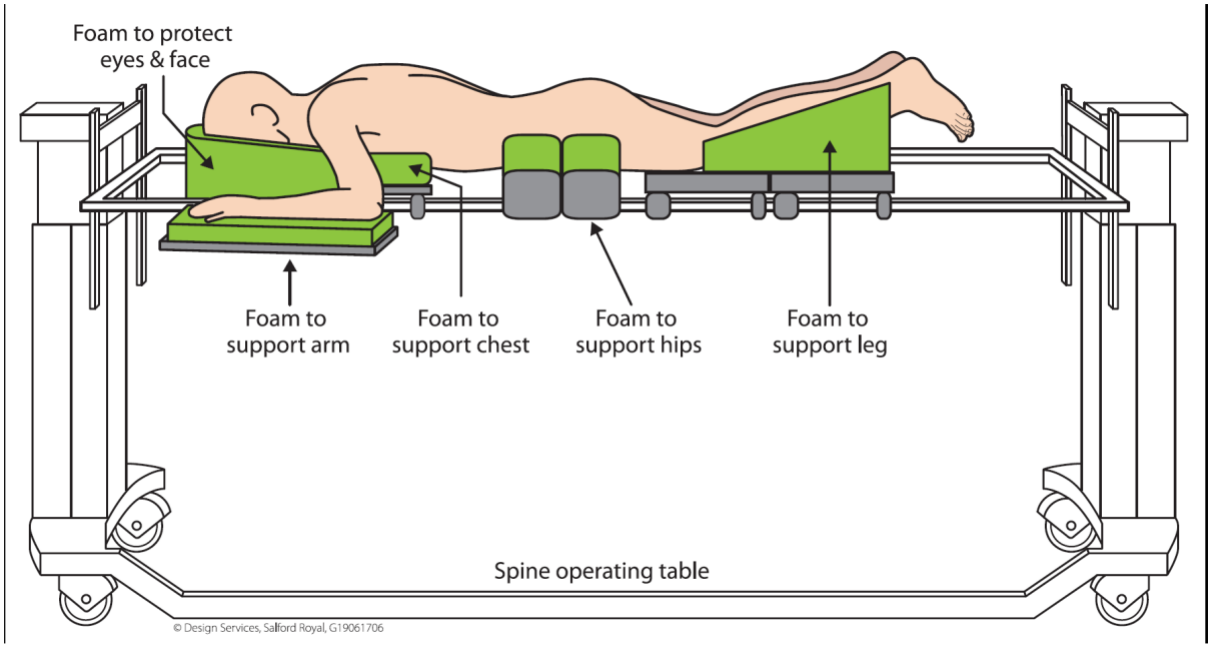

Diagram used with kind permission of Dr Ming Wilson, Consultant Anaesthetist, Salford Royal NHS Foundation Trust

Stiffness and joint pain

After being immobile in one position for a long time you may experience some stiffness and discomfort in your joints. Neck and shoulders are usually the most affected, but you may have these symptoms in many other joints. These include the elbows, hips and knees, particularly if you have had problems with any of these in the past. Please let us know before your anaesthetic if you have any specific painful areas that we need to pay special attention to while you are asleep. It is also important to know if you have had any major joint surgery or limitations to your movement, particularly your shoulders.

These symptoms should get better quickly after surgery, but sometimes it might take longer and you might require physiotherapy to help you get better.

Skin damage

When you wake up after your surgery you might notice some red marks in places where your body was supported. These include the forehead, tip of the nose, cheeks, chin, chest, breasts, hips and knees. Occasionally these might develop into pressure sores or bruising and very occasionally you may notice some minor skin abrasions. The redness should disappear within 24 hours, but pressure sores and bruising will take longer to go away.

Large breasts are more vulnerable to greater direct pressure. In addition, patients with breast implants are at risk of damage to the implant itself or the body tissues surrounding the area. Please let the anaesthetic or surgical team know if you do have breast implants.

Nerve damage

Most nerves are well protected, but some run just under the skin without much covering tissue. Prolonged pressure on or around nerves supplying your arms and legs can cause some nerve damage. Both the nerves that control sensation and movement can be damaged, which means that you may feel numbness, tingling, pain or have weakness in your arms or legs. You may also get unusually warm or cold sensations in the affected area. Symptoms can start immediately after an injury to a nerve or can sometimes appear weeks after your operation. Usually these symptoms settle down, but may feel similar to a knock on the elbow or 'funny bone'.

The area affected varies according to which nerves have been damaged. There could be anything between a very small patch of numbness and most of a limb being affected. The highest incidence of injuries has been reported in nerves around the armpit and elbow, affecting the arm, forearm and hand. Please let your anaesthetist or surgeon know if you experience any of these symptoms after waking up, so that we can address them as soon as possible.

Eyes and face

One of the most common side effects after prone positioning is face swelling, in particular around the eyes and mouth. This usually disappears within few hours.

We take special care to protect your eyes and keep them free from any pressure during surgery. However, there have been very rare cases of visual loss or even blindness after surgery. As it is a very rare complication, the incidence of permanent visual loss is very hard to determine exactly. Some studies quote it between 1 in 60,000 and 1 in 125,000 cases for all types of surgery. The people at higher risk include those who are overweight, who smoke and those with other major health problems, particularly high blood pressure, diabetes, pre-existing eye conditions, previous heart attack or stroke. The risk of loss of vision increases with long operations and in particular those operations associated with a lot of blood loss. The risk of postoperative loss of vision following prone spinal surgery varies, but the most frequently quoted risk is 1 in 5000 patients. However, this will vary depending on the presence or absence of the risk factors discussed above and the duration of the surgery. For most patients having a straightforward operation of less than a few hours duration the risk will be minimal. Your surgical team will be able to discuss your individual risk with you before your operation.

Other complications

Positioning patients prone can also increase the risk of complications within the heart and lungs, particularly in patients with pre-existing severe breathing or heart problems. We do not always know how the body will respond to being positioned prone in every individual case and in some cases it may not be possible to continue with surgery. In this case you would be woken up and your operation cancelled or postponed. In very rare cases, and usually where there are other major risk factors, severe harm can occur from a heart attack or stroke and, very rarely, death can occur. Sometimes patients with reduced liver function may also be affected by lying in the prone position especially for long periods of time and their liver function may deteriorate after the operation.

What is done to prevent any complications during surgery?

You will be carefully assessed before your operation by the anaesthetic and surgical teams to assess and limit these risks.

Your anaesthetist, surgeon and theatre staff will take care to try and prevent any harm to you during your operation. The whole theatre team is specially trained to safely position patients and share the responsibility of minimising the risks by:

- careful padding of vulnerable areas
- positioning you in a way which avoids stretching nerves as much as possible
- avoiding any pressure on the eyes
- making sure that your breathing and blood pressure are always satisfactory

Who to contact if you experience any problems after your operation?

In the first instance speak to your surgical team or your anaesthetist if you notice any problems soon after your operation. They might need to refer you for other investigations or to another specialist, depending on the problem. If you have already been discharged home please contact your GP first.

Where can I find more information?

Not all operations present the same risk, and some patients are more vulnerable than others. If you would like to discuss any of the risks you should speak to your anaesthetist and surgeon before your surgery. They will be able to advise you which risks relate to you and the surgery you are having.

You can also learn more about risk related to general anaesthesia from a series of leaflets on the Royal College of Anaesthetists website, in particular:

Section 5: Damage to the eye during general anaesthesia

https://www.rcoa.ac.uk/system/files/05-DamageEye2017.pdf

Section 11: Nerve damage associated with an operation under general anaesthetic

https://www.rcoa.ac.uk/system/files/11-NerveDamageGA2017.pdf

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References

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