

VIDIAN NEURECTOMY

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ÖZET: Vidian nörektomi vidian sinir ve sfenopalatin ganglionu uygulanan mikroşirürjikal bir girişimdir. Vidian nörektomi medikal tedaviye dirençli allerjik faktörlerin elimine edildiği vasomotor rinite uygulanabilir. Ayrıca diğer medikal tedavilerin başarılı olmadığı tekrarlayan ve rahatsızlık veren nasal poliposis durumunda da uygulanır. Sfenopalatin nöraljiler için başlangıçta kesin bir teşhis yapılmalıdır. Ameliyat için hasta seçim semptomların derecesine ve tüm sistemik muayene ve laboratuvar araştırmalarının değerlendirilmesine göre yapılır. Ameliyat yukarıda tanımlanan endikasyonlar içinde burun tıkanıklığı, burun akıntısı, nöraljinin kontrolünde etkindir. Bu ameliyatın komplikasyonlarının, özellikle orbital olanların önlenmesi amacı ile pterigopalatin fossa anatomisi gözönüne alınarak dikkatli ameliyat yapılmalıdır. Doğru endikasyon ve iyi yapılan ameliyat güvenilir, iyi neticeler verir.

ABSTRACT: M.Z. UĞUZ, T. KİRAZLI, H. KATILMIŞ, Ear Nose, and Throat Service, State Hospital, İzmir, Vidian Neurectomy.

Vidian neurectomy is a microsurgical intervention which is applied to vidian nerve and sphenopalatine ganglion. Vidian neurectomy can be applied to vasomotor rhinitis in which allergen factors are eliminated and which is resistant to medical treatment. It is also applied to recurring and disconcerting nasal poliposis in which other treatment modalities are unsuccessful. For sphenopalatine neuroigias, at first certain diagnosis must be made. Selection of the patients for surgery is made according to the degrees of the symptoms and based upon evaluation of the patients as a whole with systemic examinations and laboratory investigations. Operation itself is effective for control of the nasal obstruction, nasal secretion, neuralgias within the indications described above. Because of the peculiar anatomy of the pterygopalatine fossa, operation must be made carefully to prevent the complications, especially the orbital ones. In cases in which operation is obviously indicated and well performed, the results are reliable and good.

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Anahtar sözcükler: Vidian Sinir, Vidian nörektomi.
Key words: Vidian nerve, Vidian neurectomy.

Some cases of vasomotor rhinitis, nasal polyposis and sphenopalatine neuralgia are known to be resistant to all medical treatment (1). A careful distinction and patient selection in those cases will lead to a successful vidian neurectomy with the aid of an operating microscope (1,2,3). Nine cases of vidian neurectomy are presented in this report.

MATERIAL AND METHOD

Patient Selection: The patients were selected from the files of our outpatient department between the years 1982 and 1988. Of the nine patients, seven were females and two were males. Ages were between eighteen and thirty-five years where the mean age was twenty-four. Nasal obstruction, watery and profuse nasal secretion and anosmia were observed in all patients being quite severe in one. Nasal polyposis was detected in two cases.

The following criteria had been taken into consideration before establishing a surgical indication:

1. There should be no improvement or any benefit from various medical treatments previously such as antihistaminics, steroids, detection of the allergens and desensitization studies.
2. Complaints of the patients had to be to a limiting degree from his daily activities.
3. ENT and systemic examination had to be normal or there should be no satisfactory explanation for the complaints of the patient.

Pre and postoperative complaints and findings of the patients were compared. Nasal obstruction and hypertrophy of the turbinates, degree and nature of the nasal secretion, colour changes in the mucosa, complaints of nasal obstruction and headache and their comparison were questioned and noted pre and postoperatively.

Preoperative production capacity of the turbinates were evaluated by local application of pantocaine and adrenaline solution and irreversible changes were so discarded. In all cases turbinates showed some hypertrophy where the mucosa was purple like in colour and covered with watery secretion. Postoperative controls had been carried daily for the first ten days then followed monthly, three monthly and six monthly controls thereafter. All patients had pre and postoperative Schirmer's

tests so that the deduction of the lacrimal gland secretion was detected. Pathological investigation had been performed to confirm that the removed specimen was a nerve tissue belonging to the vidian nerve (Fig. 1,2,3,4). The operating microscope had been used in all cases and the pterygopalatine fossa was approached by transantral route.

Under general anesthesia gingivobuccal sulcus was excised and periosteum was elevated. Anterior wall of the maxillar sinus was exposed and fossa canina detected. Antrum was penetrated with the aid of a chisel currettes or drill. Anterior wall of the antrum was removed grossly where the infraorbital nerve was preserved. A mucosal flap where the base is being lateral or inferior was elevated from the posterior wall of the antrum (Fig 5).

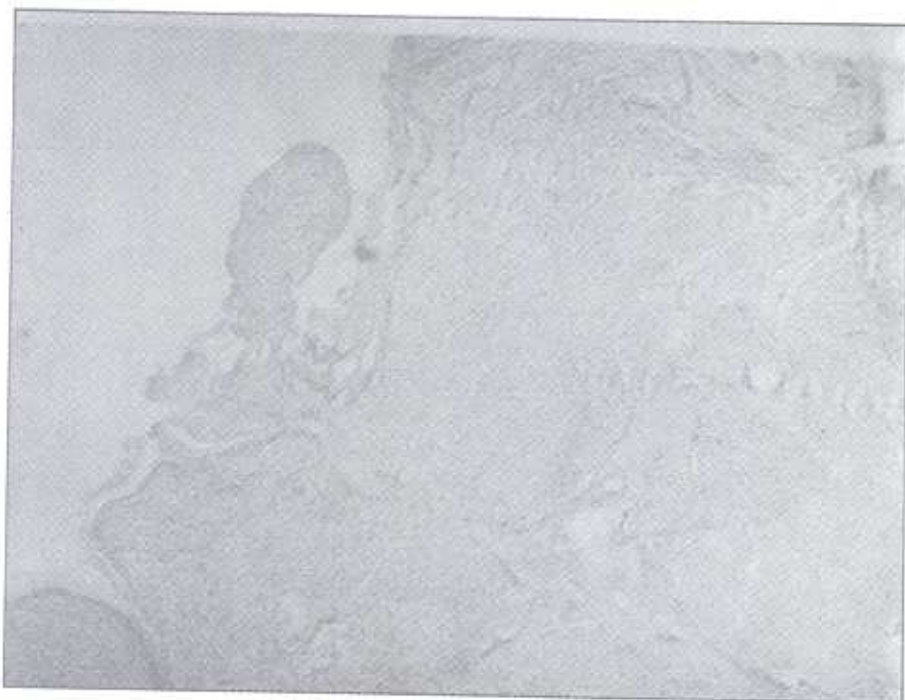


Fig 1. Case 5, H.C., Female patient, Prot.No.:394/83 Vidian nerve section, Hematoxylene eosine, 10x20.



Fig 2. Case 6, M.I., Female patient, Prot.No:1294/83 Vidian nerve section, Hematoxylene eosine, 10x4.



Fig 3. Case 7, E.S., Female patient, Prot.no: 1387/83 Vidian nerve section, Hematoxylene eosine, 10x4.



Fig 4:Case 8, S.Ö., Male patient, Prot.No.: 163/83 Vidian nerve section, Hematoxyleme, 10x20.

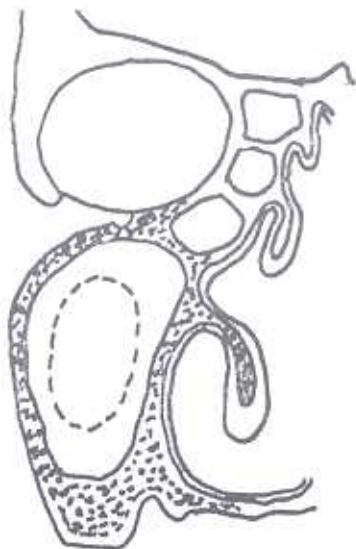


Fig 5:Outlining the posterior antral window

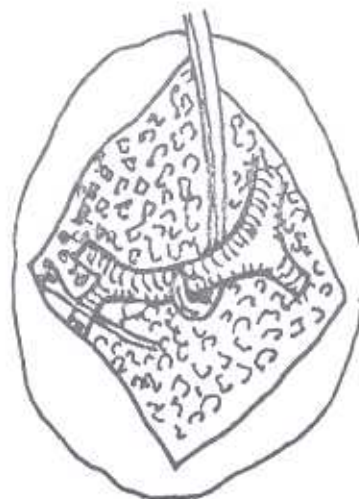


Fig 6:Dissecting the maxillary artery

At this stage of the surgery the operating microscope was used. Thin posterior wall was penetrated with a small chisel and dissected from periosteum. Posterior wall was widened with a Hajek or Citelli bone cutting forceps.

Internal maxillary artery pulsations were observed following the removal of the fatty tissues (Fig 6). This artery usually overlies the sphenopalatine ganglion thus obstructing the exposure of the vidian canal in the inferior and medial parts. Ligation and severing of the artery near the origin of infraorbital artery was performed in such cases. The vertical bone crest separating the foramen rotundum from the vidian canal could easily be detected following the retraction of the severed artery laterally (Fig 7). Hereafter sphenopalatine ganglion was retracted forward with a right angled hook and the emerging vidian nerve was detected and dissected with a small curved knife (Fig 8). When ganglion was to be removed, it was held with the forceps, carefully dissected from the nerve endings surrounding it and then removed. Ganglion cells and nerve cells could easily be seen on frozen section preparations. Vidian canal was then filled with bone wax or small bone pieces and cauterisation was avoided to prevent orbital complications. Following hemostasis, posterior mucosal flap was laid over the operation field and covered with gelfoam. A nasotracheal window was created and surgical intervention was then terminated. Postoperative care was very similar to Caldwell operations.

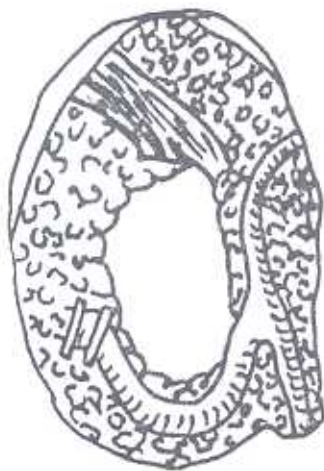


Fig 7:Exposure of the foramen rotundum Fig 8:Cutting the vidian nerve

RESULTS: Postoperative edema, swelling over the cheeks and paresthesia on maxillary region were observed in all cases. Dryness of the eyes and reduction of the lacrimal secretion on the operated side were also detected in the early postoperative period. These decreased by the end of the third postoperative week and disappeared completely in all patients after six weeks. Reduction of the turbinates was observed bilaterally and was more obvious on the operated side. Nasal secretion dramatically decreased and more or less disappeared completely.

The patients were all free from nasal secretion, nasal obstruction and headache complaints. Olfactory function was gained. We have also noticed the reduction of nasal polyps in the two cases who had nasal polyposis previously. The only disabling and discomforting complication we have detected was an oculomotor palsy which appeared in one case. Histological views of the nerve tissues belonging to the patients are shown in Fig. 1,2,3,4.

DISCUSSION: The ENT Surgeon may be concerned with one or several different procedures within the pterygopalatine fossa (1,2,3,4) mentioned below:

1. Maxillary artery ligation
2. Maxillary neurectomy
3. Sphenopalatine ganglionectomy
4. Vidian neurectomy
5. Various

Indications for vidian neurectomy:

- a. Intractable secreto-motor rhinopathy
 - Cholinergic
 - Allergic
- b. Senile rhinorrhea
- c. Chronic epiphora
- d. Crocodile tears
- e. Recurrent nasal polyposis (1,3,4)

We have operated seven patients with vasomotor rhinitis and two patients with recurrent nasal polyposis.

Different authors using several routes as follows, have accomplished vidian neurectomy (4,5,6,7,8,9,10):

1. Transantral

- a. Classic (Golding-Wood, 1961)
- b. Subperiosteal (Nomura, 1974)

2. Transnasal.

- a. Transseptal (Minnis and Morrison, 1971)
- b. Direct (Patel and Gaikaw, 1975).

3. Transpalatal (Chandra, 1969, Mostafa Abdel-Latif and el-Din, 1973)

In our cases we used the classic transantral technique. This route not only gave us the easiest way for exposure but also the successful results as mentioned in the case results. Little swelling of the cheeks occurred and it took 5 or 6 days for relieving in all patients but those were not more troublesome than that of a simple Caldwell-Luc operation.

As mentioned by the other authors (4,5,11) some numbness of the palate and especially upper lip occurred in three patients that lasted for three or four weeks.

Dryness of the eyes and reduction of the lacrimal secretion on the operated side were also detected in early postoperative period in all cases. We have not experienced continuous and troublesome neuralgic pain over the infraorbital area in our cases as were mentioned in literature (1,4,5,11).

However, external opthalmoplegia was observed in one case. Probably it was caused by overpenetration of the pterygoid canal. This was also seen in three patients in earlier series of Golding-Wood and it has been recorded by others, also (11,12).

Including the case who was followed for six years, we haven't experienced any symptomatic relapse in any patient. However, partial return of symptoms one or two years after the operation may be seen in two or three percent of the patients (11).

CONCLUSION : Vidian neurectomy can be performed successfully within the range of indications and criteria mentioned above. Surgical intervention is performed by use of microsurgical techniques and operating microscope. Probably serious complications of the orbital region can be prevented and managed with the aid of the above mentioned criteria. Since there is a possibility for bilateral vidian nerve neurectomy, there should at least be 6 months period in between two interventions. When criteria are strictly followed, there is hardly any difference from the Caldwell-Luc operations in regard of the complications.

REFERENCES

1. English, M.G.: Otolaryngology, Harper and Row Publishers Philadelphia, 1985; Vol. 2,35:1-27.
2. Montgomery, W.W.: Surgery of the Upper respiratory System, Lea and Febiger, Philadelphia, 1979; Vol. 1, pp. 227-235.
3. Ballantyne, J.C. Harrison, D.F.N.: Rob and Smith's Operative Surgery. Nose and Throat, Fourth Edition, Butterworths, London, 1986; pp. 126-138.
4. Ballantyne J.C.: Scott-Brown's Diseases of the Ear, Nose, and Throat Fourth edition, Butterworths and Co., London, 1979; pp.442-481.
5. Golding-Wood, P.H.: Observations on petrosal and vidian neurectomy in chronic vasomotor rhinitis, J.Laryngol. Otol. 1961; 75:232.
6. Nomura, Y.: Vidian neurectomy: Some technical remarks, Laryngoscope, 1974; 84: 578.
7. Minnis, N.L. Morrison, A.: Transseptal approach for vidian neurectomy J.Laryngol. Otol. 1971; 85:255.
8. Patel, K.H. Gaikwad, G.A.: Bilateral transnasal cauterisation of the vidian nerve in vasomotor rhinitis. J. Laryngol. Otol. 1975; 89:1291.
9. Chandra, R.: Transpalatal approach for vidian neurectomy, Arch. Otolaryngol. 1969; 89: 542.
10. Mostafa, N.M. Abdel-Latif, S.M. el-Din, S.B.: The transpalatal approach for vidian neurectomy in allergic rhinitis, J. Laryngol. Otol. 1973; 87:773.
11. Golding-Wood, P.N.: Vidian neurectomy: Its results and complications Laryngoscope, 1973; 83:1673.
12. Soud, G.C. Krishnamurthy, G. Kapoor, S.: Unilateral blindness following vidian neurectomy, J.Laryngol. Otol. 1976; 90: 331.