

Thoracoscopic Surgery for Hyperhidrosis

in the Presence of Congenital Azygous
Lobe and Its Suspensory Web

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The congenital azygous lobe with its suspensory azygous web is an anatomic variant that can obscure visualization of the superior sulcus of the right hemithorax during various thoracic surgical procedures. Four patients who underwent thoracoscopic sympathectomy for massive palmo-plantar hyperhidrosis were discovered to have this irregularity. All patients underwent curative and uneventful sympathectomy procedures despite the presence of the aberrant azygous lobe and web. The precise anatomic details and surgical management are described here in detail. (Tex Heart Inst J 2009;36(1):1-4)

In normal human anatomy, the azygous vein courses cephalad along the vertebral column, then arches forward above the root of the lung. It then enters the superior vena cava, which enters the pericardium and right atrium. During human embryologic development, the right lung bud must pass laterally under the arch formed by the right posterior cardinal vein (future azygous vein). Failure of the lung bud to clear this cardinal vein results in the splitting of the right lung. The vein becomes encased by the developing lung tissue, and that portion of the right upper lobe which remains medial to the vein is the "azygous lobe."¹ The azygous vein remains suspended within a parietal pleural membrane, the "mesoazygous" web (Fig. 1). This mesoazygous web and the azygous vein thus run between the right upper lobe proper and the azygous lobe of the lung (in reality a part of the upper lobe of the lung).

Bilateral thoracoscopic sympathectomy is the surgical procedure of choice in the management of massive, refractory palmar hyperhidrosis.²⁻⁴ Patients who undergo the procedure at our center have a truncal sympathectomy done endoscopically, generally at or near the level of the 2nd or 3rd thoracic ganglion (T2 or T3), and in some instances the 4th level (T4) as well.² This is accomplished by cautery transection of the nerve trunk directly over the costal head: that is, a "T2 sympathectomy" is transection of the sympathetic chain over the 2nd costal head, a "T3 sympathectomy" is transection over the 3rd costal head, and so forth. Short bursts of the cautery are used to minimize thermal and electric spread along the nerve. To be anatomically precise, we should make it clear that we actually preserve the ganglion itself, which is immediately below the costal head. We believe that this method is simpler and requires less dissection than does clipping or ganglionectomy and that it might therefore lessen the level of compensatory hyperhidrosis.

Successful upper-thoracic sympathectomy surgery requires a clear and unobstructed view of the superior mediastinum and of the sympathetic nerve and ganglia in relation to the costal heads posteriorly, the subclavian artery superiorly, and (on the right side) the superior vena cava medially and the azygous vein inferiorly. The presence of a congenital mesoazygous web—which suspends the azygous vein and splits off an azygous lobe of the lung—can completely obscure the view of the superior sulcus that is necessary for a successful sympathectomy procedure.

Four cases collected from the author's experience in thoracoscopic sympathectomy for hyperhidrosis are reported herein. The patients' profiles and anatomic features are described in detail, as is the surgical management.

Case Reports

Patient 1

A 24-year-old white woman who had experienced massive palmo-plantar and axillary hyperhidrosis since early childhood presented with sweat dripping from her hands.

Key words: Azygous vein/abnormalities; endoscopy; hand; hyperhidrosis/surgery; lung/abnormalities; patient satisfaction; patient selection; sympathectomy/methods; thoracic surgery, video-assisted; thoracotomy

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