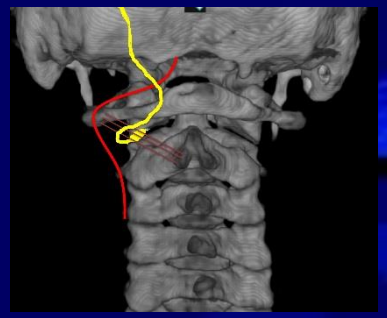
NEW TECHNIQUE FOR CRYONEUROABLATION OF THE PROXIMAL GREATER OCCIPITAL NERVE

Agnes Stogicza 1, MD, FIPP, CIPS, Andrea M Trescot 2 , MD, FIPP, DABIPP

1 Department of Anesthesiology and Pain Medicine, University of Washington, 2 Pain and Headache Center, Wasilla, AK

Objectives: Describe a safe ultrasound-guided (US) cryoneuroablation technique of the greater occipital nerve (GON).

Background: Cryoneuroablation is a treatment option for occipital neuralgia, providing sustained relief when steroid injections help only temporarily. US can identify the proximal GON between C2 spinous and C1 transverse process over the inferior oblique capitis muscle (IOCM), where the GON is clearly visualized. This area carries risks because of the nearby structures, including the spinal cord, exiting nerve roots and vertebral artery. US-guided GON injections are usually performed with an out-of-plane approach; however, that approach is difficult with cryoneuroablation, because the probe has no lumen (prohibiting hydrodissection), and the size and dullness of the probe hinders easy manipulation.



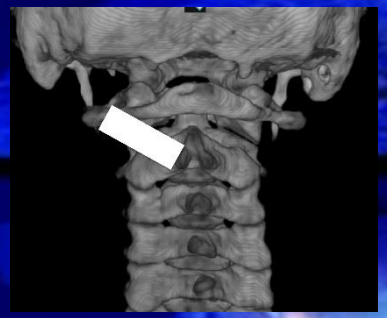


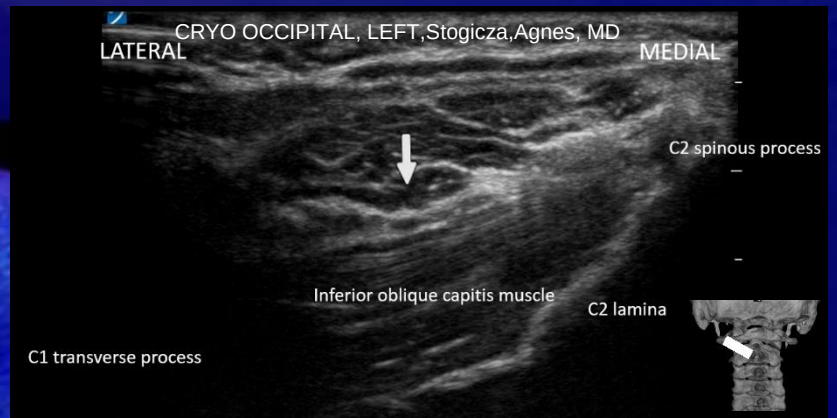
Image 1: The vertebral artery, spinal cord and exiting nerve roots are in the vicinity of the target area for the GON

Methods: Patient is positioned prone, with head supported. The US probe is placed parallel to the IOCM (image 1). The GON is seen on top of the IOCM; dynamic exam confirms the GON, as it dives under the IOCM if scanned caudad and tracks medially if scanned cephalad. The vertebral artery is visualized in the other "corner" of the image, and carefully avoided (image 2). Midline 2mm incision allows access to both nerves with one skin entry. The 14G cryo probe is advanced to the nerve through a 12G Angiocath, with constant visualization, pointing away from the spinal cord, which increases safety.

Image 2: Single midline entry allows cryoablation of both GONs

Results: At UW, we performed 40 GON cryoneuroablations with this technique without any major complications.

Conclusions: Cryoneuroablation of the proximal GON can be performed safely, providing longer lasting benefit than steroids injections.



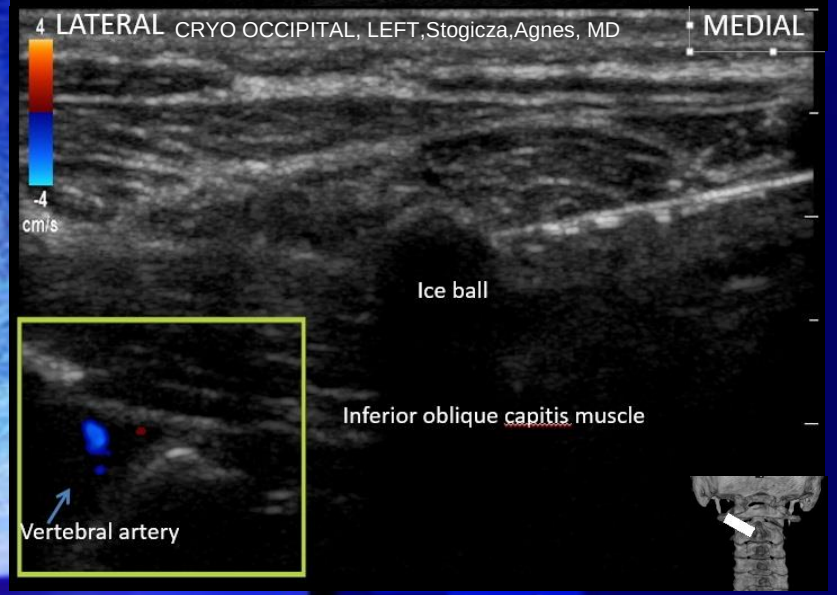


Image 3A: Arrow pointing at GON
Image 3B: Ice-ball at the tip of the cryo-probe