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Video Abstract

Unedited microneurosurgery of a large recurrent papillary tumor of the pineal region

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Abstract

Background: Papillary tumor of the pineal region (PTPR) is a new entity introduced in the 2007 World Health Organization (WHO) nomenclature to describe a rare grade II–III pineal lesion with epithelial-like papillary architecture and particular immunohistochemical features. PTPR is extremely rare in children. Herein, we present an unedited gross total microsurgical resection of a histologically confirmed WHO grade III PTPR. Our aim is to demonstrate the efficiency and safety of our microsurgical technique into deep brain territories under the principle "simple, clean, and preserving the normal anatomy." For this, a posterior occipital interhemispheric approach and a proper praying sitting position were essential.

Case Description: A patient with recurrent PTPR after a subtotal resection abroad underwent sitting praying position and left occipital craniotomy. The opened dura based on the superior sagittal sinus was strongly retracted providing hemostasis of the epidural space. The pericallosal cistern was reached by an interhemispheric approach with cerebrospinal fluid release. Under careful navigation, the tumor was recognized. Following high microscopic magnification, tissue samples were obtained for immediate histological studies and internal debulking of the tumor was performed with ring forceps and long bipolar forceps as well. After a careful dissection and devascularization of the lesion, the tumor was softly but constantly pulled out with long ring microforceps in the right hand, whereas a thumb-regulated suction tube in the left hand acted oppositely, detaching the lesion from surrounding structures. Bipolar coagulation forceps were used to shrink the tumor and to remove it by piecemeal reduction. Water irrigation provided a clean surgical field and helped us to separate deep borders of the lesion by water dissection technique. Finally, careful tumor detachment from the deep venous system and meticulous hemostasis of the surgical site ensured a safe surgery. The postoperative course was uneventful. The patient underwent radiohemotherapy as an adjuvant treatment and is alive and free of recurrence almost 4 years after surgery.

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Conclusion: This unedited video offers all detailed aspects that are, as the senior author JH considers, essential for a neurosurgeon when performing an efficient and safe surgery into the pineal region for this very rarely documented papillary tumor.

Videolink: http://surgicalneurologyint.com/videogallery/pineal-region-tumor

Key Words: Papillary tumor, pineal region, posterior interhemispheric approach, sitting position, unedited microsurgical video