Transcavernous Resection of a Giant Extensive Chondrosarcoma with Endoscopic Assistance

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Abstract

Chondrosarcomas are one of the major malignant neoplasms which occur at the skull base. These tumors are locally invasive. Gross total resection of chondrosarcomas is associated with longer progression-free survival rates. The patient is a 55-year-old man with a history of dysphagia, left eye dryness, hearing loss, and left-sided facial pain. Magnetic resonance imaging (MRI) showed a giant heterogeneously enhancing left-sided skull base mass within the cavernous sinus and the petrous apex with extension into the sphenoid bone, clivus, and the cerebellopontine angle, with associated displacement of the brainstem (Fig. 1). An endoscopic endonasal biopsy revealed a grade-II chondrosarcoma. The patient was then referred for surgical resection. Computed tomography (CT) scan and CT angiogram of the head and neck showed a left-sided skull base mass, partial destruction of the petrous apex, and complete or near-complete occlusion of the left internal carotid artery. Digital subtraction angiography confirmed complete occlusion of the left internal carotid artery with cortical, vertebrobasilar, and leptomeningeal collateral development. The decision was made to proceed with a left-sided transcavernous approach with possible petrous apex drilling. During surgery, minimal petrous apex drilling was necessary due to autopetrosectomy by the tumor. Endoscopy was used to assist achieving gross total resection (Fig. 2). Surgery and postoperative course were uneventful. MRI confirmed gross total resection of the tumor. The histopathology was a grade-II chondrosarcoma. The patient received proton therapy and continues to do well without recurrence at 4-year follow-up. This video demonstrates steps of the combined microsurgical skull base approaches for resection of these challenging tumors. The link to the video can be found at: https://youtu.be/WlmCP_i57s.

Keywords

► chondrosarcoma
► endoscopic-assisted microsurgery
► cavernous sinus
► skull base
► transcavernous approach

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Conflict of Interest
None declared.