Microsurgical Resection of a C1-C2 Dumbbell and Ventral Cervical Schwannoma: 2-Dimensional Operative Video

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Dumbbell schwannoma of the cervical spine is a known entity,1-5 and should be radically resected with the preservation or improvement of neurological function. However, to our knowledge, an operative video of a C1-C2 cervical dumbbell schwannoma with ventral extension and dorsal spinal cord compression has not been reported previously. This tumor resection video performed by the senior author (KIA) includes details of dural opening, and techniques for microsurgical resection and for postoperative closure to avoid cerebrospinal fluid (CSF) leak and pseudomeningocele formation.

Fat grafting was performed through a small paraumbilical incision. The patient was prone in MAYFIELD 3-point pin fixation (Integra LifeSciences, Plainsboro Township, New Jersey). Intraoperative neurophysiological electrodes were placed for somatosensory evoked potential (SSEP) and motor evoked potential (MEP) monitoring. Stealth neuronavigation was used to aid in tumor localization. A small suboccipital craniectomy and C1 laminectomy were performed before opening the dura. Using a microsurgical technique, the dura was opened in the form of the letter “Y.” The right-sided dentate ligament was cut to aid in the mobilization of the tumor away from the spinal cord. After dividing the tumor at the dumbbell isthmus, the ventral tumor component was removed, with attention paid to the division of a perforator coming from the vertebral artery. Intraforaminal tumor debulking was performed with a cavitron ultrasonic surgical aspirator (CUSA) and resected.

High cervical dumbbell schwannoma should be radically resected while preserving and improving preoperative neurological function. Avoidance of CSF leak and formation of pseudomeningocele should be planned at the beginning, utilizing fascia and fat graft to avoid this feared complication.

The patient provided written consent and permission to publish her image.

KEYWORDS: Cervical, Schwannoma, Dumbbell, Ventral, Tumor, Microsurgical resection

REFERENCES


Acknowledgments

The authors wish to thank Andrew J. Gienapp (Neuroscience Institute, Le Bonheur Children's Hospital and Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, Tennessee) for copyediting, preparation of the manuscript for publishing, and publication assistance.