

Video-assisted thoracic sympathectomy: literature review.

Simpatectomia torácica por videotoracoscopia: revisão da literatura.

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ABSTRACT.

Thoracic sympathectomy has been effective in relieving hyperhidrosis in several patients, with quality of life improvement. The knowledge of the clinical picture of each patient, as well as the possible postoperative complications, are fundamental to obtain good results. Thus, we performed a review of articles from the PubMed database published between 2005 and 2019 that presented, as the main topic, thoracoscopy sympathectomy for the treatment of hyperhidrosis, with the objective of evaluating the current state of art referring to postoperative quality of life, surgical time and its complications. From this analysis, we verified the importance of the level of sympathetic ganglion chain section in relation to results. The complication, although occurring, did not reduced the postoperative level of satisfaction or patients' quality of life.

Keywords: Sympathectomy. Hyperhidrosis. Quality of Life. Thoracic Surgery, Video-Assisted.

INTRODUCTION

Primary or essential hyperhidrosis is a disorder characterized by excessive and uncontrollable sweating, in the absence of a discernible cause. It is a disease linked to emotional stress or psychological factors, which affects preferably the axillae, palms of the hands, soles of the feet and face. It is estimated that its incidence is 0.6% to 1% of the population, occurring more frequently in young patients. In 2004, in the United States, there were 150,000 people with hyperhidrosis (2.9% of the studied population), 51% being axillary, 25% palmar, and 20% facial. Of these patients, 38% required surgical treatment. While axillar and sole sweating cause discomfort in most cases, palmar hyperhidrosis causes social professionals, and often psychological problems¹.

Conventional treatments for this condition do not guarantee satisfactory

results, making surgical procedures necessary. A treatment option is based on the removal of the eccrine and apocrine glands from the axillary region. Several techniques were proposed, all of them with a high rate of complications. In contrast, endoscopic surgery is less invasive and guarantees lower complications rates, thus being an excellent treatment indication². Therefore, thoracoscopic surgical clipping (VATS) of the sympathetic branch has become an approach for the treatment of hyperhidrosis when conservative treatment has failed.

Some of the advantages of endoscopic surgery that have been continuously recognized are the lower intensity of postoperative pain, the shorter hospital stay, the earlier return to normal activities and better esthetic results. However, it is associated with potentially relevant complications, such as postoperative compensatory sweating and recurrent sweating³.

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The objective of this study is to evaluate the current state of the art as to postoperative quality of life, surgery time and the complications of video-assisted sympathectomy.

METHOD

We performed a bibliographic search in the PubMed database, on January 2019, and selected articles from 2005 to 2019, written in English or in Portuguese, using the following terms: "sympathectomy", "hyperhidrosis", "quality of Life" and "video-assisted thoracoscopic" associated with their variations, in accordance with MeSH. We found 58 items for reading the summary. We included all original articles with observational design, carried out in humans, whose main theme was

sympathectomy performed by video-thoracoscopy for the treatment of hyperhidrosis. Among those, we selected articles that evaluated patients' quality of life after surgery, those studying postoperative complications, or those which indirectly addressed such aspects. We excluded articles that analyzed techniques used for surgery that did not address the quality of life or postoperative complications. After reading the abstracts, we selected 30 articles that met the criteria initially proposed for full reading.

RESULTS AND DISCUSSION

All studies evaluating patients' quality of life as the focus showed similar results regarding patients' satisfaction with the outcome of hyperhidrosis elimination⁴⁻¹⁴ (Table 1).

Table 1. Evaluation of quality of life after sympathectomy.

Study	Methods	Patients (n)	Postoperative/Discharge	Conclusion
Akil <i>et al.</i> (2018) ³	Data collected prospectively and analyzed retrospectively.	51	At discharge, all patients reported hot and dry hands and axillae, a fact they also reported four weeks later.	There was no evidence of compensatory sweating, demonstrating treatment effectiveness.
Silva Sobrinho <i>et al.</i> (2017) ⁴	Applied questionnaire on hyperhidrosis-related quality of life from the preoperative period up to one year after the operation.	122	Compensatory hyperhidrosis occurred in 78% of the patients, affecting more than one body segment in 83% of the cases.	Thoracoscopic sympathectomy improves the quality of life of patients with primary hyperhidrosis. Transient compensatory hyperhidrosis occurred in most patients, but did not significantly alter the improvement in quality of life.
Dias <i>et al.</i> (2016) ⁵	Two questionnaires were applied in three different moments: "Quality of life" in patients with primary hyperhidrosis and "Scale for anxiety and depression"	54	After 30 days of surgery, 87% of patients rated their quality of life in relation to hyperhidrosis as much better, 9% slightly better, 2% as the same and 2% as much worse.	Thoracoscopic sympathectomy improves the quality of life of patients with primary hyperhidrosis, even with the emergence of reflex sweating. Anxiety is directly related to the intensity of the reflex sweating, without compromising the degree of patient satisfaction.

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Study	Methods	Patients (n)	Postoperative/Discharge	Conclusion
de Campos <i>et al.</i> (2017) ⁶	Assessed levels of sympathectomy resection, technical difficulties, surgical complications, preoperative quality of life, treatment response and improved quality of life 30 days after surgery.	15 patients from an initial group of 2300 submitted to resympathectomy after failure of primary surgical treatment.	After surgery, 11 patients considered their quality of life excellent, three very good, and one, good.	Resympathectomy is an effective procedure and improves the quality of life in patients with primary hyperhidrosis whose first surgery failed.
Baroncello <i>et al.</i> (2014) ⁷	Patients submitted to thoracoscopic sympathectomy for the treatment of primary palmar and axillary hyperhidrosis, and the association of the two. Applied a questionnaire on hyperhidrosis-related quality of life before and after the operation.	51	The mean quality of life related to hyperhidrosis, in a score of 0 to 100, before the sympathectomy was 34.6, and after the operation, 77.1. Compensatory hyperhidrosis occurred in 84.3% of the patients.	Thoracoscopic sympathectomy improves the quality of life of patients with primary hyperhidrosis, maintaining this result over time. Compensatory hyperhidrosis occurred in most patients, but did not significantly influence the improvement in quality of life.
Ibrahim <i>et al.</i> (2013) ⁸	A study of 260 consecutive, bilateral, thoracoscopic sympathectomies that were performed in 130 patients for primary axillary and primary hyperhidrosis through single-port access.	130	No operative mortality or conversion to open surgery. Decreased heart rate observed one year after surgery and permanently over time. There was no relapse during the follow-up period (31.5 months) and 90% of patients reported improvement in quality of life.	Bilateral, one-stage, mini-uniportal thoracoscopic sympathectomy is a valid and safe treatment for primary hyperhidrosis, obtaining definitive and esthetic results, with excellent patient satisfaction. Compensatory sweating may occur.
Zhu <i>et al.</i> (2014) ⁹	All procedures were performed transumbilically under general anesthesia and the patients were intubated with a double lumen endotracheal tube.	35	Success rate after 12 months was 97.1% (34 of 35) for isolated palmar hyperhidrosis and 72.2% (13 of 18) for axillary hyperhidrosis. Compensatory sweating was reported by 28.6% of patients at the one-year follow-up evaluation. Hyperhidrosis-related quality of life improved substantially in 27 (77.1%) patients.	Transumbilical thoracic sympathectomy is an effective alternative to the conventional approach. This technique avoided chronic chest pain and paraesthesia associated with the thoracic incision. In addition, this new procedure provided maximum cosmetic benefits.

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Study	Methods	Patients (n)	Postoperative/Discharge	Conclusion
Raposo <i>et al.</i> (2015) ¹⁰	Questionnaires applied to randomized patients, both to evaluate results' persistence and quality of life after surgery.	720	In 46 patients, distinct anatomical features obscured the sympathetic chain, partially or totally preventing the of the procedure. The other 674 patients reported complete relief of symptoms.	When comparing pre- and postoperative results, there was a statistically significant difference between the majority of responses.
Wolosker <i>et al.</i> 2010) ¹¹	Examine whether gender interferes with quality of life after surgery and whether the quality of life before the procedure interferes with the analysis in the postoperative period.	1044	No statistically significant differences between genders regarding quality of life in patients with palmar hyperhidrosis. At the 30-day postoperative interview, quality of life improved in both groups, with no statistical difference between them.	Patients with palmar hyperhidrosis present improvement in quality of life after video-assisted sympathectomy, regardless of gender.
Neves <i>et al.</i> (2012) ¹²	Investigated the improvement in quality of life (QoL) of a group of 45 children undergoing or not video-assisted sympathectomy for palmar hyperhidrosis (PH) four years after the initial assessment.	45	Twenty-five patients (83.4%) from the VATS group showed a great improvement in PH, and five (16.6%), partial improvement; 12 (80%) children in the control group had some type of improvement, and three (20%), partial improvement. Two (13.3%) children in the control group and 23 (76.7%) in the VATS group had a great improvement in QoL.	For children with PH and poor QoL, VATS is better than no treatment. It produces better results in relation to sweating and improvement in the quality of life, evidencing that, regardless of age, the video-assisted surgery is the best option.
Burashi (2008) ¹³	Surgery consisted of thoracoscopic sympathectomy of T2-T3 ganglia. The operation was performed on both sides.	25	Hyperhidrosis disappeared in 98% of the patients. Decrease in axillary transpiration was found in 16 patients, and in the feet, in six. Regarding satisfaction with the procedure, 22 patients were very satisfied, two were satisfied, and one, moderately satisfied.	The results obtained with this technique allow to recommend thoracoscopic sympathectomy for the treatment of this disease in pediatrics.

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Study	Methods	Patients (n)	Postoperative/Discharge	Conclusion
Ferreira <i>et al.</i> (2018) ¹⁴	A descriptive and longitudinal study evaluating mean resting heart rate (HR) by electrocardiogram 20 minutes before the four-second exercise test (4sET), which was used for the assessment of cardiac vagal activity (CVA) on three occasions: before surgery, one month after the surgery and four years after surgery.	22	Mean resting HR presented a significant reduction between the preoperative evaluation and one month after surgery, tending to return to the preoperative values four years after surgery. There was a significant increase in CVA between the preoperative period and one month after surgery, also tending to return to preoperative values after four years of.	The sympathectomy resulted in a change in resting HR and CVA one month after surgery, returning to values close to the preoperative period after four years.
Montessi <i>et al.</i> (2007) ²	Compared the degree of satisfaction of the sympathectomized patients and the presence of compensatory sweating according to different levels of ablation. Patients were separated into three groups: Group I thermo-ablation of the sympathetic trunk. Group II: thermo-ablation of the sympathetic trunk, having T3 as the highest level. Group III: thermo-ablation of the sympathetic trunk, having T4 as the highest level.	521	Optimal control of palmar/axillary hyperhidrosis in 94 (82%) of patients in group I, 89 (89%) in group II, and 80 (80%) in group III. Reflex sweating in 67% of patients in groups I and II, falling to 61.29% in group III due to the thermo-ablation at T4. Severe reflex sweating occurred in 32% of patients in group I, 9% in group II, and 4% in group III.	Sympathectomy provided an excellent degree of satisfaction and a low rate of complications. There was no difference in the incidence of reflex sweating with different levels of thermo-ablation, but the intensity of this complication was shown to be lower with lower levels of blockade, mainly T4.

Analyzes of surgical methods

Thoracic sympathectomy is the established method for treatment of hyperhidrosis in its various ways. Several authors have studied bilateral, uniportal, biportal sympathectomy at one or more

different times, and found no significant differences in the surgical results obtained^{2,7}.

de Campos *et al.* found that despite the high success rate of sympathectomy by VATS, some patients do not respond to this procedure, requiring further surgery, resympathectomy (REVERS).

In this study, 15 subjects underwent resympathectomy. After surgery, 11 considered it excellent, three, very good, and one, good. This situation demonstrates that sympathectomy may not be effective and reoperation may be indicated⁶.

Ibrahim *et al.* evaluated the difference between unilateral sympathectomy performed in two surgical times compared with bilateral one in a single surgical time. For this, they recruited 270 patients with severe palmar and/or axillary hyperhidrosis. One hundred and thirty patients underwent one-stage, bilateral, single-port, video-assisted thoracoscopic sympathectomy (one-stage group), and 140, two-stage, unilateral, video-assisted sympathectomy thoracoscopic, with an average interval of four months between procedures (two-stage group). The mean postoperative follow-up period was 12.5 months¹⁵. After surgery, the hands and axillae of all patients were dry and warm. Sixteen (12%) patients in the one-stage group and 15 (11%) patients in the two-stage one suffered mild to moderate pain. Compensatory hyperhidrosis occurred in 25 (19%) patients in the one-stage group and in six (4%) of the two-stage one. This allows to consider that the two-stage approach could render lower probability of development of compensatory hyperhidrosis than the one-stage¹⁵.

Another study, with 120 patients with primary palmar hyperhidrosis, randomly divided subjects into two groups, electrocautery hook group (60 patients) and titanium clip group (60 patients). All patients underwent sympathetic block at the T4 level. The postoperative follow-up period was two months and all patients were cured. It concluded that the majority of patients show a remarkable improvement in quality of life. However, there was no significant difference between groups¹⁶.

According to Garcia Franco *et al.*, patients with hyperhidrosis obtained best results with surgery as compared to patients undergoing radiofrequency sympathicolytic in terms of efficiency and quality of life, despite a significant improvement in quality of life observed in patients treated with radiofrequency¹⁷. Patients with facial flushing achieved good results with surgical procedures, and not so satisfactory results with radiofrequency ablation, resulting in significant differences in treatment efficacy and quality of life. They concluded that patients with facial flushing treated with radiofrequency procedures did not show improvement in quality of life after the intervention. The results support the view of the surgical sympathectomy as the gold standard treatment for severe cases of hyperhidrosis and facial flushing, and radiofrequency sympathicolytic as a second option for patients with hyperhidrosis.

The study of Scognamillo *et al.* aimed to evaluate and compare the immediate and long-term results of T2-T4 with T3-T4 thoracoscopic sympathectomy for the treatment of palmar and axillary hyperhidrosis. Twenty-four patients underwent T2-T4 sympathectomy with a 5-10mm trocar (Group A), 43 T2-T4 a with 2-5mm trocar (Group B), 15 T3-T4 sympathectomy with a 5-10mm trocar, and six T3-T4 sympathectomy with a 2-5mm trocar (Group C). One year after the procedure, there was no significant difference between T2-T4 and T3-T4 sympathectomy in terms of postoperative palmar anhidrosis or onset of compensatory hyperhidrosis¹⁸. Using thinner trocars (2-5mm) resulted in decreased postoperative intercostal pain and better cosmetic results, with higher levels of patient satisfaction. Improvement in the quality of life of all patients has been reported even in the case of relapse or onset of compensatory hyperhidrosis¹⁸.

According to Ravari *et al.*, unilateral thoroscopic sympathectomy for patients with primary palmar hyperhidrosis is a safe, effective and minimally invasive procedure. Only a small number of patients will eventually require a contralateral sympathectomy for a non-dominant hand¹⁹.

Several sympathectomy techniques are continuously tested in order to verify their efficacy. However, it is evident that endoscopic sympathectomy is the best method, considering that the shorter operative time and smaller incision diameter guarantee better results. It is important to note the need, in some cases, of resympathectomy, achieving results not accomplished in the first approach.

Compensatory hyperhidrosis

In the case of compensatory hyperhidrosis (CH), Kuijpers *et al.* observed a significant reduction in the mean score of the Hyperhidrosis Disease Severity Scale (3.69 on preoperative versus 1.06 on postoperative). In 97 (97%) of the 100 patients enrolled, there was a reduction of more than 80% of hyperhidrosis in patients submitted to bilateral, single-port thoroscopic sympathectomy. CH ensued in 27 patients (27%)²⁰.

In the analysis by Currie *et al.*, each patient received a questionnaire about the success of the procedure, CH and general satisfaction. Of 46 patients with hyperhidrosis (34 women), 20 had hyperhidrosis in a combination of areas, 14 in the axillae alone, nine on the palms and two with facial symptoms. After 42 months (range 6 to 84), 32 (69.5%) patients reported complete dryness or significant improvement of symptoms and 15 reported a substantial improvement in quality of life. However, 43 patients (93%) suffered from

compensatory sweating and, of these, 27 had to change their clothes more than once a day. The authors concluded that thoracoscopy sympathectomy is effective in the treatment of hyperhidrosis. However, compensatory sweating seems inevitable and infrequently improves with time. Patients need to be carefully advised before undergoing surgery²¹.

Prasad's *et al.* studied bilateral, T3-level thoroscopic sympathectomies. All patients had immediate discontinuation of palmar hyperhidrosis. CH was the most problematic side effect for all patients. However, considering the low morbidity and zero mortality with this surgical technique, they recommend its use as a method of treatment of palmar hyperhidrosis. Thoracic sympathectomy eliminates the palmar hyperhidrosis with low recurrence rates and produces a high rate of patient satisfaction²².

In a study conducted with the purpose of analyzing the complications, side effects, degree of satisfaction and quality of life of 406 patients after sympathectomy for hyperhidrosis of the upper limb, that there was no persistence of hyperhidrosis. Overall recurrence was 3.7% and CH was 55%, but it was not related to sympathectomy extension²³.

Montessi *et al.* verified the degree of patient satisfaction with sympathectomy at different levels of ablation, comparing when it started at the T2, T3 or T4 level. They evaluated the outcome obtained surgically associated with the existence and intensity of compensatory sweating according to ablation levels. In T2 and T3, the level of compensatory sweating was 67%, with 32% being intense in T2 and 9% in T3. In patients undergoing thermoablation from the T4 sympathetic trunk downwards, the incidence of reflex hyperhidrosis dropped to 61.29%, 4% considered severe².

Compensatory hyperhidrosis is the main and undesirable side effect that appears over time and is not related to the extent of sympathectomy. Excessive dryness is reported by some patients, with no improvement over time. However, the degree of postoperative satisfaction is high, but decreases over time due to the appearance of recurrence and side effects. The efficacy and absence of compensatory sweating determine an excellent quality of life²³. Thus, it is clear that CH is a common situation in patients who undergo sympathectomy, and it is imperative that they are aware of this.

Resection level and results

The studies in question converge to the conclusion that the T4 level resection is a good treatment option, with effective success rates, especially in relation to the axillary and upper limb hyperhidrosis, since it features smaller compensatory sweating rates, and when present, it is milder. This allows quality of life to be guaranteed for longer. Regardless of the resection level, however, the increase in QoL is substantial²⁴⁻³⁰ (Table 2).

Table 2. Evaluation of the sympathectomy resection level.

Article	Resection level	Patients (n)	Variables analyzed	Conclusion
Wolosker <i>et al.</i> (2008) ²⁴	T3 and T4	1644	Quality of life	Improvement in their quality of life after surgery regardless of patients' age.
Munia <i>et al.</i> (2007) ²⁵	T3-T4 and T4	64	Compensatory hyperhidrosis	Both techniques were effective in the treatment of axillary hyperhidrosis, but the T4 group showed milder compensatory hyperhidrosis and greater patient satisfaction in the follow-up of one year.
Yazbek <i>et al.</i> (2005) ²⁶	T2 and T3	60	Compensatory hyperhidrosis	T3-level denervation associated with less severe in CH the immediate postoperative period
Neumayer <i>et al.</i> (2005) ²⁷	T4	73	Quality of life	Quality of life improved significantly after T4 sympathetic blockade.
Munia <i>et al.</i> (2008) ²⁸	T3-T4 and T4	64	Compensatory hyperhidrosis	After one year, all T3-T4 patients had some degree of compensatory hyperhidrosis, compared to only 14 patients in the T4 group.
Yazbek <i>et al.</i> (2009) ²⁹	T2 and T3	60	Compensatory hyperhidrosis and quality of life	Improved quality of life observed from the first postoperative evaluation on, but without any difference between groups. T3 sympathectomy presented compensatory hyperhidrosis with lower severity. Improvement in quality of life was similar between the groups.
Vanderherlst <i>et al.</i> (2011) ³⁰	T2, T3 and/or T4	246	Compensatory hyperhidrosis	In the T4 group, the prevalence of CH was markedly lower (53%) and none of these patients were dissatisfied.

Complications

In a study on complications after video-assisted sympathectomy with 260 patients, eight (6%) had unilateral pneumothorax and 25 (19%) developed compensatory hyperhidrosis. In addition, winter and fall were identified as protective factors for the occurrence of compensatory sweating. There was no recorded operative mortality or conversion to open surgery⁷. In another study, conducted with 46 patients, two early postoperative complications were reported: one hemothorax one that required a chest tube and one thoracic infection. Three patients required a new procedure²¹.

Ibrahim *et al.*, in a study of 270 patients comparing unilateral two-stage sympathectomy with bilateral one-stage approach, observed pneumothorax in eight (6%) patients in the one-stage group and in 11 (8%) in the two-stage group. However, no patient developed Horner syndrome¹⁵. In another analysis comparing the use of electrocautery and titanium clip in the procedure, unilateral pneumothorax found by the chest radiograph occurred in three patients in the electrocautery hook group and in one patient in the titanium clip group, but none required thoracic drainage. Neither perioperative mortality nor serious complications, such as cardiac arrhythmia or arrest, were observed during the operation. No bradycardia or Horner's syndrome occurred¹⁶.

In another study with 100 patients, complications such as postoperative pneumothorax were observed in four patients (4%), requiring pleural drainage in three. All patients fully recovered and were discharged the next day after radiological examination of the chest and drainage. Postoperative pain requiring analgesics for more than one week was recorded in thirteen patients (13%), with only three patients (3%) needing more than paracetamol after two weeks (17.3 days).

There were no intraoperative bleeding, infections or Horner's syndrome. Conversion to thoracotomy or insertion of extra trocars were not required in any patient²⁰.

Silva Sobrinho *et al.*, in a research with 51 patients, reported the following complications: 42 (34.4%) patients had transient intercostal neuralgia; there were two cases (1.63%) of residual pneumothorax, resolved with closed drainage for 24 hours; one patient (0.81%) had upper limb paresis, with gradual improvement during outpatient follow-up; and seven patients (5.73%) presented regional hypoesthesia. In another study with 406 patients, complications arose in 23 cases (5.6%), pneumothorax being the most frequent⁴.

A longitudinal follow-up study on cardiac vagal activity investigated the possibility of sympathectomy at the T4, T5 and T6 levels result in cardiac performance alterations. Patients undergoing the procedure were evaluated for the cardiac vagal activity by means of resting heart rate and the cardiac vagal index in the preoperative period, one month after surgery and four years postoperatively. There were changes in the first month, with a predominance of the action of the parasympathetic branch that reverted after four years, suggesting a physiological adaptation of the organism¹³.

Concerning adolescents and children, a study of 25 patients showed that the rate of postoperative complications was 20%, all being transient. Three patients had subcutaneous emphysema that resolved within 24-48 hours. One reported major pain for 24 hours, and another, pain in the puncture site that improved with common analgesic until disappearing within three months¹². Several other studies have reported no postoperative complications^{8,20}.

Mean surgical time

One of the benefits of video-assisted surgery is its shorter operative time and hospital stay, which has been observed in several works. Four studies verified the time elapsed to perform the surgical procedure, and two evaluated the length of hospital stay. In the first, bilateral sympathectomy was performed with a single portal, the mean operative time being 38 minutes. Mean time of hospital stay was 1.1 days⁷. In the second, the mean operative time was 47 minutes for bilateral sympathectomy. The mean hospital stay was 1.15 days²⁰. In the third, the mean operative time was 38 minutes in the one-stage group and 39 minutes in the two-stage one, since this study assessed the difference between the performance of unilateral, two-stages sympathectomy and the bilateral, one-stage approach¹⁵. In the fourth, the mean operative time for each side was 15 minutes for T3-T4 sympathectomy and 28 minutes for T2-T4 sympathectomy¹⁸. In another study, mean postoperative stay was 1.1 days²². These evidences demonstrate that the operative time is short for the endoscopic surgery, varying according to the procedure of choice, and the average hospital stay does not exceed two days.

CONCLUSIONS

From the analysis of several studies, we verified the importance of the level of sympathetic

ganglion chain section in relation for the treatment results of primary hyperhidrosis. Compensatory hyperhidrosis occurred in most of the patients who underwent sympathectomy, being the major surgical complication, occurring even late. In addition, although uncommon, pneumothorax may also occur. Despite this, sympathectomy has a high level of satisfaction, with a large increase in quality of life.

The level for craniofacial sweating is T2, but studies have shown that it determines a high intensity of compensatory sweating, whereas palmar sweating responds well to T3-level section, with intermediate CH. Thermo-ablation at the T4 level has a very good result for the palmar region and excellent for the axillae, with a satisfaction index above 86%. In addition, sympathectomy for palmar hyperhidrosis leads to extreme dryness of the hands when performed at higher levels, which is mitigated with T4 sections. CH is the most commonly observed complication, which emphasizes the importance of surgical planning in relation to T4-level ablation, concluding that it is the most efficient with regard to the CH rates, with no change results' satisfaction.

Video-assisted sympathectomy has proved to be a quick, less-than-one-hour, effective, low-complication procedure, and able to fulfill the desired goal.

R E S U M O

A simpatectomia toracoscópica mostrou-se eficaz no alívio da hiperidrose em diversos pacientes, com melhora da qualidade de vida. O conhecimento do quadro clínico de cada paciente, assim como, as possíveis complicações pós-operatórias, são fundamentais para a obtenção de bons resultados. Deste modo, foi realizada uma revisão na base de dados PubMed de artigos publicados entre 2005 e 2019 que apresentavam como temática principal a simpatectomia realizada por videotoracoscopia para o tratamento da hiperidrose, com o objetivo de avaliar o atual estado da arte referente à qualidade de vida pós-operatória, o tempo de cirurgia e as suas complicações. A partir desta análise, verificou-se a importância do nível de secção da cadeia ganglionar simpática em relação aos resultados. As complicações, apesar de ocorrerem, não reduziram o nível de satisfação e qualidade de vida pós-operatória dos pacientes.

Descritores: *Simpatectomia. Hiperidrose. Qualidade de Vida. Cirurgia Torácica Vídeoassistida.*

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