

Patient information for Thoracoscopic Sympathectomy

Full name of procedure:

Bilateral thoracoscopic sympathectomy

Short name:

VATS Sympathectomy, also known as endoscopic thoracic sympathectomy (ETS)

Reasons for procedure:

The commoner reasons for performing the procedure are:

- reduce sweating of the palms of the hands (palmar hyperhidrosis)
- reduce sweating of the armpits (axillary hyperhidrosis)
- facial flushing
- pain or ulceration due to poor circulation in Raynaud's disease

Palmar hyperhidrosis - the operation was originally designed for excessive sweating on the palms of the hands and it usually works well for patients with this problem. It also reduces **axillary hyperhidrosis** when Dri-Clor and other agents have ceased to be useful. Unlike BoTox which has to be injected under the skin every 6 weeks or so, sympathectomy produces a prolonged solution. Because of differences in distribution of sympathetic nerves results for axillary sweating are less predictable than palmar. If significant boil formation, sepsis or cicatrisation are present in the axillae, excision by an experienced plastic surgeon may be required. Patients who had the procedure for sweating have told us that it has also reduced embarrassing **facial flushing**. While many patients are very satisfied with the reduced blushing, the results cannot be guaranteed.

Description of procedure:

You will be given a general anaesthetic and will be completely asleep for the whole of the procedure.

Two half inch (1cm) cuts are made on the side of the chest under the arm (though one may be on the front above the breast). A camera is placed through one of these and the lung is collapsed using carbon dioxide gas). An electric probe is passed through the other hole.

The electric probe is applied to the sympathetic nerve chain which is positioned on the ribs behind the lung. The sympathetic nerves from the second, third and fourth ribs are destroyed. These nerves supply the sweat glands on the skin but do not affect your ability to feel your skin or move your hands. Any extra nerves (accessory nerve of Kuntz) are also destroyed.

The lung is then re-expanded and the same procedure is then performed on the opposite side.

The procedure takes approximately 30 minutes with an extra 30 minutes for the anaesthetic.

Most patients are admitted the evening before surgery and allowed home the day after surgery.

You are advised not to drive home. It is not uncommon to feel stiff and uncomfortable with some nausea in the 48 hours after the procedure. You should be able return to work within a week.

Removal of stitches: The sutures or skin clips can be removed by your clinic nurse five days after the procedure.

Benefits of the procedure:

- Reduction of sweating of the hands and under the arms
- Reduced facial flushing

Risks of the procedure:

It is important to point out that this is a major thoracic procedure with all its potential anaesthetic and surgical complications. Patients need to be aware of pneumothorax, chest drain insertion, bleeding and thoracotomy which are common for all thoracoscopic procedures. Specific to sympathectomy, Horner's syndrome, compensatory sweating (especially back and torso) and failure or mixed result of the procedure, are recognise common complications.

Anaesthetic complications: As with all procedures performed under general anaesthesia reactions, to the anaesthetic can occur. While these are uncommon, the more severe reactions can affect the heart (heart attack or abnormal heart beat), the lungs (asthmatic attack or pneumonia) or the brain (stroke or fit).

Complications of the operation: Any procedure performed by a surgeon has risks of injury, complication or death. Complications specific to thoracoscopic sympathectomy are:

1. **Bleeding** - a certain amount of bleeding occurs with all surgical procedure and there will be some swelling and bruising around the incisions for a few days after. Bleeding is usually not a problem unless you are on drugs which thin the blood (**see below**), have a hereditary bleeding condition or have kidney or liver failure. Blood transfusion is rarely needed.
2. **Thoracotomy for major bleeding** – more significant bleeding can occur from adhesions to the lung or the blood vessels which run between the ribs (intercostals artery and vein). Controlling this bleeding and repairing injured vessels would require making a much larger incision, called a thoracotomy, on the chest. While we take careful precautions to avoid this complication and it is very uncommon, it does occur and you need to understand that you could require intensive care. It is possible to die from such major bleeding.
3. **Infection** - any surgical incision can become infected with inflammation, swelling and discharge. These settle quickly but you may need dressings and antibiotics for 1-2 weeks.
4. **Air leak and pneumothorax**- it is possible to develop a leak of air from the lung particularly if there are adhesions between the lung and the ribs. This allows the lung to collapse (called a pneumothorax). This is treated with the placement of a chest drain, and usually settles in a number of days.
5. **Postoperative pain:** There will be some pain around the incision and some tightness in the chest. Local anaesthetic will be injected around the incisions to tide you through the first 12 - 24 hours. You will also be given a patient controlled analgesia system (PCAS) which allows you to give yourself a shot of painkiller when you need it. You will be given mild painkilling tablets to take home.
6. **Horner's syndrome:** the next set of nerves up from the hands supplies the eyelid and the pupil of the eye. If these nerves are involved in the operation you can develop a drooping eyelid and a small pupil. This effect usually lasts only a few weeks but may be permanent. Because this risk is increased we are not prepared to do a radical sympathectomy for facial flushing.
7. **Compensatory hyperhidrosis:** the body needs to sweat under certain conditions. By reducing the sweating to your face, hands and arms you will have increased sweating elsewhere on the

body. This is known as compensatory sweating. For most people it is a minor inconvenience but in some people it can be a major handicap. *This is the most common reason for dissatisfaction with the operation and patients who already sweat excessively should carefully take this into account before deciding to go ahead with surgery.*

8. **Bradycardia:** The next set of nerves below the arms go to the heart. If these are involved in the surgery the heart will beat slower. It will be slow to respond if you need to run for a bus or perform other exertion. Because this risk is increased we are not prepared to do a radical sympathectomy for axillary hyperhidrosis.
9. **Failure of the operation:** As with all operations there is a failure rate. The distribution of sympathetic nerves varies from one person to another. Anaesthetic difficulties, adhesions or the presence of blood vessels over the nerves may prevent the surgeon doing as extensive an operation as desired.
10. **Recurrence of symptoms:** The body attempts to compensate for the loss of nerves and there is usually some return of sweating with time.
11. **Dryness of the hands:** As sweating on your hands will be completely reduced your hands will dry out easily. This is worse if your job requires you to use solvents, cement or to wash your hands frequently. You are advised to use moisturising cream frequently.

Results of the operation

- Palmar hyperhidrosis – the results are usually very good. The hands will be warm and dry at the end of the procedure.
- Axillary hyperhidrosis – the results can be more ‘hit or miss’ due to variation in the nerves between people and the closeness of the nerves supplying the heart.
- Facial blushing - the results again can be ‘hit or miss’ due to variation in the nerves between people and the closeness of the nerves supplying the eyes (Stellate ganglion).

Contact numbers:

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Warning:

If you are taking any drug which thins the blood, this may increase the risk of bleeding. An alternative may need to be prescribed up to two weeks before the procedure and you may need to be admitted earlier than planned. Please advise your surgeon (or contact his secretary) if you are taking any of the following drugs:

- Warfarin
- Aspirin
- Plavix (Clopidogrel)
- Drugs for treating arthritis such as :
 - Voltarol (diclofenac),
 - Indocid (indomethacin),
 - Brufen (ibuprofen),
 - Ketoralac,
 - Mobic (meloxicam),
 - Celebrex (celecoxib),
 - Vioxx (rofecoxib),
 - Advil,
 - Neurofen,
 - Feldene.

Keywords to search the internet

Sympathectomy
Thoracoscopy
Thoracoscopic sympathectomy
Hyperhidrosis
Hyperhidrosis axillaris
Hyperhidrosis palmaris
Compensatory hyperhidrosis
Bradycardia
Horner's syndrome

Websites of interest:

<http://www.hyperhidrosisuk.org/>
<http://www.sympathectomy.org/>
<http://www.sweat.com/search/?s=Sweat>
<http://www.sympathectomy.info/>
<http://www.umm.edu/thoracic/thoracic5a.html>
<http://www.hyperhidrosis.org/sympathectomy.htm>

The following warn of the side-effects:

<http://www.truthaboutets.com/sideeffects.html>
<http://www.sympathectomy.8m.net/>