

[2003 Fall A32] Computed tomography guide for trigeminal alcohol neurolysis

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Introduction: Trigeminal neurolytic blocks (TNB) are usually guided with fluoroscopy or plain x-ray which gives us only two dimension pictures

Aim of the Study: To show our experience with CT guide to perform TNB, on high surgical risk patients with trigeminal neuralgia (TN).

Method: 21 patients with idiopathic uncontrolled TN, were scheduled for TNB under CT guide. All cases were monitored with EKG, pulse oximetry and NIBP. TNB were done with the patients on supine position. Local anesthesia with 1% lidocaine, a 22 gauge Quincke type spinal needle, 8.89 cm long was inserted according with the Gasserian ganglion block technique, until the needle tip reached the skull base, or a mandibular paresthesia was elicited. Immediately, a series of CT slides were done to identify the needle tip position. The needle tip was then walked carefully into the foramen ovale, and once a proper position was confirmed with another CT, the stylet was removed. After a negative CSF and blood aspiration proved, a 0.1 to 0.2 mL increments of dehydrated 98% ethanol were injected every 30 seconds up to 1 mL.

Results: We were able to perform TNB in all cases. All cases but two were done as ambulatory procedures. Adequate pain relief was obtained in all but 3 patients. Eighteen patients were able to stop or decrease their previous pain medicines. Analgesia lasted up to 24 months of follow-up. Three individuals did not improve their pain. In one of these 3 cases, neurolysis was repeated but he did not respond to the block, and developed V2 anesthesia dolorosa.

Conclusions: Neurolysis of cranial nerves under CT guide was first described in 1991. The main advantage of CT over fluoroscopy and plain x-ray is the exquisite visualization of the foramen ovale, allowing an exact placement of the needlepoint on the anatomical target. Once the needle is on the target, it is very important to assure that the dura has not been punctured. The accurate placement of the needle tip inside the foramen ovale nullify the chance of injecting the neurolytic improperly, reducing the incidence of side effects due to incorrect neurolytic agent injection.

Eighteen cases were able to drastically reduce their pain medications, lessening the side effects of those drugs, like somnolence, confusion or vertigo, allowing a better way of life.

CT guide is more expensive than conventional fluoroscopy or plain x-ray, and requires an expert radiologist. Use of CT guide to perform NTB is an alternative to fluoroscopy.

References

- 1.Jain S, Alagesan R, Harris A, Chiang J. Selective neurolysis of cranial nerve using computerized tomography. *Anesthesiology* 1991;75:S1-S748.
- 2.Whizar LV, Carrada PS, Segovia GC, Cisneros CR. Neurolysis del trigémino bajo control tomográfico. Informe de un caso. *Rev Mex Anest* 1999;22:43-48.
- 3.Okuda Y, Okuda K, Shinohara M, Kitajima M. Use of computed tomography for maxillary nerve block in the treatment of trigeminal neuralgia. *Reg Anesth Pain Med* 2000;25:417-419.

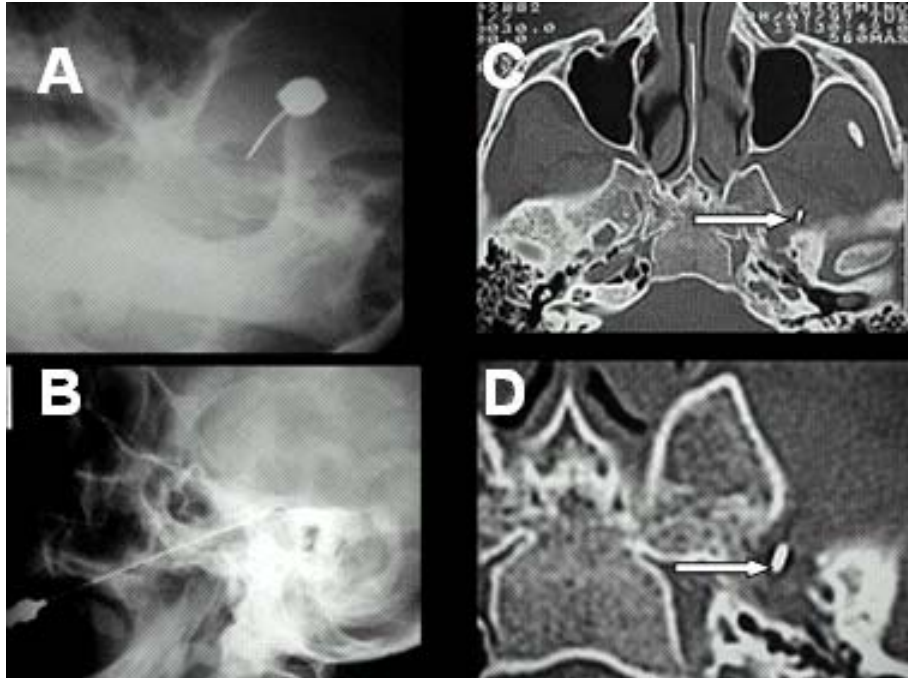


Figure 1. A and B are plain X-rays during fluoroscopy guided fifth nerve neurolysis. Although this patient had excellent pain improve, it is difficult to assure that the needle tip was properly place. C and D are CT images; on slide C we observe the needle tip close to the entrance of the foramen ovale, on slide D the needle is in the foramen ovale.

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