

An Intra-Arterial Therapeutic Route to the Trigeminal Nerve Ganglion

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To the Editor:

I read with interest the article by Qureshi *et al.* [1] in January issue of *Journal of Neuroimaging* regarding intra-arterial delivery of medication for suppressing trigeminal nerve ganglion function in patients with refractory trigeminal neuralgia. Intra-arterial route has not been used for diagnostic or therapeutic purposes despite nerves and nerve ganglions being supplied by segmental arteries and the vasa nervorum. The investigators had used intra-arterial lidocaine in doses up to 50 mg in the middle meningeal artery territory adjacent to the arterial branch that supplies the trigeminal nerve ganglion and demonstrated short-term clinical improvement as anticipated. The artery of Qureshi [2] described earlier may also be used for delivery of neurolysis agents such as alcohol or antineoplastic agents with neurotoxic properties to the trigeminal nerve ganglion for more sustained benefit in patients with refractory trigeminal neuralgia. However, the artery of Qureshi does not appear large enough for selective catheterization and microcatheter has to be placed in the middle meningeal artery. Therefore, one must expect that certain amounts of injected agents are going to be distributed in the petrosal artery which courses posteriorly and anterior and posterior dural branches of the intracranial division of middle

meningeal artery [2]. What remains to be identified is whether there are adverse consequences of such a distribution with previously mentioned agents. The petrosal branch of middle meningeal artery supplies the facial nerve and anastomoses with the stylomastoid branch of the posterior auricular artery and inadvertent delivery of such agents may be of concern. Furthermore, most data regarding arterial supply are derived from patients with trigeminal neuralgia. Due to hyperactivity of the trigeminal nerve ganglion, the arterial supply may be more pronounced with an enlargement of the artery of Qureshi. In normal persons, the artery may actually be smaller. Additional studies would also have to clarify whether the artery of Qureshi (to trigeminal nerve ganglion) can originate from other arteries such as accessory middle meningeal artery as part of normal variation between individuals.

References

1. Qureshi AI, et al. Intra-arterial modulation of the trigeminal nerve ganglion in patients with refractory trigeminal neuralgia. *J Neuroimaging* 2018;28:79–85.
2. Qureshi AI. Artery of trigeminal nerve ganglion. *J Vasc Interv Neurol* 2017;9:57–58.