

Pearls in Dermatology

Subdermal liposuction: a safe therapy for axillary hyperhidrosis

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Axillary hyperhidrosis is a common condition among Asian population. Topical medicaments are frequently used but is only useful in mild cases. A simple, safe and effective surgical procedure is needed for patients with severe symptoms. Subdermal liposuction is one such choice. It can be performed under local anaesthesia with or without sedation as a day surgery. This procedure is modified from the classical liposuction to remove subdermal sweat glands with aid of a small caliber single-holed cannula. The technique is not difficult. Its low complication rate and the small scar make it superior to other surgical options.

Keywords: Hyperhidrosis, liposuction

Introduction

Profuse axillary sweating causes not only physical discomfort but also psychosocial embarrassment. While thyrotoxicosis, diabetes mellitus and drugs may cause axillary hyperhidrosis, the condition is very often idiopathic. Both medical professions and public are looking for a safe and simple form of therapy. Topical aluminium chloride hexahydrate is commonly used for combating the excessive sweating. Tap water iontophoresis is sometimes used for those who failed to respond to topical anhidrotics. However, a local study suggested that

only about one third of the patients gave a very good response.¹ Botulinum toxin is recently employed to control the focal hyperhidrosis. This expensive drug also requires repeated painful injections. Patients with recalcitrant axillary hyperhidrosis would look for "one-go" surgical options. Conventional surgical treatments for axillary or palmar hyperhidrosis such as cervical sympathectomy and en bloc excision of axillary skin are very effective. However, the former carries real surgical risk of damaging vital structures leading to Horner's syndrome, thoracic duct or phrenic nerve injury, pneumothorax and haemothorax, compensatory hyperhidrosis and gustatory hyperhidrosis. En bloc excision requires skin grafting and inevitable scar formation. Recently, subdermal liposuction with or without ultrasound assistance earns the best reputation in term of long-lasting result, minimal complication including scar formation.^{2,3} Further, the short hospital stay and simple post-operative care account for a very reasonable option for treating axillary hyperhidrosis.⁴⁻⁶

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Method

Pre-operative assessment

History, physical examination and laboratory investigation still form the groundwork of axillary hyperhidrosis management. Secondary causes should be excluded. I prefer to delay the surgery after adolescent period as most of the time it is physiological. The efficacy, methodology and possible complications should be fully explained to the patient. This procedure is contraindicated in patients with bleeding tendency or taking anticoagulant. It is important to examine the axillae for local infection. The hair distribution should be recorded since hair loss is one of the known complications.

Operation technique

The liposuction can be performed under general anaesthesia or tumescent technique with or without sedation. The latter is preferred. The patient lies supine on the operation table. There is no need to shave the axillary hair. The border of the hair bearing skin is marked. A rhomboid-shaped area is created. Starch-iodine test can be used for delineating the hyperhidrotic regions. Two incisions are marked one cm away from the distal and anterior angles (Figure 1). The incision sites are locally infiltrated with lignocaine. Two to three

hundred millilitres of tumescent anaesthetic solution are then infiltrated to the subcutaneous tissue.

Two 5 mm incisions are made. A 4 mm liposuction cannula (*LEAD*) is inserted into the subcutaneous tissue just below the dermis. The suction orifice of the cannula is facing the dermis. The opposite hand helps the procedure by pressing the skin against the cannula. The suction is performed in criss-cross pattern through the two incisions (Figures 2 & 3). The suction can be created either by syringe or by suction pump (negative pressure

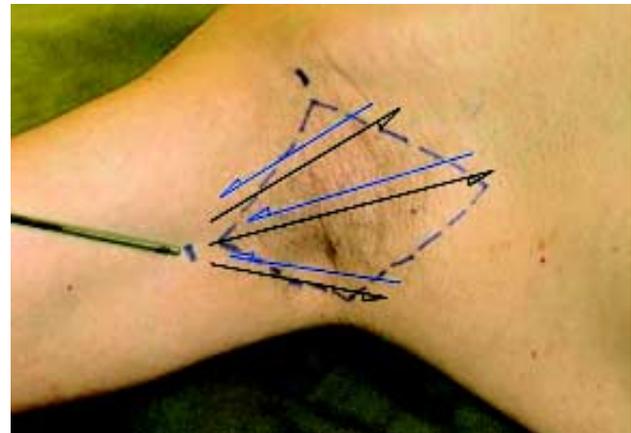


Figure 2. The 4 mm cannula is inserted through the distal incision with orifice facing the subdermal surface.

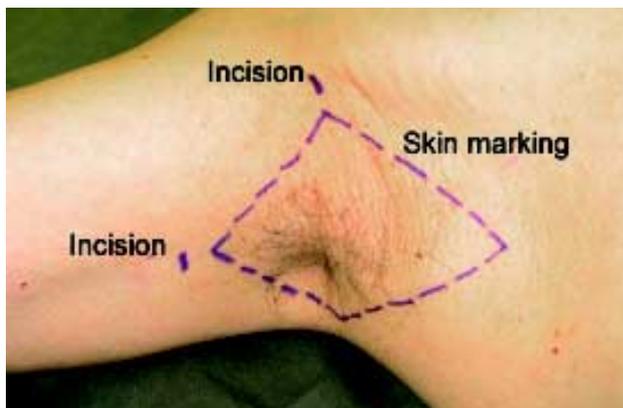


Figure 1. The liposuction area and incision sites are marked.

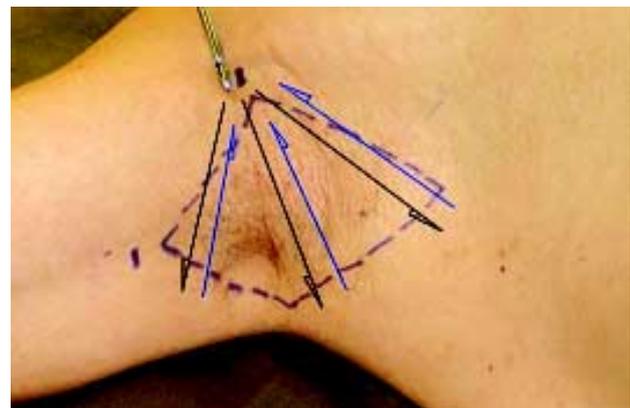


Figure 3. The procedure is repeated through the anterior incision in criss-cross pattern.

of 760 mmHg). The actual amount of tissue sucked out is small. The operation time is about 20 minutes for each side of axillae. At the end of the operation the skin colour will turn erythematous. The skin will feel thin and can be easily pinched out from the underlying tissue. No drain is needed. The wounds are closed with single layer of nylon sutures and covered with adhesive tapes. Bulky gauze dressing is applied.

Tips and tricks

Since the area for liposuction is relatively small, a 4 mm cannula with single orifice is enough for most of the patients. Also, a single-hole cannula is easy to handle. The technique of liposuction is different from the classical method. The cannula is inserted in the superficial tissue plane. The orifice is facing towards the subdermis surface. Also, the absolute amount of tissue sucked out must not be large, prolonged procedure duration usually causes more complications than actual effect.

Post-operative management

The patient is kept in bed for a few hours. On

discharge he is advised against raising his arms above the shoulder to keep the dressings in place. The bulky dressings can be removed on post-operative day 2 unless there is swelling or severe pain. Extensive bruises are usually anticipated after the removal of gauzes. While allowing the patient to take shower, the adhesive tapes should be kept intact. He is then seen again on post-operative day 7 for wound inspection and stitch removal. The bruises on the operative site gradually subside over a few weeks. A follow-up is arranged for assessing treatment result one month later.

Adverse effects and complications

Skin necrosis, haematoma and infection are immediate and early complications but infrequently occur. Ecchymosis is common but self limiting and resolves within a few weeks. Axillary hair loss may be seen weeks after operation. It may be transient or permanent. Subcutaneous bands (0.3%) or indurations (Figure 4) will usually subside with manual massage.³



Figure 4. Subcutaneous bands are found in the right axilla. The scars are barely seen.

Comments

Axillary hyperhidrosis is a common complaint among Asians. Simple, safe and effective therapies are required for treating this condition. Although subdermal liposuction offers a choice to us, we do not have a good objective measurement on its effectiveness. Also there is no absolute correlation between volume of sweat and the symptom. Patients may mix up between hyperhidrosis and bromhidrosis which also cause social embarrassment. Pre-operative consultation is important to clarify the symptoms and the expectation of the patients. Recurrence of symptoms may occur in some patients and could be due to insufficient reduction. With the experience on hand, it is uncertain whether subdermal liposuction should be repeated for these patients or to seek other surgical treatment options such as en bloc excision.

While subdermal liposuction does not aim to completely remove the axillary sweat glands,

the reduction of the volume of sweat produced is often dramatic in most cases. Moreover, the therapy is easy to perform and is even possible to repeat in those who failed to improve after the first treatment. In terms of the low complication rate and the good aesthetic scar, subdermal liposuction does offer a sensible choice of treatment.

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