Free-standing ambulatory endoscopic transthoracic sympathectomy made with a urological resectoscope

Miguel Angel Noguera, Cesar Alejandro Romero, Aldo Gustavo Martinez, Mariano Luis Rotger, Hugo Diaz San Roman, Federico A. Espeche

Department of Ambulatory Surgery, General Surgery Unit, President Nestor Kirchner Hospital, San Miguel de Tucuman, Argentina

INTRODUCTION

The endoscopic transthoracic sympathectomy (ETS) is an efficient procedure designed to treat palmar/axillary hyperhidrosis. The standard surgery even includes the use of selective intubation and three thoracic access points, which are generally used for the pass of 5-mm optic and work channels (in developing countries, due to costs, the 10-mm optic cost is standard), while the patient remains on a semi-seated stance or with successive laterisations with some changes of surgical fields. Nowadays, barely thoracic drains are required for this procedure, which are later removed during the post-surgery in a variable period between 2 and 24 h, with a hospitalization period between 12 and 24 h, generally given by the patient’s own pain management and the thoracic drains.\(^1\)\(^,\)\(^2\) We present, as differences of the usual techniques, the realization of the procedure under a system of ambulatory free-standing major surgery and through the use of a unique access using a urological resectoscope for its realization. The initial results allow us to be optimistic in its massive use.

OUR MODIFICATION

At the President Néstor Kirchner day hospital, the only public free-standing hospital in Argentina, we have made a series of modifications that allow less post-surgery pain through a minimal aggression process, avoiding the placement of thoracic drains and allowing the patients discharge between 2 and 4 h of the post-surgery fulfilling with the post-anaesthetic discharge scoring system criteria.\(^3\) The different steps may be cited in the following:

- The standard selection criteria for ambulatory major surgery were used: age <65, body mass index <35, the American Society of Anesthesiologists 1 or 2, without surgery or previous pleuropulmonary trauma.

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The patient is admitted, the venous access is placed in the pre-anaesthesia room and the colocation of cefazolin (2 g), dexamethasone (8 mg), metoclopramide (10 mg) and diclofenac (75 mg) takes place. Placement of analgesics 30 min before referral to surgery makes better analgesia \[4\] in the post-operative period.

The patient's position: it is placed in the dorsal decubitus position with both arms at 90° of the body and the head of the surgery table at 45°. The sterile fields are made and both armpits and lateral thorax are left free. The surgery table is rotated 25° to the opposite side to where the surgery is going to take place [Figure 1].

During general anaesthesia, ventilation is managed with laryngeal mask.

One access is made in the mid-axillary line in the 4th intercostal space. With this port, we introduce the urological resectoscope into the pleural cavity, the pulmonary collapse is helped, keeping the apnoea for a few moments [Figure 2].

The cavity is scanned, the head of the second rib is identified as repair and sectioned at performing a nervous section at the height of the third and fourth rib bilaterally with the resectoscope.

At this point, we should comment that the resectoscope has a more limited visual range than the conventional thoracoscope, something that slows the identification of the anatomical fixes for the section at the desired height. In addition, the minimal pleural adherences section requires the placement of 3 or 5 mm accessory ports, something that only happened in only one case of this series.

The fact that the handle of the resectoscope can be rotated 360° facilitates the procedure of pulling apart the sympathetic chain of the neighbouring vascular structures, minimising the risk of a haemorrhage.

After the nerve section, pulmonary re-expansion is forced, under direct vision.

The cavity is closed without leaving any type of thoracic drains and close the skin.

The surgery table is rotated to the opposite side, and the same procedure is performed on the contralateral side.

Once the patient has recovered from the surgery room, they are referred to the post-anaesthesia care unit (PACU) area. In it, it performs mediate recovery, and vital parameters are controlled. Its discharge is granted when it meets the payment application data security standard (PADSS) criteria plus food tolerance, delivering the analgesic medication for your home.

**BENEFITS**

This method that has been already done to 64 patients suffering from palmar/axillar hyperhidrosis inside of our institution, allows an early discharge without a hospitalian re-entry in any of the cases. Pleuropulmonary adhesions were detected in two cases, something that prevented the realisation of the sympathectomy and the process was scrapped.

All the patients fulfilled their post-operative period by an average of 150 min, with a range between 90 and 250 min. When they had a PADSS >9, discharge was indicated, with the addition of dietary tolerance for the oral administration of analgesics in the post-operative control.

Chest surgery was not routinely performed in PACU, only in the presence of unusual pain or desaturation of more than 5% with respect to the pre-operative value. It was used in three cases, always due to pain and not showing pleural occupation syndrome.
The minimally invasive performance of ambulatory endoscopic thoracic sympathectomy allows a sharp decrease in health costs, the abbreviated post-operative improves the quality of life of patients and helps in the dissemination and acceptance of the procedure.

This procedure represents a new way of doing the same surgery, but with a minimally invasive access, even though we expect the same results, once the actual tracing with a bigger number of patients, we shall communicate our results.

It is known from the literature and proven by our experience that the safety of the surgical patient does not depend on hospitalization, but rather on adequate selection criteria, with our parameters, this surgery is effective, with an adequate cost-benefit and safely implemented in surgery ambulatory free-standing.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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