Thoracoscopic sympathectomy for palmar hyperhidrosis and Raynaud’s phenomenon of the upper limb and excessive facial blushing: a five year experience

Y S Rajesh, C P Pratap, A B Woodyer

SUBJECTS AND METHODS
A retrospective analysis of all thoracoscopic sympathectomies performed in a district general hospital over a five year period was undertaken in order to determine the effectiveness of this procedure. A postal questionnaire was sent to all patients to assess the benefit from the operation; postoperative pain and time off work were collated. Immediate failure was noted in three patients, of whom two later underwent successful reappraisal. Recurrence was noted in three patients (8%). Though immediate complications were minimal, the major long term postoperative morbidity was compensatory hyperhidrosis on the back, chest, and thigh (77%) along with gustatory sweating over the face (22%). Thoracoscopic sympathectomy is a safe, effective, and minimally invasive surgical treatment for hyperhidrosis, Raynaud’s phenomenon of the upper limb, and excessive facial blushing; however, the chance of long term compensatory hyperhidrosis is high.

RESULTS
A total of 40 thoracic sympathectomies were conducted over the five year period in 26 patients. There were 12 bilateral procedures, 14 unilateral procedures, and two redo procedures. There were nine male and 17 female patients. The mean age of the patients was 30.3 years (range 15–41 years). The indication for operation is shown in Table 1. Immediate failure of operation was noted in three patients (7%) and two of them later underwent successful reappraisal within three months. The mean length of stay in the hospital was 2.01 days (range 1–6 days). The mean duration of the operation was 43.78 minutes (range 20–72 minutes). Postoperatively one quarter of patients had residual pneumothorax, which did not require drainage (table 2). Haemothorax was minimal and did not need draining. One patient developed pleural effusion, which needed readmission and drainage. In one patient with Raynaud’s phenomenon, the ulcer on the fingertips healed after the sympathectomy. One of the patients, who underwent surgery for excessive facial blushing, complained of lack of facial sweating on the operated side.
Table 1  Indications for surgery

<table>
<thead>
<tr>
<th>Indication for surgery</th>
<th>No of patients</th>
<th>No of procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperhidrosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palmar</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Axillary/palmar</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Reoperation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Raynaud’s phenomenon</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Facial blushing</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 2  Postoperative complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>No of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumothorax requiring UWS drain</td>
<td>0</td>
</tr>
<tr>
<td>Pneumothorax not requiring UWS drain</td>
<td>10 (25)</td>
</tr>
<tr>
<td>Haemothorax</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Horner’s syndrome</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Surgical emphysema</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Pleural effusion</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Chest infection</td>
<td>2 (5)</td>
</tr>
</tbody>
</table>

Table 3  Sites affected by postoperative compensatory hyperhidrosis

<table>
<thead>
<tr>
<th>Site affected</th>
<th>No of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest</td>
<td>6 (26)</td>
</tr>
<tr>
<td>Back</td>
<td>10 (43)</td>
</tr>
<tr>
<td>Thigh/leg</td>
<td>6 (26)</td>
</tr>
<tr>
<td>Face/gustatory sweating</td>
<td>5 (22)</td>
</tr>
<tr>
<td>Opposite palm</td>
<td>5 (22)</td>
</tr>
</tbody>
</table>

Twenty three of the 26 patients (88%) responded to the postal questionnaire. About half (52%) of the patients suffered severe postoperative pain for three or more days. The majority of patients complained of pain in the postoperative period lasting for more than three days. Gossot et al. reported that most of their patients complained of pain in the postoperative period ranging from two to four weeks, many of whom needed morphine.16 Kopelman et al. reported neuralgic pains lasting up to few months with a mean (SD) duration of 2.8 (1.9) months.

Though endoscopic thoracic sympathectomy is quick and effective, it is associated at times with very troublesome sequelae. Paradoxically, the operation, which was performed for relief of palmar hyperhidrosis, is followed by a remarkable compensatory hyperhidrosis. The reported incidence in the literature varies from 37% to 84%.11–12 18–21 The majority of our patients complained of pain in the postoperative period lasting for more than three days. Gossot et al. reported that most of their patients complained of pain in the postoperative period ranging from two to four weeks, many of whom needed morphine.16 Kopelman et al. reported neuralgic pains lasting up to few months with a mean (SD) duration of 2.8 (1.9) months.

The result of this postal audit has provided useful data about the possible postoperative problems. This has enabled us to improve the information given to the patients preoperatively. As the operation is intended to improve quality of life, the patients should be aware of possible postoperative sequelae. This can be used as a baseline for a detailed consent form. It can also be used as a screening test to determine which patients are sufficiently motivated to undergo surgery, as well as to avoid possible medicolegal problems in future.

The vast majority of the patients who undergo sympathectomy for hyperhidrosis are pleased with the results. Careful patient selection and preoperative counselling are important to ensure a satisfactory outcome. In patients with Raynaud’s phenomenon and excessive facial blushing, thoracic sympathectomy is equally beneficial.

DISCUSSION

The aetiology of primary hyperhidrosis still remains elusive. It is more common in young women, some of whom suffer severe and obvious dripping of the hands. This has an impact on various aspects of life including education, occupation, social interaction, and psychological problems.

Non-operative management, including topical agents, has proved disappointing. Thoracic sympathectomy is now an established treatment for palmar hyperhidrosis. With the introduction of high resolution videendoscopy and closed rod-lens instrumentation, endoscopic thoracic sympathectomy has become the treatment of choice compared with the open procedure.11–13 The endoscopic technique is associated with less postoperative morbidity and better cosmetic scarring when compared with open procedure.11

Upper dorsal sympathectomy reduces the peripheral vascularity, hence increasing the blood flow in the peripheral vasculature. The thoracoscopic approach enables clear delineation of the sympathetic chain and the ganglia including the collateral branches (Kuntz’s nerves). Better visualisation of the stellate ganglion and its preservation may avoid the sequel of Horner’s syndrome. In our series we had a 5% incidence of postoperative Horner’s syndrome. This probably reflects our technique of applying coagulatory diathermy to the second ganglion down. Furthermore, T2 sympathectomy resulted in reduction of facial sudomotor activity. The innervation of head and neck region is T1 to T3, while that of the upper extremities is from T2 to T4. Drott et al. recommended ablation of T2 and T3 sympathetic ganglia in the treatment of palmar hyperhidrosis, T4 ablation in axillary hyperhidrosis, and ablation of lower part of T1 to treat facial involvement.17

With mean length of operation comparing favourably with other reported series,11–14 the mean length of stay in hospital in our series was similar to the average stay reported in the literature.10–20 Immediate postoperative complications included pneumothorax, haemothorax, and Horner’s syndrome. These compare favourably with other reported series.11–12 18–21 The majority of our patients complained of pain in the postoperative period lasting for more than three days. Gossot et al. reported that most of their patients complained of pain in the postoperative period ranging from two to four weeks, many of whom needed morphine.16 Kopelman et al. reported neuralgic pains lasting up to few months with a mean (SD) duration of 2.8 (1.9) months.

REFERENCES


CALL FOR fillers

The Postgraduate Medical Journal invites readers to contribute fillers for the journal. They can be on any topic likely to be of interest but we particularly welcome fillers on the following:

- Self help groups.
- Favourite books.
- Life defining moments or patients.
- Medical history.

Fillers, of around 250 words, can be emailed to the editor at pmj@btinternet.com for consideration.
Thoracoscopic sympathectomy for palmar hyperhidrosis and Raynaud’s phenomenon of the upper limb and excessive facial blushing: a five year experience
Y S Rajesh, C P Pratap and A B Woodyer

Postgrad Med J 2002 78: 682-684
doi: 10.1136/pmj.78.925.682

Updated information and services can be found at:
http://pmj.bmj.com/content/78/925/682

References
This article cites 23 articles, 0 of which you can access for free at:
http://pmj.bmj.com/content/78/925/682#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections
- Dermatology (110)
- Interventional cardiology (111)
- Epidemiology (401)
- Pain (neurology) (228)
- General surgery (168)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/