FACIAL HYPOGLOSSAL ANASTOMOSIS.*

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Miss H., whom I presented to you last May and whose case I reported in full in the Laryngoscope (Page 658, August 1906) owing to the unusual pathological condition of the temporal bone I again present this evening to show the result of a neuro-plastic operation for the cure of a facial paralysis which resulted from the absolute necessity of removing all the necrotic bone involving the labyrinth. She is completely relieved of all her labyrinthian symptoms and severe headaches from which she suffered greatly before her first operation. Since I destroyed so much of the continuity of the nerve I did not expect any regeneration of the facial nerve, consequently did not wait any longer than six months to do this plastic operation. It is now $4\frac{1}{2}$ months since this last procedure.

TECHNIC OF OPERATION.

Usual preparation, general and local.

Instruments. Knives, artery forceps, Allport's retractors, Kocher's director and simple grooved director, anatomical forceps, tissue forceps, four strabismus hooks, two lid retractors, one slender curved scissors (enucleation) one blunt pointed slender knife, fine round edged needles, fine silk, needle holder, large needles for skin and other suture material.

Operation. 1. Incision, retro-auricular from about the middle of the auricle downward and forward along the anterior border of the sterno-clido-mastoid for about four inches.

2. Dissect up the skin and subcutaneous tissues.
3. Dissect bluntly to the posterior border of the parotid gland.
4. Locate entrance of facial nerve into the gland.
5. Dissect nerve back to the stylo-mastoid-foramen.
6. Locate internal jugular vein under anterior border of the sterno-cleido-mastoid muscle.
7. Locate posterior belly of digastric muscle, loosen this up and retract upwards.
8. Loosen interior jugular vein and retract anteriorly.

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9. So expose the hypoglossal nerve. It appears here in its forward course.

10. Follow it towards the tongue to be sure.

11. Remove all the sheath covering it at its nearest point to the facial.

12. Place sponge dipped in normal salt solution over this area and attend to the facial nerve.

13. Grasp the facial nerve and use gentle traction as though you wished to pull it from the stylo-mastoid canal.

14. With the curved slender scissors or blunt pointed knife cut the nerve as high as possible in the canal.

15. Trim up this cut end into a sort of a point so that the axis cylinders protrude from the nerve sheath.

16. Apply ligatures, principally through the sheath, two in number, through this pointed nerve end.

17. Make a small longitudinal slit, $\frac{1}{4}$ inch long, into the hypoglossal nerve sheath at the point where the facial nerve stump will fit in without any tension.

18. Separate the lips of this slit in the hypoglossal by means of a tissue forcep and implant the facial nerve stump into it in such a manner that it is turned upward to meet the central fibers of the hypoglossal, or rather to get the stimuli that come directly from the brain.

19. Suture the facial nerve stump to the sheath of the hypoglossal using very little tension on the sutures because strangulation is liable to follow.

20. One suture of the perinural areolar tissue of the hypoglossal is made over this anastomosis.

21. Reapplication of the structures to their normal positions.

22. Close the skin wound without drainage.

The above steps were carried out within one hour and twelve minutes including the anesthesia (nitrous oxide followed by ether.) I was kindly assisted by Dr. M. A. Goldstein of St. Louis, Dr. Flemming of Los Angeles, Dr. Owen of Chicago.

Primary contraction and reaction of the paralyzed side of the face followed the first 24 to 36 hours but disappeared afterwards. Otherwise primary union and normal recovery took place except a partial paralysis of the tongue and some little difficulty in swallowing.

No improvement could be seen for several weeks as to the motion of the face. The patient declared as early as the third week that she felt that side of the face getting stronger and food did not lodge in the inner side of her cheeks as often as before. The seventh week I found some contraction of the lower lip and about the eleventh week the same condition in the upper lip, a distinct crease, very similar to the normal condition. Three and one-half months after the operation, patient noticed while swallowing, that the face moved on the paralyzed side and since then has acquired the habit of controlling this movement and somewhat disassociating it so that she may either contract the face when swallowing or swallow without contraction. The muscles of the eyelid and forehead have not yet recovered very much, although improved somewhat. One would not recognize the facial paralysis of this patient unless she were asked to close the eye or laugh. General tonics of strychnia and iron, exercises, massage and electricity have been continued constantly three to four times a week.

Gentlemen, I hope I may be pardoned for presenting this case before an entire cure has been effected but I shall present her with another similar case at some future time when I read a paper on the subject. Suffice it to say at this time that quite a number of cases are on record of neuro-plastic operations of the facial nerve and that at the present time the hypoglossal is chosen in preference to the spinal accessory or glosso-pharyngeal nerves. Stewart and Ballance, Taylor and Clark, Cushing and Fouret are the principal writers on the subject and they all report successful results.

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