## What Is the Lobular Branch of the Great Auricular Nerve? Anatomical Description and Significance in Rhytidectomy

*Vicki Sharma, BS; Christopher C. Surek, DO; Robert Stephens, PhD; Barth Wright, PhD*

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**INTRODUCTION**: Recent literature describes a distinct third branch of the great auricular nerve (GAN) named the lobular branch. Studies demonstrate preserving the lobular branch of the GAN has greater impact on sensory function at the auricle than preservation of the posterior branch during rhytidectomy.[1,2] However, no methodology exists to efficiently and accurately determine the topographic location of the lobular branch. This study described the branching characteristics of the lobular branch and algorithmic surface markings to assist surgeons in preservation of this nerve during rhytidectomy flap elevation.

**MATERIALS AND METHODS**: The lobular branch was dissected bilaterally in 50 cadaveric necks. Measurements were taken from the lobular branch to conchal cartilage, tragus, and antitragus. The anterior branch was measured to its SMAS insertion and the posterior branch was measured to the mastoid process. McKinney's point was marked and the GAN diameter was recorded. Branching pattern and location of branches within the Ozturk 30-degree angle were documented. Basic statistics were performed. A student's t-statistic was used to compare male and female GAN diameter difference.

**RESULTS**: The anterior, posterior, and lobular branches were present in all specimens. In comparing nerve diameter between males and females a highly significant difference was identified ($t=-2.780$, $p<0.01$). The most common origin of the lobular branch was from a trifurcation with the anterior and posterior branches. The lobular branch always terminated in the lobular area, but may send accessory branches to the pre-auricular area or posterior inferior auricle. In 85% of specimens, the lobular branch resided directly inferior to the antitragus and in the remaining specimens it was located directly inferior to the tragus. Pre-operative markings consisting of two vertical lines from the tragus and antitragus to McKinney's point can be used to outline the predicated location of the lobular branch.

**CONCLUSION**: This study delineated the location of the lobular branch of the GAN. We translate these findings into a quick and simple intraoperative marking, which can assist surgeons in avoiding the lobular branch injury during rhytidectomy dissection.

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