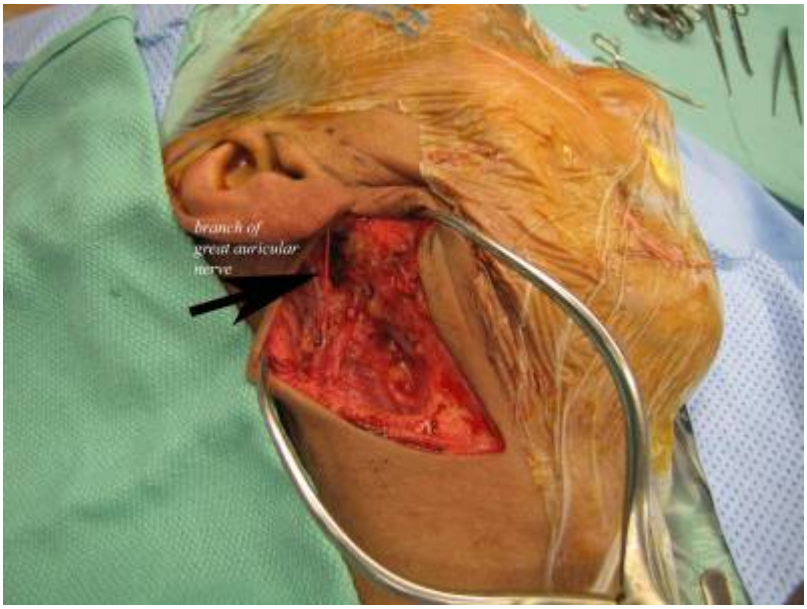
Great Auricular Nerve

When it comes to autogenous nerve grafting, the sural nerve and great auricular nerve are the two nerves predominately used for trigeminal and facial nerve repair. Arising from the second and third cervical ventral rami, the great auricular nerve emerges from the posterior border of the sternocleidomastoid coursing superiorly and anteriorly toward the ear.



Eleven sides from five Caucasian and 1 Asian cadaveric heads (all fresh-frozen) were used. One male and five females were used with an age at death ranging from 57 to 91 years with a mean of 80.3 years. Measurements were made from the inferior border of the ear to the GAN, the distance from the GAN to external jugular vein (EJV), the distance from the inferior border of the mastoid process to the GAN; the proximal, medial and distal diameters of the GAN were also measured as well as the length of the GAN that was obtained from this exposure.

The great auricular nerve is an excellent option for use in nerve grafting for repair of, for example, facial dysfunction.

Altafulla et al., from the Seattle Science Foundation,Swedish Medical Center, Neurosurgery Department, Hospital Santo Tomas, reviewed the measurements, techniques for identification and dissecting techniques for the GAN. The proximity to the operative area and minimal complications associated with GAN grafting might contribute to improved patient satisfaction and better outcomes for regarding functional restoration [1].

A new one-stage nerve pedicle grafting technique, employing a vascularized great auricular nerve graft, was used to repair a facial nerve defect. The facial nerve of a 39-year-old woman with facial schwannoma was resected, and an island vascularized great auricular nerve graft from the ipsilateral side was transferred to bridge a 4 cm long defect of the buccal branch. Postoperatively, rapid nerve sprouting through the vascularized nerve graft and excellent facial reanimation were obtained within 6 months after surgery. This method in one-stage using a vascularized nerve graft is technically easy, requires a short operating time, has minimal donor-site morbidity, and leads to successful nerve regeneration postoperatively [2].

1)
Altafulla J, Iwanaga J, Lachkar S, Prickett J, Dupont G, Yilmaz E, Ishak B, Litvack Z, Tubbs RS. The Great Auricular Nerve: Anatomical Study with Application to Nerve Grafting Procedures. World Neurosurg. 2019 Jan 28. pii: S1878-8750(19)30185-8. doi: 10.1016/j.wneu.2019.01.087. [Epub ahead of print]

PubMed PMID: 30703599.

2)

Koshima I, Nanba Y, Tsutsui T, Takahashi Y, Itoh S. New one-stage nerve pedicle grafting technique using the great auricular nerve for reconstruction of facial nerve defects. J Reconstr Microsurg. 2004 Jul;20(5):357-61. PubMed PMID: 15237353.