Ectopic glial tumors have been found in the leptomeninges, the nasal cavities, the bridge of the nose and face, the soft palate, the pericranium, intradural extramedullary space of the spinal canal, and extraspinal space of the lumbarosacral region.

We believe that our case of ectopic glioma of the jugular foramen is the first to be reported in the literature.

Case Report

This 47-year-old man was admitted because of increasing hoarseness and progressive dysphagia for 1 year.

Examination. There was bilateral sensory neural loss of hearing. The uvula deviated to the left and the tongue protruded in the midline. The gag reflex was diminished bilaterally, particularly on the left. There was weakness and atrophy of the left sternocleidomastoid muscle and partial loss of the left trapezius muscle. No sensory impairment, long tract signs, or papilledema were noted.

Basilar skull radiographs showed questionable cortical erosion of the left jugular foramen. This could not be confirmed by tomography. Left brachial and left carotid arteriograms did not reveal any abnormality. Pantopaque cisternogram revealed a smooth filling defect on the left side of the clivus probably in the region of the left jugular foramen. A retrograde jugular venogram by percutaneous puncture of the left internal jugular vein demonstrated non-filling of the left jugular bulb, with good crossfilling to the contralateral right side by way of the cavernous sinus (Fig. 1).

Operation. The patient underwent a suboccipital craniectomy under general anesthesia without complications. A small (1 to 1½ cm) grayish mass was found adherent to the left 9th, 10th, and 11th cranial nerve roots between the brain stem and the jugular foramen. The tumor was decompressed by an intracapsular removal. The capsule, which was densely adherent to the nerve roots, was left. Microscopic examination of the tumor tissue revealed low-grade glioma (Fig. 2). No radiation therapy was given.
Postoperative Course. The patient's postoperative course was complicated by persistent difficulty with swallowing and ultimately a gastrostomy was done to facilitate feeding. He was subsequently discharged, and when seen 1 year later there was no further progression of his neurological deficit.

Discussion

The jugular foramen is divided into the "pars nervosa" and "pars vascularis," and is traversed by the glossopharyngeal (9th), vagus (10th), and spinal accessory (11th) nerves, the inferior petrosal sinus, the posterior meningeal artery, and the internal jugular vein. The size and shape of the jugular foramen vary considerably. Asymmetry of the two sides is frequent and is attributed primarily to the dimensions of the pars vascularis, which is dependent upon the size of the transverse sinus. Erosion of the cortical margin and not asymmetry of the foramen should be considered as an abnormal finding. In our case, the submentovertex view of the skull in varying degrees with and without tomograms failed to demonstrate erosion of the left jugular foramen with certainty. Pantopaque cisternography revealed a smooth round defect on the left side of the clivus probably in the endocranial opening of the left jugular foramen. A pneumoencephalogram was not done in this case but may be helpful to determine intracranial extension. The most definitive study in the evaluation of a jugular foramen tumor and its extension is the retrograde jugular venogram in submentovertex view via either femoral vein catheterization or direct percutaneous puncture as was demonstrated in our case (Fig. 1).

The clinical findings in our case most closely resemble the jugular foramen syndrome of Vernet which is caused by a lesion in the region of the jugular foramen characterized by ipsilateral involvement of the 9th, 10th, and 11th nerves. This syndrome is usually of traumatic origin and follows a basal skull fracture. Vascular and neoplastic lesions, thrombosis of the jugular bulb, and aneurysm of the internal carotid artery may also be etiological factors. Absence of Horner's syndrome separates our case from the jugular foramen syndrome of Villaret. Tumors of the glomus jugulare show involvement of the 9th, 10th, and 11th nerves, and

FIG. 1. Left retrograde jugular venogram in the submentovertex projection demonstrates nonfilling of the left jugular bulb with irregular inferior border (L). Reflux into the left external jugular vein and crossfilling to the contralateral side reveals normal right jugular bulb (R).

FIG. 2. The tumor is basically formed by medium-sized glial cells with multiple cell processes. Fine glial fibers are seen within the tumor cells as well as in the stroma. The diagnosis was low-grade (I-II) glioma. H & E, × 369.
Glioma of the jugular foramen

there is usually some evidence of 7th and 8th nerve dysfunction as well. Our patient had longstanding bilateral 8th nerve dysfunction probably coincidental to the jugular foramen lesion. A progressive unilateral involvement of multiple lower cranial nerves should suggest possible neoplastic invasion along the floor of the cerebellar fossa.

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References


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