SUTURE OF FACIAL NERVE AFTER INJURY
AT BASE OF SKULL

METHOD OF GAINING EXPOSURE AND SLACK BY RESECTION
OF PAROTID GLAND*

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Adequate exposure and approximation without tension are two most important essentials in the repair of severed nerves. Both of these are difficult to secure in deep injuries of the facial nerve between the posterior edge of the ascending mandibular ramus and the point where the nerve enters the stylomastoid foramen. In this region there is little room between the mastoid and the mandible, and the space is largely filled by the deep portion of the parotid gland. This problem of adequate exposure and a practical method adopted for its solution are illustrated by the following case.

On Dec. 1, 1945 a 21-year-old Naval officer was slashed across the left lower cheek from the tragus obliquely downwards and forwards to his chin and stabbed a second time more deeply behind the angle of his jaw. As a result he suffered a complete facial paralysis and also interruption of the cervical sympathetic trunk (Fig. 1). The facial nerve could have been severed in either or both incisions. Ability to close his eye partially was preserved because of the concomitant Claude Bernard-Horner's syndrome, as pointed out by Leriche and Hesse. The lacerations were immediately sutured without attempt to explore the nerve.

He entered the U. S. Naval Hospital at St. Albans a week afterwards with the lacerations healing by first intention. Exploration of the injured nerve was postponed for another 3 weeks to permit the early oedema of its severed ends to subside.

The delayed secondary operation was performed on Dec. 28, 1945 under sodium

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pentothal in gas-oxygen anaesthesia. The oblique laceration in the cheek and the vertical one under the ear were reopened and connected by a short transverse incision just beneath the ear, thereby turning down a generous inverted U flap. As it was impossible to tell through which wound the nerve was divided, the peripheral branches were first identified as they emerged from the anterior and lower edges of the parotid gland. They were then followed centrally through the gland and found to be intact. Attempts to follow the nerve deeply under the skull between the mastoid and ramus of the jaw were made difficult by the lack of space and the bulk of the deep extension of the parotid. It was therefore decided to resect the entire gland, both to secure a better exposure and to gain slack which would be needed for a satisfactory approximation. An excellent exposure resulted and the nerve was found severed a few millimeters below its point of exit from the stylomastoid foramen (Fig. 2).

![Image of the facial nerve](image)

**Fig. 2.** Wide exposure of the facial nerve following resection of the parotid gland. Black silk sutures have been placed under the primary divisions of the nerve.

With the course of the nerve shortened by the elimination of the parotid gland, ample slack was available to permit the necessary resection of the scarred nerve ends, their end-to-end approximation by a single 0.003" tantalum through-and-through suture, and a second stitch through the superficial portion of the epineurium. Placing other epineurial sutures was impossible, because of the depth and inaccessibility of the point of injury between the styloid process and mastoid. To compensate for this the line of suture was further reinforced by plasma glue poured into an improvised mold of rubber dam which was laid under the suture. After the plasma had clotted, the rubber strip was removed and the incision closed in two layers by fine silk sutures. It was judged neither feasible nor necessary to attempt the repair of the injured cervical sympathetic trunk.

The patient's recovery was uneventful and he was kept under observation for a year before his separation from the Navy. Recovery of the muscles of the lower face and at the corner of the mouth became evident within 3 months. By the end of 3 months he could