GLOMUS JUGULARE TUMOR
REPORT OF A CASE WITH SURGICAL REMOVAL*

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Tumors of the glomus jugulare are not particularly common. Only 18 well-documented cases have been included in the Armed Forces Institute of Pathology fascicle on tumors of the carotid body and related structures, published in 1951. The available literature regarding these tumors is composed largely of individual case reports, and the results obtained in their treatment seem to be anything but salutary. A review of the treatment suggested for these lesions finds an overwhelming recommendation for radiation therapy, and an almost unanimous opinion that attempts at surgical removal are both dangerous and futile. Indeed, Dr. Harry Lee Parker has stated: “Exploration through the ear is hazardous, through the posterior fossa of the skull, hopeless, and, generally speaking, both ear and nerve surgeons are thankful to compound for deep roentgen therapy, which, by the way, is no good, since the tumor is sadly insensitive to therapeutic radiation.”

In view of the general and profound pessimism regarding the treatment of tumors of the glomus jugulare, we feel that the following case is worthy of report.

CASE REPORT

#C27952. H.O., a 35-year-old Negro woman, was admitted to St. Luke’s Hospital, Cleveland, Ohio on Sept. 25, 1956. She reported at that time that she had been troubled over a 3-year period by a “lump” in the right side of the neck. Multiple other complaints were dated to the time when the mass was first noted, and these included: weakness of the right side of the face, inability to move the right eye laterally, diminished hearing in the right ear, hoarseness, wasting of the right side of the tongue, severe headaches, and difficulty in swallowing, with regurgitation of fluids through the nose. Because of the mass, as well as the attendant symptoms, a tonsillectomy had been performed 3 years prior to admission, and this had no beneficial effect, either on the symptoms or on the size of the mass in the neck. At one time, the “lump” in the neck had been intermittently painful, but in the preceding 2 years, there had been no pain or tenderness in this area. For an undetermined period of time, she had been troubled by a “buzzing noise” in the right ear, which varied in intensity from time to time.

Examination. Temperature was 36.5°C., pulse rate 85, respiratory rate 16, and blood pressure 130/90. The patient was thin, but well developed, and she sat with her head turned and tilted toward the right side. No cranial tenderness, exostosis or bruit were found. The fundi were normal, and visual fields were full on testing by confrontation. The right pupil was 2 mm. larger than the left, but both reacted readily to light, and in convergence. There was complete paralysis of the right lateral rectus muscle, but extraocular movements were normal in all other respects. Motor and sensory function of the 5th cranial nerve were normal. A pronounced, but incomplete, weakness of all muscles of facial expression was present on the right. Auditory acuity was markedly depressed in the right ear, but air conduction was

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greater than bone conduction. The external auditory canals and membrana tympani were normal. Sensation and gag reflex were diminished in the right tonsillar area. Speech was hoarse, and of nasal quality, and the right vocal cord was paralyzed on indirect laryngoscopy. On phonation, the uvula deviated toward the left side. Function of the trapezius and sternocleidomastoid was weak on the right. The right half of the tongue was atrophied and wrinkled, and, on protrusion, the tongue deviated toward the right. No peripheral motor or sensory losses were evident. The myotatic, as well as the superficial, reflexes were normally active and bilaterally symmetrical. No pathological reflexes were elicited. The gait and station were normal, and no cerebellar deficits could be found.

A firm mass, approximately the size of a pigeon's egg, could be palpated intraorally in the right tonsillar region. This mass transmitted pulsations from the carotid artery, and there was an audible bruit over this mass.

Laboratory Findings. Count of white blood cells, hemoglobin and hematocrit were normal. Urine was normal, and blood serology was negative. Roentgenograms of the chest were normal. Radiograms of the temporal bones revealed a destruction of the floor of the posterior fossa in the region of the right jugular foramen, and this appeared to involve the inferior tip of the right petrous portion of the temporal bone (Fig. 1). Right carotid arteriography, with 35 per cent Diodrast, disclosed no aneurysmal dilatation or anomalous communication. A clinical diagnosis of glomus jugulare tumor, with cervical extension, was made.

1st-Stage Operation. On Oct. 1, 1956, under general anesthesia, a right subocipital craniectomy was performed through a "hockey-stick" incision (W.V.T.). The cerebellum was under considerable tension, and the lateral one-third was excised to permit exposure of the tumor. The tumor was extremely vascular, firm and approximated the size of an English walnut. It lay beneath the right tonsil of the cerebellum, and, in part, beneath the brain stem, which it displaced to the left. Dissection of the tumor was carried to the level of the large, eroded, jugular foramen, where it was transected below the level of the foramen. The tumor separated readily from the dura mater, but hemorrhage was troublesome, though not prohibitive. The internal jugular vein at this level was not adherent to tumor, and the vessel was left intact. The 9th, 10th, 11th and 12th cranial nerves were so severely atrophied that no identifiable remnants of them could be found. Although the patient was never in a condition approaching shock, 2500 cc. of whole blood were given during the operation.