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Long-term results of Vidian neurectomy

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SUMMARY

A number of publications appeared in the sixties claiming success of Vidian neurectomy in patients with chronic vasomotor rhinitis and recurrent polyposis nasi.

During the period from October 1970 through February 1975, a total of 27 Vidian neurectomies was performed in 14 patients (seven males and seven females). Two groups of seven patients each were operated on; seven patients with chronic vasomotor rhinitis and seven patients with recurrent polyposis nasi and rhinitis. Symptoms were quantitatively recorded pre- and postoperatively and patients were followed up 15-66 months.

The Rotterdam results appear in the long run inferior to those published in the literature.

INTRODUCTION

A number of publications appeared in the sixties claiming success of Vidian neurectomy in the treatment of chronic vasomotor rhinitis and recurrent polyposis nasi. Golding Wood (1961) specifically drew attention to this form of therapy in vasomotor rhinitis and claimed good results. French authors (Bouche, Frèche and Fontanel, 1971) specifically drew attention to this therapy in recurrent polyposis. In the Netherlands, the possibility of success was discussed by Wentges (1973).

On theoretical grounds, it was supposed that Vidian neurectomy would be successful in vasomotor rhinitis and recurrent polyposis as both conditions were considered the result of overstimulation of the parasympathetic nervous system. Golding Wood suggested an autonomic imbalance, asserting that the Vidian nerve is the major route along which this overstimulation can reach the nose.

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The results published in the literature inspired us in Rotterdam in 1970 to include this operation in our programme, primarily for the treatment of chronic vasomotor rhinitis and later also for the treatment of patients suffering from recurrent polyposis. In this paper, we compare our results with those published previously.

MATERIAL AND METHODS

A total of 27 Vidian neurectomies was performed in 14 patients during the period from October 1970 through February 1975. The indications for surgery were:

1. severe chronic vasomotor rhinitis, of the non-topic type, resistant to medical treatment. This group included seven patients (two males and five females).
2. recurrent polyposis nasi and rhinitis, resistant to medical treatment and polypectomy. Seven patients (five males and two females) were operated upon.

In all cases, the amount of rhinorrhoea, the impairment of nasal breathing, sneezing lacrimation, and polyps were quantitatively recorded both pre-operatively and post-operatively. All patients were examined ophthalmologically pre- and post-operatively.

Operations were performed under general anaesthesia. The fossa pterygopalatina was opened through the antrum. The nerve was indentified and severed in such a way that damage to the surroundig tissues was avoided. The nerve-stump was subsequently cauterised. All the operations were performed by the second author.

FOLLOW-UP

All patients were regularly re-examined. The follow-up period varied from 15 to 66 months. Apart from the findings on examination, the patients's opinion was taken as a measure for the degree of success.

RESULTS

1. *Chronic vasomotor rhinitis.* All seven patients were free of symptoms immediately after the operation. In five of them relief was temporary, however. Their symptoms recurred within 4 to 12 months. In two of the females surgery was successful for the whole follow-up period (56 and 66 months).
2. *Recurrent polyposis nasi and rhinitis.* Only one patient was really satisfied. Throughout the follow-up period lasting 63 months, this patient remained free from polyposis and rhinitis. In three cases, polyposis did

not recur but the symptoms of rhinitis showed no improvement (follow-up 14, 18, and 49 months respectively). In the other patients polyposis recurred.

COMPLICATIONS

Three patients complained of a dull sensation in the cheek. Conjunctival irritation resulting from insufficient lacrimal secretion was seen in two patients. The initial total loss of lacrimal secretion on the operated side, as measured with Schirmer's test, wore off gradually in most patients, but tear production achieved the pre-operative level in only one case. Finally, lacrimal secretion was reduced to approximately 50% in most patients and remained almost zero in three cases.

An oro-antral fistula was observed in one case.

DISCUSSION

Only patients resistant to medical treatment have been operated upon. When we compare our results with those published in the literature, it is obvious that the Rotterdam results are inferior. Initially, we were afraid that this might be due to our lack of surgical ability. However, when we review our results, this seems not to be the case. In the first place, it became clear from the instantly abolished lacrimal secretion that the nerve had been severed. In the second place, all patients experienced a practically symptom-free period shortly after the operation.

On the basis of our evidently limited experience, we have come to the conclusion that Vidian neurectomy will probably not be successful in the long run, as was expected previously. Considering the results, we have therefore abandoned the method.

Recent experimental studies, carried out by Grote (1974) in rats, have also suggested that the autonomic imbalance of the nose is more complicated than was expected before.

Apart from the limited success of the operation one should also take into account the chance of opthalmological complications. Permanent reduction in lacrimal secretion implies the possibility of a future keratoconjunctivitis sicca, which can take a very distressing form, especially in view of the physiological reduction in lacrimal secretion in elderly people.

RÉSUMÉ

Un certain nombre de publications parues dans les années 60 concluent au succès thérapeutique de la neurectomie vidienne dans le traitement de la rhinite vasomotrice chronique et de la polypose nasale récidivante.

Ces résultats nous ont amenés, à Rotterdam, à inclure cette opération dans

notre programme chirurgical. Pendant la période d'octobre 1970 à janvier 1975, un total de 27 neurectomies ont été pratiquées chez 14 patients. Ceux-ci forment deux groupes égaux. Le premier groupe comprend les patients souffrant de rhinite vasomotrice chronique et le second groupe est composé de patients atteints de polypose récidivante et de rhinite. Seuls, des patients résistant au traitement médical ont été soumis à l'intervention.
Les résultats obtenus à Rotterdam sont inférieurs à ceux publiés dans la littérature.

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REFERENCES

1. Bouche, J., Frèche, Cr. and Fontanel, J. P., 1971: La chirurgie du nerf vidien, Ann. Otolaryng. (Paris), 88, 529-546.
2. Chandra, R., 1969: Transpalatal approach for Vidian neurectomy, Arch. Otolaryng. 89, 126-129.
3. Chasin, W. and Lofgren, R. H., 1967: Vidian nerve section for vasomotor rhinitis. Arch. Otolaryng. 86, 129-135.
4. Eccles, R. and Wilson, H., 1973: The parasympathetic secretory nerves of the nose of the cat. J. Physiol. 230, 213-223.
5. Golding-Wood, P. H., 1961: Observations on petrosal and Vidian neurectomy in chronic vasomotor rhinitis, J. Lar. Otol. 75, 232-247.
6. Golding-Wood, P. H., 1973: Vidian neurectomy: its results and complications. Laryngoscope, 83, 1673-1683.
7. Gregson, A. E. W., 1974: Experiences with Vidian neurectomy, Laryngoscope 84, 221-224.
8. Grote, J. J., 1974: The autonomic innervation of the nasal mucosa, Thesis, Nijmegen.
9. Henkes, H. E., 1972: Tranenvloed, Ned. T. Geneesk. 116, 465-467.
10. Hiranandani, N. L., 1966: Treatment of chronic vasomotor rhinitis with clinico-pathological study of Vidian nerve section in 150 cases. Laryngoscope, 80-2, 902-932.
11. Ishii, 1970: The cholinergic innervation of the human mucosa, Pract. Otorhinolaryngol., 32, 153.
12. Jackson, R. T. and Rooker, D. W., 1971: Simulation and section of the Vidian nerve in relation to autonomic control of the nasal vasculature. Laryngoscope, 81-1, 565-569.
13. Keuning, J., 1968: On the nasal cycle. Internat. Rhinol., 6, 99-136.
14. Krajina, Z. and Kosokovic, F., 1965: Surgical treatment of vasomotor rhinitis. Internat. Rhinol. 3, 81.
15. Krajina, Z., 1972: Experimental vasomotor rhinitis. Laryngoscope, 82, 1068-1073.
16. Krajina, Z., 1973: Vidian neurectomy in vasomotor rhinitis. Acta otolaryng. 76, 366-371.
17. Malcolmson, K. G., 1959: The vasomotor activities of the nasal mucous membrane. J. Lar. Otol. 73, 73-98.
18. Montserrat, J. M., 1975: Vidian neurectomy. Rhinology, 13, 11-23.
19. Mygind, N., 1978: Vidian neurectomy. Nasal Allergy, Blackwell Scientific Publications, 282.

20. Nomura, Y. and Matsuura, T., 1972: Distribution and clinical significance of the autonomic nervous system in the human nasal mucosa. Acta otolaryng. 73, 493-501.
21. Taylor, M., 1973: The nasal vasomotor reaction. Otolaryng. Clinics of North America, 6, 3, 645-654.
22. Wentges, R. Th. R., 1973: Thesis, University of Nijmegen.

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