Subxiphoid single-incision thoracoscopic bilateral ablative sympathectomy for hyperhidrosis

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INTRODUCTION

Hyperhidrosis is a dysfunction of neural sympathetic control of the eccrine sweat glands, leading to excessive sweating. With advances in endoscopic instruments and surgical experience, laparoscopic single-site surgery has become a popular method of treatment; however, reports regarding single-incision subxiphoid thoracoscopic sympathectomy are limited. To the best of our knowledge, only one case report concerning single-incision subxiphoid thoracoscopic surgery has been published, involving bilateral pulmonary metastasectomy. We describe the first case of single-incision subxiphoid thoracoscopic ablative sympathectomy for hyperhidrosis.

CASE REPORT

A 34-year-old female presented to our clinic with excessive palmar and axillary sweating for more than 10 years. Her symptoms had worsened in recent months to the point of interfering with her daily life. After discussion with the patient, we arranged a single-incision subxiphoid thoracoscopic electrocautery of the sympathetic trunk, bilaterally, at T3 level.

TECHNIQUE

With the patient in reverse Trendelenburg, double lumen endotracheal intubation was performed after induction of anaesthesia. The surgeon stood on the side of the patient to perform the procedure. A single 2-cm subxiphoid incision was made and a subcostal tunnel was formed by blunt finger dissection from the subxiphoid incision to the pleural cavity. The wound protector system (Alexis Wound Retractor, Applied Medical, USA) was then introduced (Fig. 1). A 10-mm 0° operative thoracoscope (Model 26034 AA; Karl Storz, Germany) was inserted through the subxiphoid incision for thoracic exploration. The right sympathetic trunk, at the level of T2 (second intercostal space) and T3 (third intercostal space), was identified, isolated with electrocautery, and the trunk was cut using electrosurgery. The left-sided ablative sympathectomy was performed in a similar manner. Intraoperative palmar temperature was measured to ensure the successful sympathectomy. Small suction tubes were used to evacuate the residual air in the thorax. In addition, we also asked the anaesthesiologist to inflate the lung when we were closing the wound. Total operative time was ~60 min and the volume of blood loss was 10 ml. The patient was discharged from the hospital the next day with complete remission of her symptoms. Excess palmar sweating released after operation and there was no compensatory sweating after a 6-month follow-up.

DISCUSSION

Palmar hyperhidrosis is a benign functional disorder that is associated with significant psychological and social handicaps [1]. The treatments of hyperhidrosis included topical agents, botulin injections, systemic anticholinergic treatment, iontophoresis and sympathectomy [2]. Although transthoracic thoracoscopic sympathectomy is minimally...
The single-incision subxiphoid thoracoscopic approach requires only a 2-cm incision in the upper abdomen. In addition, the technique does not cause postoperative intercostal neuropathy and postoperative pain is minimized as the intercostal space is bypassed [4]. The technique requires only a 2-cm incision and simple electrosurgical equipment. It does not require any additional incisions in the hemidiaphragms.

Besides its use as an alternative approach for the treatment of hyperhidrosis, as outlined in this case report, the single-incision subxiphoid thoracoscopic approach has proved useful for other conditions such as bilateral metastasectomy of pulmonary metastases [5], as it is less invasive than transthoracic surgical approaches from the side of the chest.

In conclusion, bilateral ablative sympathectomy for hyperhidrosis via a single subxiphoid incision is a novel and minimally invasive approach that avoids the postoperative intercostal neuropathy.

Conflict of interest: none declared.

REFERENCES