Thoracoscopic sympathicotomy in children for the treatment of palmar and axillary primary focal hyperhidrosis

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Thoracoscopic sympathicotomy in children for the treatment of palmar and axillary primary focal hyperhidrosis: Caution advocated☆

Dear Editor,

We read with great interest the article by Vasconcelos-Castro et al. reporting the outcome of 23 patients undergoing thoracoscopic sympathotomy for primary palmar hyperhidrosis (PFH) [1]. They stated that bilateral two-port thoracoscopic sympathotomy is a safe and effective treatment for PFH in patients aged 11–19 years old. Recurrent hyperhidrosis was not observed after a median follow-up of 12 (2–69) months. Therefore, the authors suggested that surgical treatment should be offered to children as early as they complain of daily life impairment owing to their excessive sweating.

The article deserves some important comments. In this study, the Hyperhidrosis Disease Severity Scale (HDSS) was used both pre- and postoperatively. Three patients (aged 15, 16 and 17 years old, respectively) reported a preoperative HDSS of 2 ('My sweating is tolerable but sometimes interferes with my daily activities'), classifying PFH as mild/moderate, and preoperative HDSS was not obtained in two patients. The HDSS is a valuable asset for careful patient selection and quantification of perceived severity of PFH [2]. Therefore, a HDSS should be obtained preoperatively in every patient, and, especially in the pediatric population, severe interference of PFH with daily life as indicated by a preoperative HDSS of 4 ('My sweating is intolerable and always interferes with my daily activities') should be mandatory to qualify for surgery.

The operative technique used by the authors for thoracoscopic sympathotomy/sympathicotomy is a one-stage biportal approach. We and others have previously shown that a bilateral, one-stage, single-port sympathicotomy (BOSS) is feasible and safe [3,4]. Therefore, we advocate a single-port approach to optimize postoperative cosmetics and pain control.

In addition, the level of sympathotomy/sympathicotomy was done according to surgeons' preference. As shown in Table 1, different levels were variably used hindering interpretation and comparison of the results. Three cases underwent bilateral sympathicotomy at R2-level. As rightly mentioned by the authors, sympathicotomy at R2-level is abandoned due to increased risk of postoperative Horner's syndrome. This insight was not conceived in 2016, but as early as 2003 [5].

Finally, and most importantly, we recently published our results of bilateral, one-stage, single-port sympathicotomy (BOSS) for the treatment of intolerable palmar and axillary PFH (HDSS of 4) in children up to and including 16 years of age and, in this study, we found a high recurrence (50%) and reoperation rate (35.7%) [6]. Reoperations were associated with placement of additional thoracoscopic ports, intraoperative placement of pleural drains, and prolonged air leak [6]. Our high recurrence and reoperation rates following thoracoscopic sympathicotomy in children up to and including 16 years of age are not consistent with relatively recently published research, including the above-mentioned publication by Vasconcelos-Castro et al., which showed good results with no recurrence of PFH and low rates of compensatory sweating during follow-up advocating early surgical treatment in children with PFH [1,7]. However, these studies included 'children' with ages up to 19 and 21 years, respectively. We hypothesize that the high recurrence rate of PFH following thoracoscopic sympathicotomy in children, as found in our study, might be attributed to so-called neuroplasticity and neuroregeneration by Schwann cell plasticity, which is especially seen in young children [8,9]. This hypothesis might also explain, why recurrence of PFH was seen to a lesser extent in previous studies including children and adolescents with ages up to 19 and 21 years, respectively [1,7]. The predominantly found bilateral recurrence pattern (n = 6; 85.7%) supports this neuroregeneration hypothesis as well. Technical inadequacy, although possible, is regarded highly unlikely since excellent results were obtained in our adult cohort using the same operative technique (BOSS) [3].

Despite the high recurrence and reoperation rates in our study, overall patient satisfaction was high with a median satisfaction score of 7.5 (interquartile range of 1.75; range 4–9) [6]. Accordingly, Mol et al. recently showed high postoperative satisfaction (average score of 9) despite a high rate of compensatory sweating (65%) following thoracoscopic sympathicolysis in children up to and including 14 years of age [10].

To answer the question of the authors ('How young is too young?'), we think 16 years of age is too young. We advocate great caution when considering sympathetic denervation in children up to and including 16 years of age for the treatment of palmar and axillary PFH [6]. An exception can only be made when PFH strongly interferes with the child's development and preoperative HDSS is 4, classifying PFH as intolerable. Ideally, surgical treatment of palmar and axillary PFH is postponed to the age of 17 years or older, especially in view of the excellent results of BOSS for the treatment of palmar and axillary PFH in adults [3,6].

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☆ **Conflict of Interest:** All authors declare that they have no conflict of interest.

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