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Case Report

Tanycytic Ependymoma of The Spinal Cord: Case Report

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Abstract

Tanycytic ependymoma is a rare fibrillary variant of ependymoma with preferentially located along the length of spinal cord. This report documents a 41-year-old woman underwent surgical treatment for a cervical intramedullary tumor. Magnetic resonance imaging showed intramedullary cystic lesion, in the cervical spine. Histologically the tumor was consisted of markedly elongated spindle-shaped cells, which were immunopositive for glial fibrillary acidic protein and EMA. Although only a few in number, detection of ependymal rosettes led the diagnosis as a tanycytic ependymoma. Since a complete resection was performed at surgery, no further treatment was proposed. It is important for both management and prognosis, to distinguish pathologically tanycytic ependymoma from pilocytic astrocytoma and schwannoma.

Keywords: Tanycytic ependymoma, spinal cord

Tanisitik Epandimom, Spinal Kord

Özet

Tanisitik epandimom tercihen spinal kord boyunca yerleşim gösteren nadir bir fibriller tip epandimomdur. Bu makalede servikal intramedüller tümör için cerrahi tedavi yapılmış 41 yaşında bir kadın hasta sunulmuştur. Manyetik rezonans görüntülemede servikal omurgada intramedüller kistik bir lezyon görülmüştür. Histolojik olarak tümör glial fibriler asidik protein ve EMA ile immunpozitif olan belirgin uzantıları olan iğsi hücrelerden oluşmuştur. Sayıları az da olsa, epandimal rozetlerin saptanması tanisitik epandimom tanısını koydurmuştur. Cerrahi olarak tam rezeksiyon yapıldığı için ek bir tedavi önerilmemiştir. Hem tedavi hem de prognoz açısından tanisitik epandimomun, benzer morfolojideki pilositik astrositom ve schwannomadan ayrılması önemlidir.

Anahtar Kelimeler: Tanisitik epandimom, spinal kord

INTRODUCTION

Tanycytic ependymoma is a rare fibrillary variant of ependymoma[(4)], and exhibits a decided predilection for the spinal cord[(6)]. Tanycytes are the common progenitor cells of both ependymal cells and astrocytes, which is unipolar and bipolar ependymal cells with long processes that bridge the neuropil between the ependymal lining and adjacent capillary walls[(3)]. The close morphological and immunohistochemical resemblance of normal tanycytes to the tumor cells in the tanycytic ependymoma justify their classification as a distinct variant of ependymomas, which has been adopted recently by the WHO

classification of 2000[6,7]. We want to emphasize that recognition of this variant of ependymoma is important in terms of avoiding confusion with pilocytic astrocytoma or intramedullary schwannoma.

CASE PRESENTATION

A 41-year-old woman presented with quadriparesis and atrophy especially significant in her right arm. The loss of muscle strength was more prone in distal parts of the extremities. Spastisity, Achilles' clonus and Babinski sign were detected in the lower extremities bilateraly. Magnetic resonance imaging of the cervical cord showed intramedullary cystic lesion at C2-4 level (Fig. 1). The patient underwent surgical treatment for a cervical intramedullary tumor in the Department of Neurosurgery. The lesion was completely excised. Histological examination showed that the tumor was consisted of markedly elongated spindle-shaped cells and they were arranged in interlacing fascicles (Fig. 2) which were immunopositive for EMA (Fig. 3) and glial fibrillary acidic protein (GFAP) (DAKO) (Fig. 4). Most of the tumor cells nuclei had smooth contour and contained fine chromatin. Nuclear pleomorphism was minimal. There was no mitotic figure or necrotic foci in the tumor tissue. No Rosenthal fibers were found. A concentration of slender eosinophilic cellular processes surrounding the vascular wall was seen. Tumor cells have 0.01 % expression of Ki-67. Although only a few in number detection of perivascular pseudorosettes[7], led the diagnosis as a tanycytic ependymoma. Since a complete resection was performed at surgery, no further treatment was proposed. After 6 months, the patient's symptoms and sings were resolved nearly complete except minimal weakness in the right hand. After a follow-up period of 30 months the patient is free from recurrence.

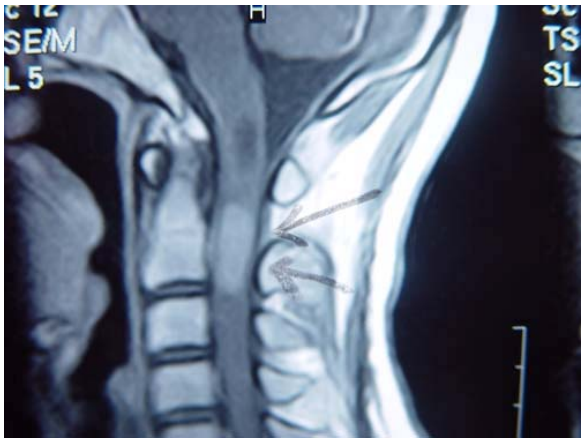

Fig 1: *Magnetic resonance imaging showing well-demarcated enhancing tumor in the spinal cord.*

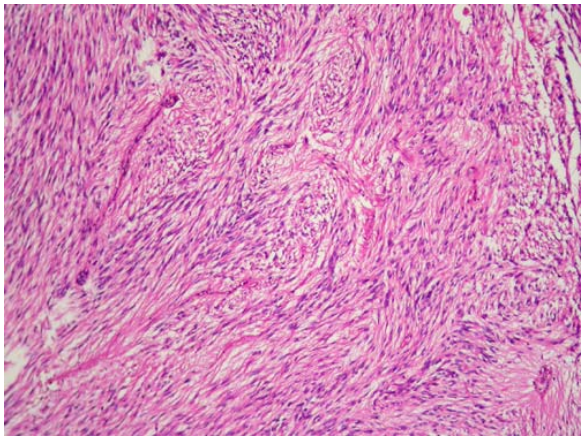

Fig 2: *Elongated spindle-shaped cells were arranged in interlacing fascicles*

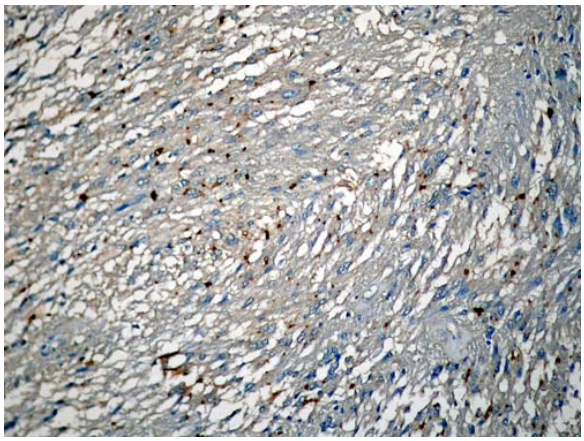

Fig 3: *Punctate EMA positivity in tumor cells.*

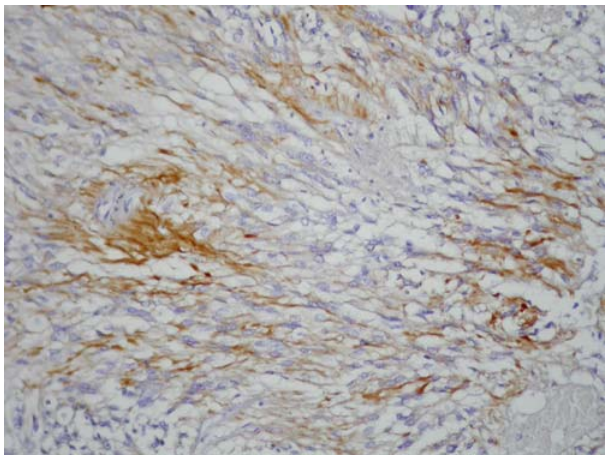

Fig 4: *GFAP positive elongated spindle-shaped cells.*

Table 1: Reported cases of tanycytic ependymoma

Author	Year	Age/sex	Location
Friede and Pollak	1978	6/M	Temporal lobe
		38/F	C6-T3
		46/F	T7-L2
		45/M	C1-T1
		17/M	C1-3
		36/F	C1-6
		35/F	T10-11
Spaar et al	1986	32/M	Cervical
Langford and Barre	1997	13/M	Parietal lobe
		52/M	T6-7
Daneyemez et al	1999	42/M	Lateral ventricle
Kawano et al	2000	45/M	T6-7
		55/F	C7-T2
		36/F	C3-6
Dvoracek et al	2001	31/F	L5-S1
Ueki et al	2001	18/F	T1
Kobata et al	2001	30/M	Spinal
Boccardo et al	2003	39/F	Cervical
Richards et al	2004	17/M	Supratentorial subcortical
Rogel et al	2005	55/F	Intraventriculer

DISCUSSION

The term tanycytic ependymoma was coined by Friede and Pollak in 1978 for fibrillary variant of ependymoma, which they assumed to have originated from tanycytes[4]. Since then, only 20 cases in humans in the literature were identified[1,2,3,4,5,8,9,11,12,13,14]. We report an additional tanycytic ependymoma occurring in the servical spinal cord. Published reportes of tanycytic ependymomas showed that they were preferentially located along the length of the spinal cord[1,3,4,5,8,9,13,14] although supra- and infratentorial locations have been reported[2,4,9,11,12]. So far reported cases of tanycytic ependymomas and localizations are shown in Table 1.

The histopathological features of ependymoma include moderate cellularity, rare or absent mitoses, ependymal rosettes and perivascular pseudorosettes. Tanycytic ependymoma lacks the histological hallmark features of classic ependymoma, being composed of elongated bipolar cells with fibrillary processes[3,7]. Histologically, they are easily confused with other glial and nonglial tumors such as pilocytic astrocytomas and schwannomas. Pilocytic astrocytoma is an architecturally and cytologically biphasic neoplasm composed of tumor cells in both fascicular and microcystic array[3,6]. While tanycytic ependymomas are found in the spinal cord, they are devoid of biphasic pattern, Rosenthall fibers, and hyaline droplets. Also adult type of pilocytic astrocytoma tends to show more anaplastic features than juvenile type[5,6]. Schwannoma may cause a problem, but it is composed of characteristic Antoni A and B structure, nuclear palisading (Verocay bodies). Antoni B areas consist of loose cells with spindle nuclei as not seen frequently in tanycytic ependymomas[6]. Tanycytic ependymomas is a compact mass of spindle cells and also strong GFAP positivity in the tumor cell cytoplasm support the tanycytic origin of the tumor cells[5].

Tanycytic ependymomas have the lowest expression of Ki-67 ranged from 0.3 to 4.6 %[10] and the most benign clinical course. But that do not absolutely correlate with outcome[10]. The prognostic significance of the proliferation index has not yet been firmly established in these tumors.

The management of the patient should be the same as ependymomas in general. Though, complete and incomplete resection is an independent prognostic factor, prognosis of tanycytic ependymoma is better than the other ependymal tumors. Despite occasional nuclear atypia, tanycytic ependymomas are grade II lesions according to WHO criteria[7]. As tanycytic ependymoma is described very recently there are no large series. The prognosis of ependymoma depends on age, extent of resection and localisation[7]. Tanycytic ependymomas demonstrate a propensity for the spinal cord and has better prognosis than cerebral lesions[6].

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