

SYMPATHECTOMY FOR WET, DRIPPING PALMS

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ABSTRACT

An analysis of upper thoracic sympathectomy for palmar hyperhidrosis performed in a Neurological Department for the past ten years via several surgical approaches suggests that the posterior median approach is preferable. Histological confirmation of ganglion cells at time of surgery is recommended.

Keywords : Hyperhidrosis, palmar, sympathectomy, posterior median approach.

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INTRODUCTION

Adson and associates⁽¹⁾ were among the first to advocate sympathectomy for treatment of essential hyperhidrosis. It is recognised that for palmar hyperhidrosis, resection of the T2 and possibly the T3 ganglia is sufficient to denervate the upper extremity. Surgical approaches have included anterior transpleural⁽²⁾, per axillary⁽³⁾, via posterior paramedian incisions with rib resection⁽⁴⁾, costotransversectomy via midline incision^(5,6) and supraclavicular⁽⁷⁾.

PATIENTS AND METHODS

Nineteen patients with essential hyperhidrosis underwent upper thoracic sympathectomy in the Department of Neurosurgery of Tan Tock Seng Hospital between 1980 and 1989. All these patients had failed medical treatment and were referred to the neurosurgeon because their wet, dripping palms interfered with their occupation and/or social life. There were 13 male and 6 female patients and their age ranged from 17 to 34 years. All suffered hyperhidrosis affecting all four limbs since childhood. Six out of the nineteen patients (32%) had each a close family member also similarly affected ie. one brother, one mother, two fathers and two sisters. A total of 37 sympathectomies were performed using the posterior paramedian or median, the axillary or the supraclavicular approach (Table I). The ten sympathectomies via the posterior median approach with costotransversectomy as described by Adson⁽¹⁾ and Dohn⁽⁶⁾ were performed by the author and the rest were by various neurosurgeons in the Department.

RESULTS

Eighteen patients had bilateral sympathectomy while one patient had a unilateral sympathectomy via an axillary approach, giving a total of 37 sympathectomies.

The success of a sympathectomy is evident immediately post-operatively when the palms feel dry and warm. The longest follow-up of a successful case is 9 years now. Three out of the 37 sympathectomies were unsuccessful in that the palms were still wet after operation. Two of these were by the paramedian posterior approach and one was by the supraclavicular approach. All these three unsuccessful cases had no frozen section histological confirmation intraoperatively. The two failed

Table I
Surgical Results

Surgical Approach	No. of Sympathectomy	No. of Failure	No. of Complications
Posterior paramedian	20	2	2
Posterior median	10	0	0
Axillary	3	0	0
Supraclavicular	4	1	1

paramedian cases had paraffin histological section done, of which, one case specimen revealed skeletal and adipose tissue while the other case specimen showed nerve fibres only without presence of any sympathetic ganglia. All the ten successful posterior median cases had frozen section histological confirmation. Fourteen of the 18 successful paramedian cases had paraffin histological confirmation while the remaining four did not have any record. The three successful axillary cases had paraffin histological confirmation. Two out of the three successful supraclavicular cases had paraffin histological confirmation while the remaining one did not have any record. Hence intraoperative frozen section is helpful to the surgeon.

There were three cases with post-operative surgical complications. One paramedian case developed post-operative wound haemorrhage from the muscle which required haemostasis. There were two cases of Horner's syndrome, one from a paramedian approach and another from a supraclavicular approach. There was no case of significant post-operative pneumothorax.

DISCUSSION

Essential hyperhidrosis is an idiopathic condition where sweating is excessive, affecting the palms, feet, and less frequently, the axillae and other parts of the body. There appears to be no spontaneous recession. In this series, 32% of the patients had another member of the family similarly affected. Chalmers and Keele postulated that the excessive sweating was due to hyperactivity of the central nervous system since it was found that there was no difference in responses to acetylcholine between normal persons and patients with essential hyperhidrosis^(8,9). Medical treatment including local antiperspirants, iontophoresis, anticholinergic agents have not proven to be effective in severe cases of hyperhidrosis and

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have only a temporary effect. The effective and permanent therapy is T2 sympathetic ganglionectomy. These patients were referred for surgery because they want a permanent cure to their wet, dripping palms which were interfering with their occupation and social life eg. plumber, aircraft technician, secretary. As it is a benign condition, albeit a troublesome one, any surgical treatment must have the lowest risk with the greatest success rate, and this the posterior median approach with intraoperative frozen section histological confirmation apparently satisfies although it is not statistically significant from this small series. The axillary approach is good but is usually done one side at a time and often require a post-operative chest tube insertion.

The paramedian posterior approach requires more dissection of the muscle and resection of the rib and two skin incision posteriorly if bilateral sympathectomy is performed. The supraclavicular approach has a more complex anatomy and a higher risk of Homer's syndrome. Intraoperative histological confirmation of ganglion cells is necessary as nerve fibres and adipose tissue may resemble sympathetic chain even under low-magnification loupe. This series shows that the posterior median approach is best for the neurosurgeon who is acquainted with the back of the spine.

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