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AN INTERESTING CASE OF SEIZURE

General Medicine

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KEYWORDS

Newonset seizure, Glioma, AVM, Surgery.

INTRODUCTION :

Gliomas, as brain intrinsic neoplasms, are the most common primary brain tumors in adults, and are classified by the World Health Organization into four malignancy grades (I-IV). When visualized using computed tomography (CT) or magnetic resonance image (MRI), glioma may appear as a solid or cystic lesion with an unclear boundary. The lesions are clearly enhanced on contrast enhanced CT or MRI scans. Glioma coexisting with cerebrovascular malformation in the brain is rare, with only a few cases reported in the literature at present.

CASE REPORT :

49 year male was brought to casualty in a drowsy state with a history of one episode of involuntary movements of both upper and lower limbs 30 min back, episode lasting for 1min with history of tongue bite,up rolling of eyeballs,froth from mouth and deviation of angle of mouth to right.No history of fever,vomitings,headache.Not a known case of seizure disorder and no other comorbidities.Known alcoholic since 35yrs , last drink of alcohol 3 days back. on examination,Patient conscious , obeying oral commands.vitals are stable. CNS: Patient was conscious,obeying oral commands.Central nervous system examination reveals power of 4/5 in all limbs,plantar shows no response on right side and flexor on left with no signs of raised intra-cranial tension,cerebellar signs and neck stiffness.other systemic examination is unremarkable.ECG shows Sinus tachycardia[112bpm] with no signs of ischaemia or infarction.ABG reveals PH of 7.12,Pco2 of 32,Lactate of 15 and Bicarbonate of 10.4.MRI brain shows a well defined spherical T2 hyperintense mass lesion approx 2.4*2.3*2.1cm occupying the left superior frontal region with significant perilesional edema withsmall T1 hypointense component approx 7*7mm noted within the lesion.On contrast administration lesion doesn't show significant enhacement lesion is seen closely abutting the dural surface of left superior frontal region Possibilities includes:Mass lesion with haemorrhage-? Melanoma or Atypical meningioma. [summary of other investigations were listed in Table.1].Patient is started on inj.fosphenytoin,i.v antibiotics,steroids,sodium bicarbonate infusion,thiamine and other supportive measures. patient was planned for craniotomy and decompression. Left fronto parietal Craniotomy was done which shows Extra-axial haemorrhage of maximal thickness of 6mm is noted surrounding left frontal convexity with associated non-dependant air locules. A fairly defined hypodense lesion measuring 25*10mm noted in left frontal white matter.ill defined perilesional hypodensity with few hyperdense specks were noted on CT.Frontal mass lesion was sent for HPE which shows large areas of proliferation of thin&thick walled vascular spaces with intervening proliferation of oligoastrocytes With few gemistocytes.areas of hemorrhage with pigment ladden cells seen,suggestive of glioma with AV malformation.

Table.1 shows summary of other investigations

Lab parameter	value	Reference range
CBG	109 mg/dl	
S.sodium	139.6 mEq/l	136-146 mEq/l
S.potassium	4.13 mEq/l	3.5-5.1 mEq/l
S.calcium	8.1	
S.Magnesium	3.1	
S.creatnine	0.7 mg/dl	0.6-1.2 mg/dl
urea	22 mg/dl	20-40 mg/dl
Bilrubin[total]	0.8 mg/dl	0.3-1.1 mg/dl
GGT	23 IU/L	< 55 IU/L
WBC	11,800 cells	4000-11,000
hemoglobin	14.7 gm/dl	14-16 gm/dl
Platelets	2.06 lakhs	1.5-4 lakhs

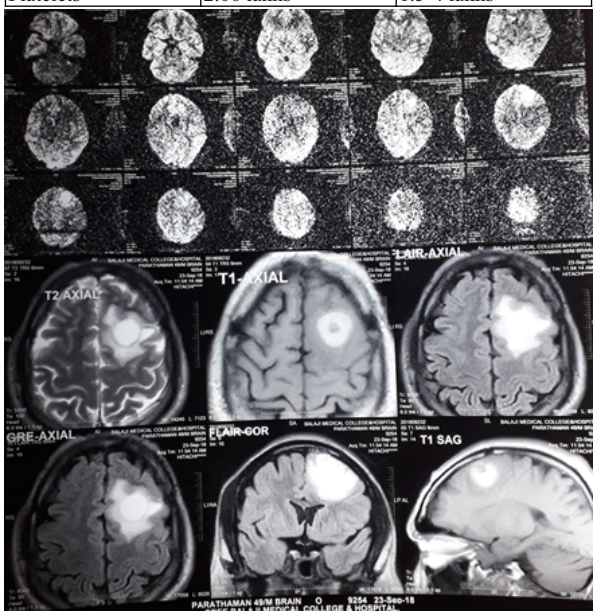

Figure:1 shows MRI brain shows a well defined spherical T2 hyperintense mass lesion approx 2.4*2.3*2.1cm occupying the left superior frontal region with significant perilesional edema withsmall T1 hypointense component approx 7*7mm noted within the lesion.

DISCUSSION :

Glioma coexisting with AVM are rare, and as AVM has a high rate of missed diagnosis and misdiagnosis, glioma coexisting with AVM simultaneously in the same location are extremely rare in the clinical practise. Certain studies have suggested that the occurrence of two lesions within the same tissue may be coicindental (2,3,5). Other studies have reported that two lesions may be preoperatively diagnosed as one (1,4). Intraoperative and histopathological examination finally confirmed the presence of the glioma, co-occurring with AOVM.Harris et al (6) reported that glioblastoma multiforme can improve the overexpression of vascular endothelial growth factor (VEGF); however, the expression of VEGF was high in the endothelial layer and media of AVM vessels (7). VEGF can promote growth of endothelial cells of blood vessels and the glioma cells can promote growth, migration and tubular formation of endothelial cells. VEGF plasma concentrations were significantly higher in patients with cerebral AVMs compared to a healthy control

group (8). Zuccarello et al (9) observed notable glial cell proliferation around the AVM and large glial cells gathered among abnormal blood vessels.

The wide clinical use of CT, MRI and DSA may markedly improve the accuracy in the diagnosis of intracranial tumors and cerebrovascular disease. However, the incidence of missed diagnosis and misdiagnosis in the two diseases coexisting in the same lesion remains high, particularly in combination with AVM. Despite DSA being considered the gold standard for the diagnosis of AVM, certain AOVMs cannot be found, which may lead to frequent .In addition, it is important that MR angiography (MRA) and MR venography (MRV) may clearly reveal the feeding arteries and drainage venous of AVM, which is valuable for surgery. Therefore, MRI, MRA and MRV should be performed in case of doubt or inconsistencies in CTA or DSA preoperative results. Microsurgical treatment is considered the best treatment for glioma coexisting with AVM (2,3). Both lesions should be removed through the same incision, unless they are in different sites. The more dangerous lesion of the two should be removed first to avoid intraoperative bleeding.

In conclusion,we report a rare case of glioma coexisting with AVM.

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