Axillary hyperhidrosis - surgical treatment using vacuum curettage

Hiperidrose axilar - tratamento cirúrgico através da curetagem aspirativa

Ronaldo Golcman¹, Benjamin Golcman², Murilo Francisco Pires Fraga³

ABSTRACT

Objective: To evaluate the results of treating axillary hyperhidrosis by vacuum curettage. Methods: Vacuum curettage was performed in 37 patients to treat axillary hyperhidrosis, from May 1999 to December 2005. Based on the reason for patients looking for treatment (interference in their quality of life), the evaluation criterion was a validated self-applicable questionnaire called “The Dermatology Life Quality Index”. Statistical analysis was performed by means of Z score considering as significant the p value < 0.05. Results: In a group of 73 axillae (37 patients), after applying the questionnaire, a mean score of 15.4 (10-20) was obtained in the preoperative period out of a maximum of 30 points, which represented the lowest quality of life. The mean score in the postoperative period was 2.0 (1-10). The difference between the values obtained in the pre- and postoperative periods was, in average, 13.4 (1-20) points. The statistical analysis of the mean variation between the pre- and post-treatment scores showed an improvement in quality of life of patients after surgery (p < 0.05). The aspirate was sent for histological identification and confirmed the presence of sweat glands. Conclusions: We concluded vacuum curettage improves quality of life in patients with axillary hyperhidrosis and can be the first surgical treatment option.

Keywords: Hyperhidrosis; Axilla; Vacuum curettage; Quality of life

INTRODUCTION

Primary hyperhidrosis is a disease characterized by increased sweating at levels higher than physiological needs. The disease affects approximately one percent of population and mainly young individuals of both sexes (1-3). It may occur in any body surface area but it is more frequently observed in sites with higher density of eccrine glands, such as axillae, palms and soles. The axilla has eccrine and apocrine glands; the former produce sweat and the latter are also known as odor glands.
The occurrence of sweating with intense odor is called bromidrosis. There is no direct relation between axillary hyperhidrosis and bromidrosis.

Axillary hyperhidrosis, accompanied or not by bromidrosis (body odor), is an affection that interferes directly in quality of life. Patients have restricted social, professional and even affective activities(3).

The first therapeutic option is always clinical(1,3), by using topical agents (aluminum chloride hexahydrate, astringent agents), systemic drugs (anticholinergic agents), iontophoresis and botulinum toxin; when the desired result is not achieved, other therapeutic options are tried(4-13). If the clinical picture persists after the initial management, other more effective therapies should be applied.

Biofeedback techniques, as well as iontophoresis, demands many sessions and produce poor results in the axillary region(4,14). Botulinum toxin is effective but expensive and requires many injections in the long-run to maintain its effect(6-8). Considering some factors, such as shorter sickness leave, faster return to activities of daily life and long-lasting results, the surgical treatment of hyperhidrosis by vacuum curettage has stood out in the modern armamentarium(14-15).

OBJECTIVE
This study aimed to report the experience gained in treating axillary hyperhidrosis with vacuum curettage and to evaluate the results attained.

METHODS
Thirty-seven patients (23 female and 14 male; age range of 14-48 years), a total of 73 axillae, underwent vacuum curettage to treat axillary hyperhidrosis, from May 1999 to December 2005.

In this sample, 36 patients received bilateral treatment and one individual received unilateral therapy for having been previously submitted to transthoracic endoscopic sympathectomy for palmar and axillary hyperhidrosis, which led to good results in the palmar region and left axilla. Two patients presented associated bromidrosis.

The postoperative follow-up ranged from two to 60 months (mean 13.58 months).

The aspirate was sent to pathological examination to confirm the presence of eccrine and appocrine glands.

Based on the reason for patients looking for treatment (interference in their quality of life), the evaluation criterion used to analyze the results was self-assessment, by means of a validated questionnaire called “The Dermatology Life Quality Index” (DLQI)(2). This questionnaire comprises 10 questions about six different aspects of quality of life: signs and symptoms (questions 1 and 2), daily activities (questions 3 and 4), leisure (questions 5 and 6), work/school (question 7), personal relationships (questions 8 and 9) and treatment (question 10).

Each question is scored from 0 to 3, and the maximum score is 30 (worst result)(2). Patients who considered the questions not relevant or who did not answer them received a zero score in that item.

Statistical analysis was performed by means of Z score and the level of significance was p < 0.05.

TECHNIQUE
Patient positioning and preoperative marking: the patient was placed on supine position, the arms abducted at 90° and the hands placed close to the head. The hairy axillary area was marked with a 1-cm peripheral margin, because it is known there is a close relation between axillary hair and higher density of eccrine and appocrine glands. In patients with long hair, hair was shaved before marking.

ANESTHESIA
All patients were submitted to surgery under infiltrative local anesthesia with 0.5% lidocaine, adrenalin 1:16000 IU and 8 ml of sodium bicarbonate 8.4%; the mean volume infiltrated was 35 ml per axilla. The infiltration was performed in the superficial subcutaneous layer in the marked area and in a 2-cm-wide strip surrounding the axilla. After infiltration, we waited for 10 minutes in order to obtain vasoconstriction. The patients who chose to have reduced level of consciousness (4 patients) were submitted to intravenous sedation by an anesthesiologist, at the hospital.

SURGICAL TECHNIQUE
A 0.5-cm incision was made 2-cm apart from the marked area, in the anterior axillary crease. Using a 5-mm diameter cannula we developed (Figures 1 and 2), with a flat blunt tip (duck’s beak) and a 6-mm x 4-mm rectangular orifice in its axis, having moderately sharp proximal and distal edges, we performed tunneling without negative pressure in the superficial subcutaneous layer in the area previously marked.

After concluding the tunneling and keeping the skin and deep layers connected by means of vascular elements and fibrous bundles, we connected the suction device with a 60-cm-Hg negative pressure. The cannula orifice was directed at the skin and the vacuum curettage initiated.

Likewise liposuction, the intra-operative evaluation and control of vacuum curettage was carried out by analyzing the two-finger-pinch skinfold before the surgical procedure (Figure 3) and immediately after (Figure 4).
At the end of the procedure, a simple suture was made with two or three stitches using mononylon 5-0 suture, and a dressing was placed. Later, the patient was sat down, and a cotton pad was placed on the axillary pit to compress the operated area through the arm’s weight. The patient was kept under observation for approximately 90 minutes in case of exclusive local anesthesia, and for six hours when anesthesia was associated with sedation. After recovery the patients were discharged and sent home.

**POSTOPERATIVE CARE**

Dressing was removed for shower and definitely removed after 48 hours. Suture was removed on the 7th postoperative day. Relative restricted motion of the arm was prescribed for three days. In cases of larger induration and skin contraction in the area submitted to curettage, manual massage was prescribed twice a day, lymphatic drainage, three times per week, and slow and gradual hyperextension of the arm, several times per day, in order to speed up recovery of the operated area.

**RESULTS**

In this series of 37 patients submitted to vacuum curettage, there was a predominance of young individuals (mean age of 26.08 years) and females (62.16%).

After applying the “DLQI” to 37 patients, a mean score of 15.4 (10-20) was obtained in the preoperative period and of 2.0 (1-10) in the postoperative period. The maximum score was 30 points, which represented the worst quality of life according to the index used. The difference between the pre- and postoperative scores was, in average, 13.4 (1-20).

Analyzing the mean variation between pre- and postoperative scores, the Z score showed improved quality of life of these patients after surgical treatment (p < 0.05).

The postoperative complication was serosanguineous collection in two axillae of two male patients, which was observed on the 5th postoperative day and treated by percutaneous puncture and aspiration. The procedure was repeated on the 10th postoperative day and did not interfere in the final result. Ecchymosis occurred in 100% of cases and was considered a common postoperative finding in this procedure, like in liposuction.

Small epitheliolysis areas were observed (diameter <1.5 cm) in 8 patients (15 axillae) with spontaneous resolution.

Three patients had recurrence – two were bilateral and one, unilateral. They underwent another vacuum curettage with resolution of the event. These were the first patients of our series who were treated using a
different cannula, which did not have the current features. Only one patient had skin necrosis (1.5-cm diameter) and topical collagenase was applied resulting in healing by second intention.

Eight patients presented transitory hyperchromia in the operated region.

There was no case of infection or alopecia in the area submitted to surgery. No postoperative lymphedema was observed and all patients had no restricted motion.

The presence of glandular tissue was confirmed in the aspirates sent for pathological examination.

**DISCUSSION**

Individuals suffering from hyperhidrosis have physical and psychic problems. The regions most often affected are palms, feet, axillae and face. It is generally an idiopathic disorder, characterized by a constitutional vasomotor instability mediated by stimuli of sympathetic cholinergic fibers, which result in increased sweating and, very often, body odor\(^{(14)}\). The ideal treatment should be effective, safe, long-lasting and cheap\(^{(1,12,14)}\).

Surgical treatment by means of local excision of eccrine and apocrine glands has been much prescribed and produces good results although causing large scars.

More recently, transthoracic sympathectomy was developed with good results in the palms, isolated, or associated with the axillae; however, the success rates are low for the axillary region alone. Moreover, potential complications of this procedure should be taken into account, such as compensatory hyperhidrosis, pneumothorax, hemothorax, Horner syndrome and anesthetic events\(^{(1,9,14)}\).

Vacuum curettage has been successfully used for being a low-cost, low-morbidity and effective treatment in the long run\(^{(14-5,14)}\).

In 2002, Proebstle et al. published an article evaluating the effectiveness of curettage in 42 patients. The pre- and postoperative baseline sweating values were determined and confirmed the method was effective to reduce local production of sweat\(^{(15)}\).

Other studies reported in the literature corroborated these findings and suggested the main indications of the technique would be patients with predominantly axillary hyperhidrosis and who wish to have a less invasive and highly successful procedure\(^{(15)}\).

We observed in our series improved quality of life of patients undergoing the procedure, apart from reduce morbidity; hence, both patients and physicians felt more comfortable.

**CONCLUSION**

The advantages of treating axillary hyperhidrosis by vacuum curettage are related to the high therapeutic success, low morbidity, minimum postoperative restriction, fast return to daily activities, small scar in an area not usually exposed and possible re-intervention if the initial result is not satisfactory.

Based on data presented, we concluded that vacuum curettage improves quality of life of patients with axillary hyperhidrosis and could be the first surgical treatment option.

**REFERENCES**