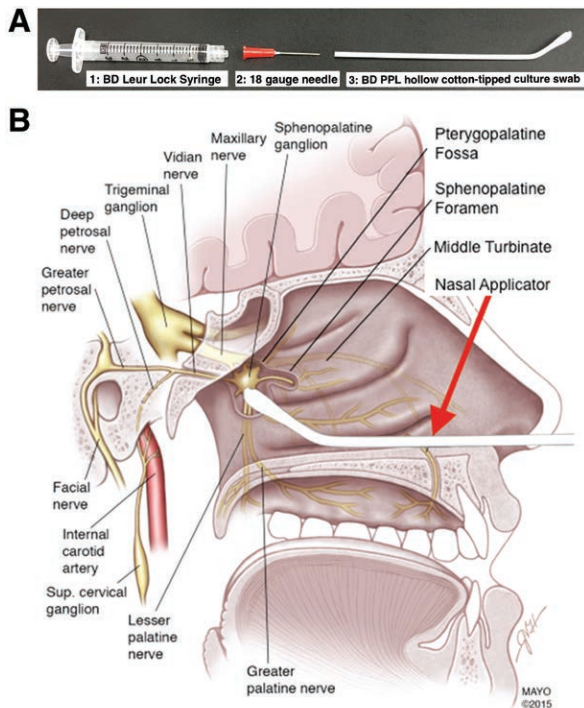


# Images in Anesthesiology: Modified Cotton Swab Applicator for Nasal Sphenopalatine Ganglion Nerve Block

Taras Grosh, M.D., Diana Ayubcha, D.O.



THE modified cotton swab applicator assembled from ubiquitous components found in most operating rooms is an alternative to costly commercial devices (Tx360 [Tian Medical, LLC, Grayslake, Illinois] and Sphenocath [Dolor Technologies, LLC, Salt Lake City, Utah]) for sphenopalatine ganglion nerve blocks. Anesthetizing the sphenopalatine ganglion is both diagnostic and therapeutic for cluster, migraine,<sup>1,2</sup> and postdural puncture headaches.<sup>2</sup> The largest of the four parasympathetic ganglions associated with the trigeminal nerve,<sup>3</sup> the sphenopalatine ganglion, sits in the pterygopalatine fossa close to the sphenopalatine foramen located superior and deep to the posterior attachment of the middle turbinate.<sup>3</sup>

Traditionally, a cotton swab applicator is saturated in viscous local anesthetic. With the patient supine, the applicator is placed approximately 6 cm into each nares for 5 min, removed, and then repeated three times.<sup>2</sup> Repetitive insertion and removal can be irritating to the surrounding nasal mucosa. Patients remain supine for the duration of the 15-min procedure and then resume their daily activities.

Image A depicts the components of the applicator. The 3-ml syringe is filled with local anesthetic, attached to an 18-gauge, 25-mm blunt-fill needle, and inserted into a hollow culture swab with the end cut off. The cotton swab end is curved approximately 45° by the provider to facilitate placement of

1/4-cc aliquots of a long-acting local anesthetic above the posterior attachment of the middle turbinate superficial to the sphenopalatine ganglion as seen in image B. Anesthesiologists should recognize the utility and simplicity of the device and procedure as alternative treatment of postdural puncture headaches and migraine headaches.

In image B, the sagittal view drawing through the nasopharynx demonstrates the sphenopalatine ganglion (reproduced and modified with permission of John Wiley and Sons from Robins *et al.*: The Sphenopalatine Ganglion: Anatomy, Pathophysiology, and Therapeutic Targeting in Headache. *Headache* 2016; 56: 242, fig. 1).

## Competing Interests

The authors declare no competing interests.

## Correspondence

Address correspondence to Dr. Grosh: taras.grosh@uphs.upenn.edu

## References

1. Cady R, Saper J, Dexter K, Manley HR: A double-blind, placebo-controlled study of repetitive transnasal sphenopalatine ganglion blockade with tx360® as acute treatment for chronic migraine. *Headache* 2015; 55:101–16
2. Kent S, Mehaffey G: Transnasal sphenopalatine ganglion block for the treatment of postdural puncture headache in obstetric patients. *J Clin Anesth* 2016; 34:194–6
3. Láinez MJ, Puche M, García A, Gascón F: Sphenopalatine ganglion stimulation for the treatment of cluster headache. *Ther Adv Neurol Disord* 2014; 7:162–8