Bipolar Radiofrequency Denervation for Treatment of Cervicogenic Headache: a Case Report

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Introduction

Cervicogenic headache, defined as pain referred to the head from the cervical spine[1], has been treated successfully by radiofrequency (RF) denervation[2]. We applied a modified technique, based on lesion geometry described by Cosman&Gonzalez[3], whereby a bipolar lesion is made between two parallel cannulae instead of multiple, contiguous monopolar lesions.

Methods

Four patients underwent unilateral medial branch RF neurotomy at C2-4, under local anesthesia and conscious sedation. Procedure was performed using NT 2000 (Neurotherm) RF generator, bipolar (´dual´) mode, 80°C, 60 sec, curved 18G, 10mm active tip cannulae (SMK-C1010-18), fluoroscopy-guided, patient in the lateral position. Informed consent was obtained.

Figure 2 Patient in lateral position

Figure 1A

Figure 1B

Cannulae in position for lesioning: A lateral view; B foraminal view

Conclusion

Bipolar mode is effective and, compared with monopolar, likely to produce a uniform, rectangular-shaped lesion, with fewer cannula placements and shorter procedure times.

Results

All patients had severe unilateral headaches, with ipsilateral cervical paravertebral tenderness. The diagnosis of cervicogenic headache was based on positive medial branch block (bupivacaine 0.5%), with temporary complete disappearance of the symptoms in question.

Distribution of pain:
Patient 1: M, 35, right occipital/parietal/frontal/temporal.
Patient 2: M, 81, right occipital/mastoid/temporal and face (cheek, mandible).
Patient 3: F, 65, left face (from mandible towards the eye) with eyelid twitching.
Patient 4: F, 43, right face (infraorbital, zigoma, mandible, teeth) and occipital/ mastoid/parietal.

RF denervation resulted in resolution of headaches and full functional recovery, remission lasting in all 4 patients, 3-9 months at the time of abstract submission.

References:

1) Bogduk N, Govind J. Lancet Neurol 2009;8:959–68
2) Govind J, et al. J Neurol Neurosurg Psychiatry 2003;74:88–93
3) Cosman ER, Gonzalez CD. Pain Practice 2011;11:3-22

WIP 8th World Congress, New York, 2016