

## SURGICAL ANATOMY OF THE NASOPALATINE NERVE

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Doing septum surgery we regularly get in touch with the nasopalatine nerve, but we hardly ever see this nerve. What is its importance for the nasal surgeon?

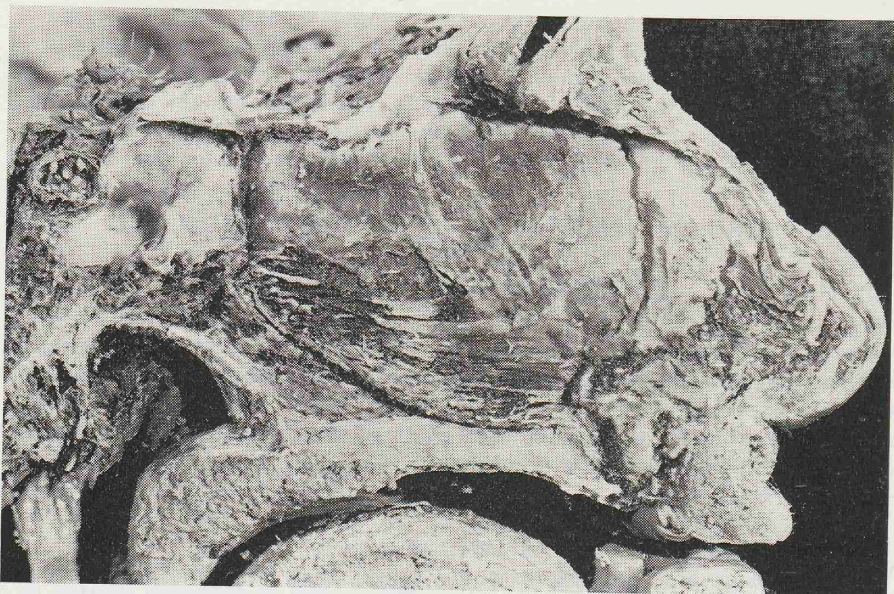
We all know, that some patients after septum surgery complain of hypaesthesia and paraesthesia around the upper incisor teeth. Not every patient does this. I estimate the proportion in my material as about one fourth or so. Some years ago we saw a patient, unfortunately an young woman, who lost the vitality of one central incisor, which turned from white to grey.

The anatomical and surgical textbooks agree, that the nerve runs between the mucous membrane and the periosteum. For this reason during subperiosteal technique the nerve is elevated with the mucosal flap and not seen. In the pictures of the textbooks the nerve generally takes a straight course, not far from the vomerian crest. The preparations, which Prof. Kubik (University of Zürich) kindly made for us, show, that the nerve's course seems to be much lower, not far from the nasal floor and curved with his convexity downwards. The entrance in the incisive canal is more behind than would be supposed and lays about 12 to 15 mm posterior to the pyriform crest (Figure 1). Unfortunately we had no opportunity to demonstrate the very thin anastomoses with the dental plexus composed by the branches of the superior alveolar nerve. The reason for this was, that it is practically impossible to get a cadaver with intact upper teeth. These anastomoses seem to be the most important subject of our considerations. The branches of the dental plexus which innervate the incisor teeth run immediately behind the pyriform crest through the nasal floor and are separated from the mucosa by a layer of bone sometimes paper-thin or even lacking. This explains the dental anaesthesia which occurs sometimes during surface or infiltration-anaesthesia in the anterior part of the nasal fossa. Permanent loss of sensitivity of one tooth may occur if either of the two following conditions exist.

1. If by some variation of nerve supply the principal fibres of one or more incisors arise from one of the anastomoses of the nasopalatine nerve instead of the superior alveolar nerve.

It is obvious, that during septum surgery the nasopalatine nerve easily suffers, even if the mucosal flaps are handled with caution. In this case the dental innervation may be touched from an injury placed at any part of the lower half of the septum even when far away from the pyriform crest.

2. Surgery at the pyriform crest with lifting of the mucosa might give injury to the branches of the alveolar nerve crossing the region previously anaesthetized.



As a conclusion we may say, that injury of the dental innervation during septum surgery is certainly exceptional, but may occur, if some infortunate conditions are realised. In maxillo-facial surgery we often do extensive mobilisation of the intermaxillary region without any harm to the dental vitality. This might be the consequence of the astonishing capacity of nerve recovery after injury. In nose and septum surgery we take advantage of this capacity of nerve recovery constantly.

Nevertheless it could be advantageous to give an idea about the surgical anatomy and the variability of the innervation in our working area. To avoid even a minimal risk of dental injury during septum operations we must know these conditions. The consequence of this will be, that specially during performance of the lower tunnel — a very important step in any kind of septum surgery — the elevating of the periosteum must be done very carefully and limited to what is necessary. If lateral extension of the mucosal elevation is indicated, careful lifting of the muco-periosteal layer at the nasal floor may be accomplished by making initially a tunnel over the mid portion at the floor of one nostril and carefully sweeping first posteriorly and then medially. This manoeuvre will adequately loosen the mucosa for any septal procedure without greater risk for nerve trauma.

#### SUMMARY

The course of the nasopalatine nerve is well below the crest of the vomer and downward convexly curved. The anastomoses with the branches of the anterior superior alveolar nerve are described. There is some danger of permanent injury to the innervation of the central incisor teeth. The risk may be avoided by some technical points which have been discussed.



## RÉSUMÉ

Le trajet du nerf nasopalatin se trouve bien en-dessous de la crête du vomer. Ce trajet est courbe avec sa convexité vers le plancher nasal. Les anastomoses du nerf avec les branches du nerf dentaire sont décrites. Le danger de lésion permanente de l'innervation dentaire au courant d'une innervation sur la cloison n'est pas grand, mais existe quand-même. Ce risque pourrait être évité par quelques précautions qui sont décrites.

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