
Improvement in Quality of Life after Bilateral Transthoracic Endoscopic Sympathectomy for Palmar Hyperhidrosis

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Abstract

Objective: To evaluate the efficacy of bilateral transthoracic endoscopic sympathectomy (TES), in alleviating symptoms and improving quality of life for patients in Hawaii.

Design: Retrospective cohort study.

Materials and Methods: Patients who had undergone TES were evaluated by phone interview and the SF-36 questionnaire to assess improvements in symptoms and the development of compensatory hyperhidrosis. SF-36 scores were divided into 8 scales and evaluated by one-tailed t-test.

Results: Since 1999, eight patients (five women and three men, mean age 27.4 years old, range 15 - 41 yrs) underwent TES without significant complication. Length of hospital stay was less than one day for all patients except one, who stayed four days. Estimated operative blood lost was less than 100 ml and no blood transfusions were required. No Horner's syndrome was suffered. After a mean follow-up of 7.0 months (range 1.2 - 15.8 months), none of the patients had recurrent symptoms in the palms but all reported moderate compensatory hyperhidrosis located mainly in the trunk and lower extremities (two patients). SF-36 scores showed significant improvements in social functioning ($p < 0.005$), mental health ($p < 0.049$), and role-physical ($p < 0.020$) along with an increase in bodily pain ($p < 0.012$).

Conclusion: Although TES resulted in some bodily pain and compensatory hyperhidrosis; these elements were outweighed by the improvement in palmar symptoms, social, mental, and role physical functioning, and overall quality of life.

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Introduction

Palmar hyperhidrosis can be an embarrassing ailment that affects the lives of 0.6-1.0% of the population.¹ Excessive sweating and heat in the palms of the hands of those affected characterize this condition. Patients can have problems with fine motor activities using their hands. It can also be associated with wetness and embarrassment to the point of social withdrawal.² Non-invasive treatments for hyperhidrosis are available and can be effective in some cases. Transthoracic endoscopic sympathectomy (TES) is an effective treatment that has been proven to relieve symptoms of hyperhidrosis in up to 90% of the patients who do not improve with non-invasive treatments, and to improve their quality of life.^{1, 3-7} Complications associated with TES are minimal, although compensatory hyperhidrosis in other locations of the body may occur. We will examine our experience with TES.

Methods

From January 1999 to May 2000, eight patients suffering from primary palmar hyperhidrosis underwent bilateral TES. These patients were treated at St. Francis Medical Center- Liliha and the Queen's Medical Center, both located in Honolulu, Hawaii.

TES was performed under general anesthesia with double lung ventilation. In a supine position, the right lung is collapsed to allow access to the sympathetic ganglia as they pass across the vertebral bodies. Two 1 cm incisions are placed in the second and third intercostal spaces, just behind the anterior axillary fold. Through these incisions and utilizing a thoracoscope, the sympathetic chain and ganglia are identified and divided from the top of the second rib to the fourth rib. The ganglia are submitted to pathology for confirmation of nerve tissue. The lung is reexpanded and the chest closed without a chest tube. This procedure is then repeated on the contralateral side.

The Short Form-36 (SF-36) was administered to determine pre and postoperative health status. Results of the SF-36 were categorized into 8 scales evaluating physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health.⁸ Some items' responses were reversed to indicate a higher score reflecting better health or more pain.⁹ Scores for each scale were totaled and scaled to 100. Significant differences were assessed by one-tailed t-test. Patients were also asked to evaluate the severity of their symptoms before and after surgery, and any compensatory hyperhidrosis (none, mild, moderate, or severe).

Overall satisfaction with the procedure on a scale of 0→100 was assessed.

Results

From January 1999 to May 2000, eight patients (five women and three men), average age of 27.4 years, range 15 to 41 years, were treated by TES. Morbidity was minimal. Operative blood loss was less than 100ml and no blood transfusions were required for any patient. Length of hospital stay was less than one day in all cases except one. This patient remained hospitalized for four days for pleuritic pain. There were no incidences of Horner's syndrome. All patients reported immediate alleviation of preoperative symptoms after surgery. While three patients indicated moderate palmar symptoms and five reported severe palmar symptoms before TES, all indicated complete lack of any hyperhidrosis in their palms after surgery.

Follow up evaluation occurred after a mean of 7.0 months (range of 1.2 to 15.8 months). All patients reported absence of any recurrent symptoms in their palms. However, all had developed moderate compensatory hyperhidrosis symptoms in the truncal region, with two patients noting hyperhidrosis symptoms in the feet of moderate severity, which had begun within the first week after surgery.

Evaluation of the SF-36 showed no significant changes in the physical functioning, general health, vitality, or role-emotional scales. There were significant improvements in social functioning ($p < 0.005$), mental health ($p < 0.049$), and role-physical ($p < 0.020$) dimensions of the SF-36. In addition to the significant improvement in these areas, the bodily pain scale was increased as well ($p < 0.012$) (Fig. 1). Composite SF-36 scores reflected an overall improvement in health of 8% ($p < 0.043$, Fig. 2). All patients viewed the surgery as worthwhile. There was an 89.25% overall satisfaction rating.

Discussion

We have demonstrated significant improvement in the palmar hyperhidrosis symptoms of all patients undergoing TES, accompanied with a lack of significant postoperative morbidity and short hospital stays. These results support the efficacy of TES in our experience.³⁻⁷

Compensatory hyperhidrosis was reported in all cases, as all patients indicated moderate compensatory hyperhidrosis symptoms in the trunk and two in the feet. However, these compensatory symptoms appear to be of little concern to the patients. The complete alleviation of palmar symptoms with significant improvements in social functioning, mental health, and role-physical dimensions as well as the high overall satisfaction rating is consistent with this assertion.

The SF-36 has been an accepted form for assessment of overall health in the United States and overseas.^{10,11} Patients scored well in most of the physical scales when evaluating their health prior to surgery and had little room to improve as a result of the surgery. Nevertheless, the composite overall improvement in quality of life by TES was striking, and significant (Fig. 2). However, patients did indicate increased levels of bodily pain after TES. Their symptoms were described as burning sensations in the arms and pleuritic pain, but these symptoms were all short lived and related to the surgery. Despite being thoracoscopic in approach and thus minimally invasive, some bodily pain is to be expected. Since palmar hyperhidrosis is associated with social withdrawal, alleviation of the palmar symptoms by TES resulted in improvements in the social functioning, mental health, and role-physical scales. Improvements in their palmar symptoms allowed the patients to interact with people with more confidence, increase their physical productivity, and enhance their overall quality of life.

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Figure 1.— Average improvements in social functioning (SF, $p < 0.005$), mental health (MH, $p < 0.049$), role-physical (RP, $p < 0.020$), and bodily pain (BP, $p < 0.012$) after TES treatment.

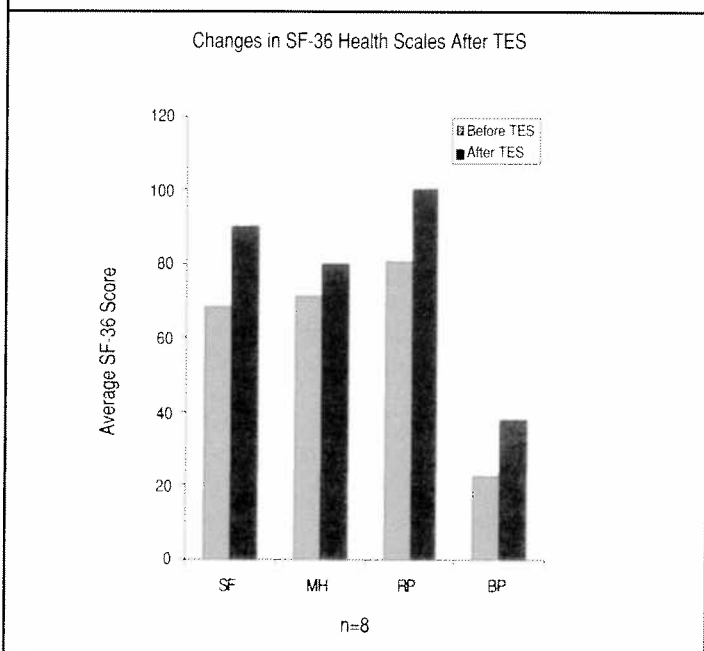
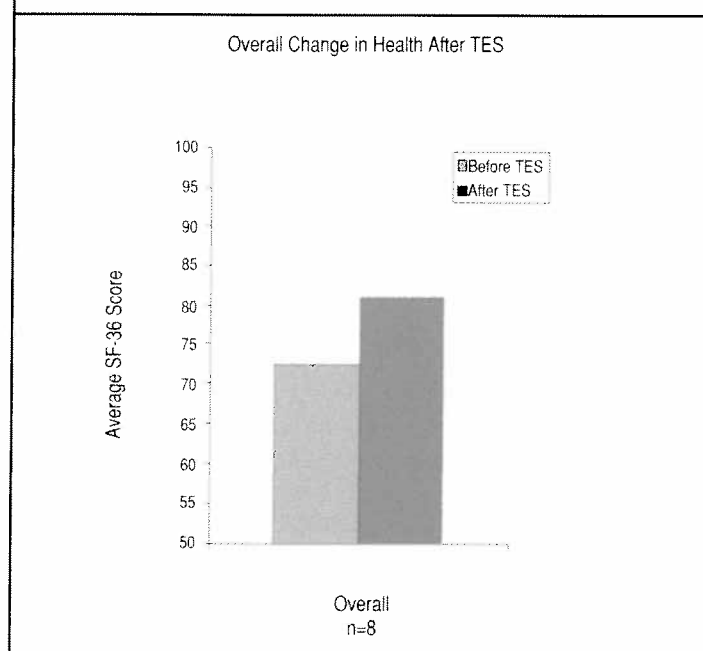


Figure 2.— Improvement in overall quality of life based on composite SF-36 score ($p < 0.043$).



Based on the results of this study, TES is an effective solution to relieve the symptoms of palmar hyperhidrosis. It allows the patients to improve their social confidence, mental health, physical capabilities and quality of life. Patients should be forewarned of likely compensatory symptoms and minor bodily pain as a result of the surgery, however overall satisfaction remains high enough for this treatment to continue to be recommended.

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