MYXOPAPILLARY EPENDYMOMA OF FILUM TERMINALE

Ilian G. Koev¹, Elena G. Poryazova², Tania T. Kitova³, Petar Zh. Miryanov⁴, Borislav D. Kitov¹*
¹Clinic of Neurosurgery, St George University Hospital, Plovdiv; ²Department of Pathology and Forensic Medicine, Faculty of Medicine; ³Department of Anatomy, Histology and Embryology, Faculty of Medicine; ⁴Faculty of Medicine, Medical University, Plovdiv, Bulgaria

ABSTRACT

We report a case of 56-year-old patient suffering from myxopapillary ependymoma of filum terminale at the level of the fifth lumbar vertebra. The patient presented with progressive complaints of permanent pain in the anal and sacral region with duration of 8 months. When sneezing or attempting to do brisk movements, the pain irradiated to the posterior surface of the right thigh. Vertebral syndrome was absent. Neurological examination demonstrated no other abnormalities. Magnetic-resonance imaging showed intradural tumor of cauda equina at the level of the fifth lumbar vertebra. The present article discusses the role of MRI in the diagnosis of clinical cases presenting with atypical lumbar radiculalgia. We have put an emphasis on the early diagnosis of myxopapillary ependymoma of filum terminale which has an impact on the surgical strategy and postoperative outcome.

Key words: myxopapillary ependymoma, filum terminale, cauda equina tumors, magnetic-resonance tomography

Folia Medica 2014; 56(2): 133-135

Corypsipora and reprint request to: B. Kitov, Clinic of Neurosurgery, St George University Hospital, Plovdiv; E-mail: borislavkitov@yahoo.com; Mob.: +359 898 493 442

15A Vassil Aprilov St., 4002 Plovdiv, Bulgaria
INTRODUCTION

Filum terminale tumors are relatively rare lesions affecting approximately 6% of all spinal tumors. Myxopapillary ependymomas (ME) originating from filum terminale are classified as grade I CNS tumors according to the WHO classification. They represent 25-30% of all ependymomas and affect younger individuals. These are slow-growing lesions which may reach considerable size. The clinical presentation usually includes lumbalgia and/or lumboradiculalgia. Sensory, motor and/or bowel-bladder disturbances may also develop later in the course of the disease. The clinical symptoms sometimes resemble those typical of discogenic and spondylogenic disease.

CASE HISTORY

A 56-year-old male presented with a history of 8-month-long complaints of constant progressively increasing pain in the anal and sacral region. He denied having sustained any spinal trauma. When sneezing or attempting to make rapid movements, the pain irradiated to the posterior surface of the right thigh. Neurological examination found no vertebral syndrome or any other abnormalities. Magnetic-resonance imaging showed intradural tumor of cauda equina at the level of the fifth lumbar vertebra. Proctologic study yielded no abnormalities in the anorectal region. The considered diagnosis was coccygodynia. The patient received only temporary relief from steroids and local anesthetics. He did not report any concomitant diseases. His family history was negative. Blood tests were within normal limits.

Lumbar MRI revealed intradural tumor at the level of the fifth lumbar vertebra compressing the nerve roots of cauda equina. The tumor did not spread outside the spinal canal (Fig. 1A-D).

The surgical procedure included posterior approach via L5 laminectomy followed by durotomy and microsurgical “en-bloc” resection. The lesion was capsulated with oval shape reaching the size of 3/1.6 cm. It had grayish-whitish color with slight adherence to the surrounding nerve roots but firmly attached to the filum terminale. There was no contact between the tumor and the dura.

The postoperative period was uneventful and the patient recovered completely.

Histological examination: The tumor tissue was comprised of round and ovoid cells radially surrounding the vascularized myxoid matrix. The nuclei were round and formed papillary structures amidst acellular hyaline substance (Fig. 2). The mitotic activity was considerably low. The lesion was classified as WHO grade I myxopapillary ependymoma.

Immunohistochemistry analysis: The tumor cells were positive for S-100 protein and vimentin, focally GFAP-positive and cytokeratin-negative (Fig. 3).

The neurological examination was negative at the 7th postoperative month. The postoperative MRI did not demonstrate tumor recurrence (Fig. 1. E and F).

DISCUSSION

ME represent 13% of all spinal ependymomas. They are commonly located in the region of conus medullaris and filum terminale and are 83% of the neoplasms in this area. Usually, ME is lobulated with soft consistency which aids microsurgical dissection and “en-bloc” resection. Approximately 90% of these tumors have benign nature. They follow subtle clinical onset and slow growth, thus, reaching large size which may impede total tumor removal and lead to recurrence and/or metastatic spread across the CSF pathways in 50-70% of the cases. Subtotal removal must be followed by postoperative radiotherapy.

Tumors of larger size may cause lumbar and sacro-coccygeal pain, temporarily irradiating to the legs. These are often young patients and their symptoms may be falsely related to discogenic
pathology. Only 25% of the cases develop motor and/or vegetative impairments. Therefore, delayed diagnosis is possible, thus, the tumor can reach large size resulting in subtotal resections with subsequent high recurrence rate, metastatic spread, subarachnoid hemorrhage and hydrocephalus making the treatment costly because it requires postoperative radiotherapy.

CONCLUSION

Patients with drug-resistant atypical lumboradiculalgia should be examined by MRI which can lead clinicians to the correct diagnosis unlike the CT examination which might miss intradural soft-tissue pathology.

REFERENCES


Figure 2. The tumor tissue. Hematoxylin-eosin staining (x100).

Figure 3. Immunohistochemistry for S-100 protein (x100).