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Intra Paranchymal Atypical Cystic Menangioma with Mural Nodule: A Case Report and Pathogenesis and Radiological Feature

Aydin Kazempour Azar[1], Javad Aghazadeh[1], Firouz Salehpoor[2], Amir Rezakhah[1], Farhad Mirzaii[2], Amir Kamalifar[1*], Saber Ramezanpour[1] and Samar Kamalifar[3]

*[*1]Neurosurgery Department, School of Medicine, Urumia University of Medical Sciences, West Azarbaijan, Iran*

[2]Neurosurgery Department, School of Medicine, Tabriz University of Medical Sciences, East Azarbaijan, Iran

[3]Student Research Committee, Arak University of Medical Sciences, Arak, Iran.

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ABSTRACT

Intra paranchymal menangioma without dural attachment is a rare condition we present a 63 years old man with intra paranchymal cystic lesion which pathological diagnosis is meningioma.

Keywords: Intracranial tumor, Menangioma, Cyst lesion

INTRODUCTION

Introduction

Menangioma most common extra axial brain tumor [1], intraparanchymal with cystic part without dural attachment type is very rare and can mimic the gilioma or metastasis or other intra axial tumors, we present a patient with intra paranchymal cystic lesion with mural nodule a pathological diagnosis is atypical meningioma.

CASE PRESENTATION

An 65 years old man representing with head ache and periodic vomiting and paralysis of left upper and lower extremity from 10 days ago and dysarthria, he was treated with oral agent to control essential hypertension and history for cranial irradiation is negative, in the first step he evaluated by non-contrast brain CT, hypo dense lesion in right frontal lobe in MRI evaluation T1 sequences hypo and in T2 sequences hyper signal intraparanchymal lesion 3*4 cm with perilesional edema in right frontal with mass effect which have ring enhancement and cystic characteristic with peripheral hyper signal foci (mural nodule) in T1 with gadolinium **(Figure 1)**, patient go under edema therapy with dexametason (32 mg/day) and manitol 20% (0.5 g/kg) for 48 h patient paralysis improvement not significantly but dysartia was improve, primary diagnosis based on Imaging metastatic or high grade glioma, patient evaluated for suspected extra cranial tumor but we can't find origin for metastasis, patient go under standard microsurgery tumor resection, intraoprative finding include intra paranchymal well defined solid (mural nodule) with cystic part lesion in frontal lobe and have clear margin without invading to brain parenchyma, bone abnormality and Dural attachment was not detected. Under the microscope small cell with high ratio of nucleus/cytoplasm, Large and prominent nucleoli Pattern less or sheet-like growth (loss of lobular architecture) Foci of "spontaneous" or geographic necrosis conformity with atypical menangioma **(Figure 2)**.

Corresponding author: Amir Kamalifar, Department of Neurosurgery, Imam Khomeini Hospital, Urumia University of Medical Sciences, West Azarbaijan, Iran, Tel: 0989141534548; E-mail: amirkamalifar@gmail.com

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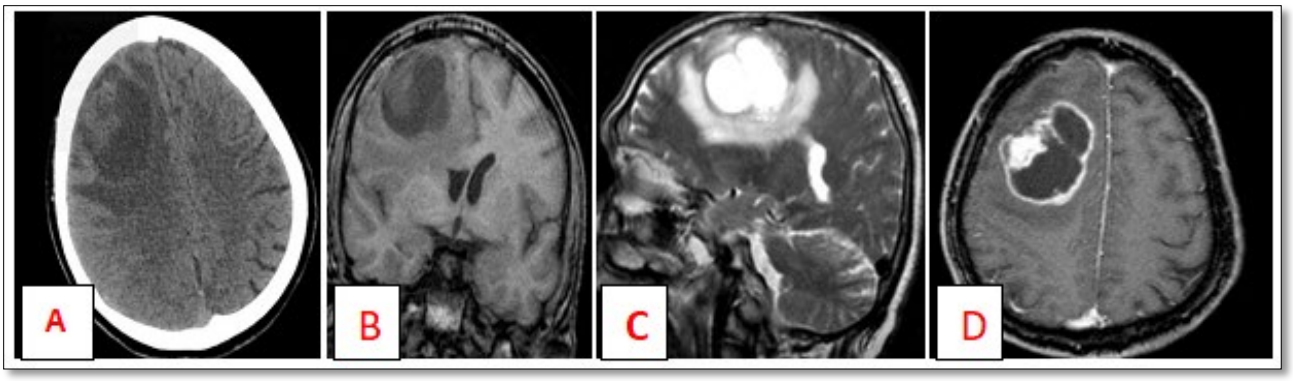

Figure 1. A) brain CT scan without contrast in axial cut hypo dense lesion in right fronto-parietal with edema; B) T1 brain MRI in coronal view hypo signal intra parenchymal lesion with mass effect and pretumoral edema; C) T2 brain MRI in sagittal view hyper signal intra parenchymal lesion with pre tumoral edema and mass effect; D) T1 with gadolinium contrast MRI in axial view a intra parenchymal lesion with ring enhancement and hyper signal foci like mural nodule in right frontal region.

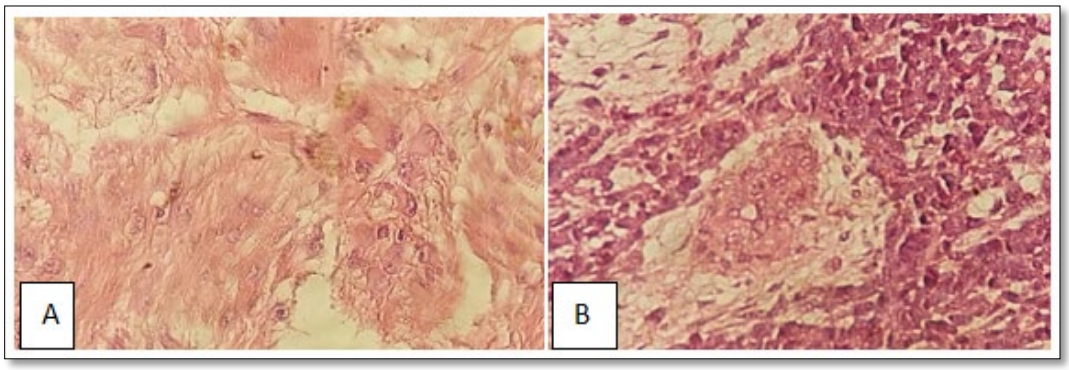

Figure 2. Microscopic finding. A) Necrotic part of tumor; B) High N/C ratio and high celullarity region.

DISCUSSION

Meningioma is commonly a solid-form tumor and extra axial with dural attachment [1], intra parenchymal and cystic menangioma is very rare and in English literature 29 cases reported [2]. Brain tumor associated with the cyst part frequently seen in gliomas and metastatic tumors. The incidences of meningiomas that are associated with cystic lesions are rare 1.6-11.7% [1-3]; several hypotheses mentioned how cystic part developed. According to the degenerative phenomenon hypothesis, the development of the cavity is due to intracellular regressive processes that cause macrocavitation [4-7], such as vacuolar, myxomatous, mucoid and fatty degeneration, oasis phenomenon also introduced by certain researchrers based on this hypothesis arterial hyalinization in necrotic part of tumor developed cavitation, many author s argued that intra tumoral hemmorrgy in angioblastic menangioma can be developed cystic part, extension of CSF to subarachinoid space around tumor which was compressed may be source of cavitation and cystic feature of menangioma, if degenerative process main cause of cyst formation longer duration of disease most probably associated with cystic part but menangioma in skull base and posterior fossa rapidly deterioration the patient condition because of raised intracranial pressure or hydrocephalus in radiological evaluation we can't see cystic part based on article cystic menangioma classified in four class and type 1 is more frequent than other [1,8] **(Table 1)**. Intra parachymal menangioma may be developed from ectopic menagoepithelial cell or piamater which encased in sulcul region and developed intra paranchymal menangioma another theory emphasis on cranial nerve sheath cells to developed intra paranchymal menangioma, because of cystic type and intraparanchymal location and pritumoral edema radiologically diagnosis some time lead neurosurgeon to glioma or metastasis and sometimes hemangioblastoma [9], but in microscopic evaluation menangioma feature is typically was seen in these cases because of older age and MRI finding metastasis and glioma was first diagnosis but pathological finding reveal us to meningioma [10].

Table 1. Radiological classification.

Radiological classification	
Type 1	Intratumoral cysts in which the tumor, macroscopically visible on all sides of the cyst, surrounds the cavity.
Type 2	Intratumoral cysts, lying at the periphery of the tumor and surrounded by a row of neoplastic cells, detectable microscopically
Type 3	Peritumoral cysts, whose walls consisted partly of adjacent parenchyma and partly of the tumor.
Type 4	Peritumoral cysts, whose walls are formed by the arachnoid, separated from the tumor by a distinct capsule

CONCLUSION

Menangioma should be in mind in cases was radiological finding not typically for glioma and metastasis; we present a patient with an intraparenchymal cystic lesion which was pathologically menangioma.

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