Endoscopic Vidian Neurectomy

- Commentary on: "Long-term outcomes of functional endoscopic sinus surgery with selective vidian neurectomy for chronic rhinosinusitis with nasal polyps combined with allergic rhinitis and asthma"
- Innovative surgical approaches for chronic rhinitis: nasal neurectomy mechanisms, techniques, and clinical outcomes
- Efficacy of Additional (Selective) Vidian Neurectomy in Treating Chronic Rhinosinusitis with Nasal Polyp: A Systematic Review and Meta-Analysis
- The Clinical Efficacy and Safety of Endoscopic Vidian-Branch Neurectomy in Intractable Allergic Rhinitis
- Long-term outcomes of functional endoscopic sinus surgery with selective vidian neurectomy for chronic rhinosinusitis with nasal polyps combined with allergic rhinitis and asthma
- Efficacy of vidian neurectomy in treating chronic rhinosinusitis with nasal polyps combined with allergic rhinitis: A systematic review and meta-analysis
- Vidian Neurectomy
- Endoscopic Vidian neurectomy for treating postcoital unilateral hydrorhinorrhea: A case report and literature review

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Surgical Approach

Transnasal endoscopic approach: The most common modern technique due to its minimally invasive nature.

Transantral approach: Access through the maxillary sinus, used less frequently.

The vidian nerve is located in the pterygoid canal, which is accessed through the sphenoid sinus or lateral nasal wall.

Nerve Transection:

The vidian nerve is carefully identified and transected to interrupt parasympathetic signals to the nasal mucosa.

Anesthesia:

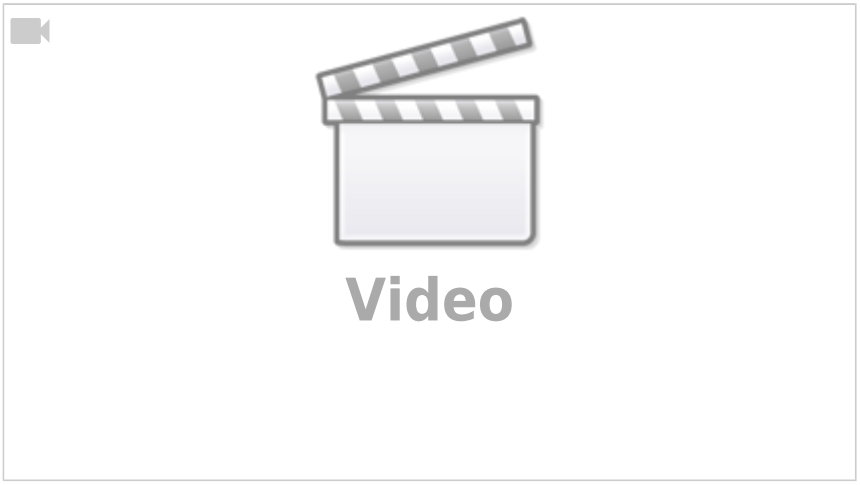
The procedure is typically done under general anesthesia.

Outcomes

Effectiveness:

Most patients experience significant improvement in nasal symptoms, particularly rhinorrhea. Relief from refractory rhinitis in appropriately selected patients.

Videos



Prospective observational studies

Thirty patients with troublesome intractable rhinitis underwent posterior nasal neurectomy. Pre- and postoperative Visual Analogue Scale (VAS) and Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) scores were compared to study the improvement in nasal and ocular symptoms. Each domain of these scores was studied separately.

The mean reduction in the VAS was from 6.76 ± 0.884 preoperatively to a mean of 5.33 ± 0.675 at 1 month, 3.81 ± 0.462 at 3 months and 2.53 ± 0.405 at 6 months postoperatively. The mean RQLQ score was reduced from preoperative 4.22 ± 1.091 to a mean of 3.82 ± 1.072 at 1 month, 3.55 ± 1.063 at 3 months and 3.18 ± 1.173 at 6 months postoperatively. Thus, a statistically significant improvement was seen in both mean VAS and RQLQ scores ($P < 0.001$), and also when each domain was compared separately.

Endoscopic posterior nasal neurectomy may be an effective way of improving symptoms in patients with intractable AR and freeing them from long-term medical regimes, thereby improving their quality of life [1)].

The study provides promising evidence supporting posterior nasal neurectomy as an effective intervention for intractable allergic rhinitis. However, its small sample size, lack of controls, and short follow-up period limit its impact. Further research with more rigorous methodology and a focus on long-term outcomes is needed to confirm its role as a definitive treatment.

Comparative observational studies

A study aimed to evaluate the efficacies of endoscopic vidian neurectomy (VN) and highly selective vidian neurectomy (HSVN) for the treatment of allergic rhinitis (AR) and vasomotor rhinitis (VMR). All AR and VMR patients were divided into two groups, Group VN and Group HSVN. The efficacy evaluation methods were visual analog scale (VAS), rhinoconjunctivitis quality of life questionnaire (RQLQ), and medication score. The efficacy evaluations were used to assess patient rhinitis

symptoms, quality of life and drug usage. The time points of follow-up period were preoperative, 3 months, 6 months, 1 year, 2 years, and 3 years post operation. By analyzing pre- and postoperative VAS, medication score and RQLQ score, the results showed that rhinitis symptoms and quality of life in both VN and HSVN groups were significantly improved at 3 years, and the rate of improvement decreased gradually with time. Post operation, there were no significant differences in VAS and medication scores between the VN and HSVN groups. With respect to RQLQ, postoperative 2 years and 3 years improvements in sleep disorders, non-nasal symptoms and eye symptoms were significantly greater in the HSVN group than in the VN group. Improvements in rhinitis symptoms and quality of life in AR and VMR were sustained by VN and HSVN until 3 years post operation, with greater quality of life improvements in the HSVN group [2)].

This study provides valuable insights into the efficacy of VN and HSVN for AR and VMR, with HSVN offering superior improvements in specific quality of life domains. However, methodological limitations, such as lack of randomization and absence of adverse event reporting, reduce its overall impact. Rigorous future research is necessary to validate these findings and refine clinical guidelines for the surgical management of rhinitis.

Case reports

A case of honeymoon rhinitis consisting of a 48 years-old male patient with left unilateral nasal discharge mainly present during sexual intercourse and orgasm. Exploratory nasal endoscopy, CT and MRI were normal. Beta-trace test and all allergy tests were negative. The response to antihistamines and corticosteroids had been negative. A Vidian endoscopic neurectomy was carried out.

Using Vidian neurectomy, a complete sympathetic-parasympathetic denervation of the nasal mucosa was achieved. After a follow-up of 15 days, the patient stated that his symptoms had improved. Nasal obstruction, sneezing, and rhinorrhea had decreased without showing symptoms either in the morning or during sexual intercourse. After two years of follow-up, the symptoms were still resolved without any complaints related to his preoperative “honeymoon rhinitis.” Anatomical structural relationships between the activation of the autonomic nervous system in the pelvic region and the stimulation of sympathetic-parasympathetic neurons in the nasal mucosa is unknown. However, the use of Vidian neurectomy for treating these cases reveals they may be mediated by a possible disbalance of the autonomic activity.

This case report gives background on the autonomic innervation of the nasal mucosa and how its imbalance causes a clinical condition that we suggest it could be solved by the Vidian neurectomy when other therapeutic measures fail [3)].

This case report effectively highlights a rare presentation of rhinitis and demonstrates the potential role of Vidian neurectomy as a treatment for autonomic-driven nasal conditions. However, the findings are limited by the lack of pathophysiological clarity, single-case design, and absence of discussion on complications or alternative therapies. While the report opens new avenues for research and clinical application, robust evidence and a deeper understanding of autonomic pathways are needed before Vidian neurectomy can be widely recommended for such cases.

1)

Rajdev S, Goel K, Bhagat S, Sahni D, Sharma DK, Yadav V. Is posterior nasal neurectomy the definitive treatment for intractable allergic rhinitis: A prospective study. World J Otorhinolaryngol Head Neck Surg. 2023 Oct 10;10(4):290-295. doi: 10.1002/wjo2.133. PMID: 39677059; PMCID: PMC11634695.
2)

Sun S, Chen A, Shi L, Wan Y. Two types of vidian neurectomy show efficacy in treating allergic rhinitis and vasomotor rhinitis. Sci Rep. 2024 Nov 8;14(1):27303. doi: 10.1038/s41598-024-78116-9. PMID: 39516526; PMCID: PMC11549493.
3)

Massegur H, Carrera A, Gras-Cabrerizo JR, Tubbs RS, Reina F. Endoscopic Vidian neurectomy for treating postcoital unilateral hydrorhinorrhea: A case report and literature review. Int J Surg Case Rep. 2024 Dec 18;126:110749. doi: 10.1016/j.ijscr.2024.110749. Epub ahead of print. PMID: 39708722.