

# Ruptured basilar top aneurysm presenting with status epilepticus in an infant: A Rare Case Report.

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## ABSTRACT

Seizures are one of the most common neurological emergencies seen in pediatric age group. Rupture of intracranial aneurysm is one of the rare causes of seizures in children. Rupture of basilar top aneurysm causing seizures in pediatric age group is rarely reported in literature. Here we report a case of 5 months old baby who presented with status epilepticus. Neuroimaging showed a ruptured basilar top aneurysm with subarachnoid haemorrhage and extension of bleed into 3rd and 4th ventricle.

**Keywords:** Basilar top aneurysm, Status epilepticus, subarachnoid haemorrhage.

## INTRODUCTION

Though most of the true intracranial aneurysms are congenitally present they rarely manifest in paediatric age group. They usually present symptomatically after the age of 30 years with a female preponderance. Intracranial aneurysms usually affect the Circle of Willis at the bifurcation of arteries, approximately 33% arises from at the anterior communicating artery, 33% at the origin of posterior communicating artery, 20% at the middle cerebral artery and only 14% involving the vertebral and basilar circulation. The paediatric basilar aneurysms are pathophysiologically different entity than aneurysms seen in adult patients with a male preponderance. The most common aneurysm in paediatric age group involves internal carotid artery.<sup>[1]</sup> In contrast to adults posterior circulation is more commonly affected in children and mass effect secondary to aneurysmal dilatation rather than haemorrhage is more common presenting symptom. Though the mortality from intracranial aneurysms is same in paediatric and adult patients, the aneurysms in paediatric age group is associated with recurrences and consequently there is a need for life long follow up and screening for recurrence.<sup>[2]</sup>

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Common causes of intracranial aneurysms in children include infections (mycotic aneurysm), certain genetic disorders like marfans syndrome,

ehler danlos syndrome, tuberous sclerosis, Neurofibromatosis-1, Adult polycystic kidney disease, Telangiectasia, infantile Pompe disease, idiopathic aneurysms and secondary to vasculitis.<sup>[3]</sup>

We report here a case of 5 month old child with basilar top aneurysm who presented with generalised tonic clonic seizures. This case emphasise that intracranial aneurysm though rare should always be kept in mind even in paediatric patients who present with seizures and signs and symptoms consistent with intracranial hemorrhage

## CASE REPORT

A 5 months old child was admitted with status epilepticus. Baby was given loading dose of phenobarbitone (20mg/kg/dose) followed by 2 repeat doses of phenobarbitone till the cumulative dose of phenobarbitone reached to 40mg/kg. The child didnt respond to phenobarbitone and convulsions continued. Then the child was loaded with phenytoin in the dose of 10/mg/kg to which the baby responded. Patient was kept NBM and was started on IV fluids, IV antibiotics Phenobarbitone and phenytoin were continued in maintainance doses. A detailed history was taken. There was no history of birth asphyxia or similiar illness in any other family member. There was no history of trauma, head injury, fever or refusal to feed previous to seizures. A CBC was done which was within normal limits except for haemoglobin of 10.5 gm/dl. Electrolytes and random blood sugar levels were normal. An urgent CT scan was done which showed a large saccular aneurysm at the top of basilar artery with evidence of sub-arachnoid haemorrhage in

perimesencephalic cistern with extension of bleeding into 3rd and 4th ventricle.

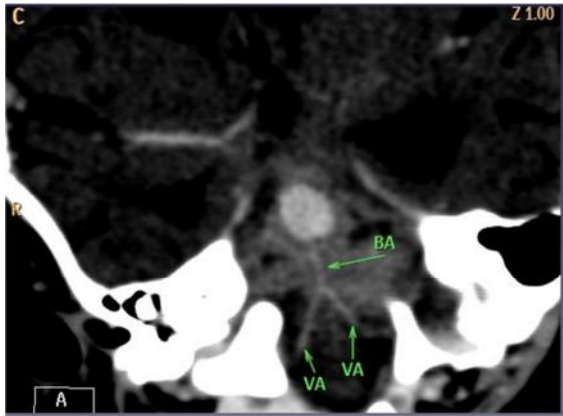


Figure 1: Basilar top aneurysm.

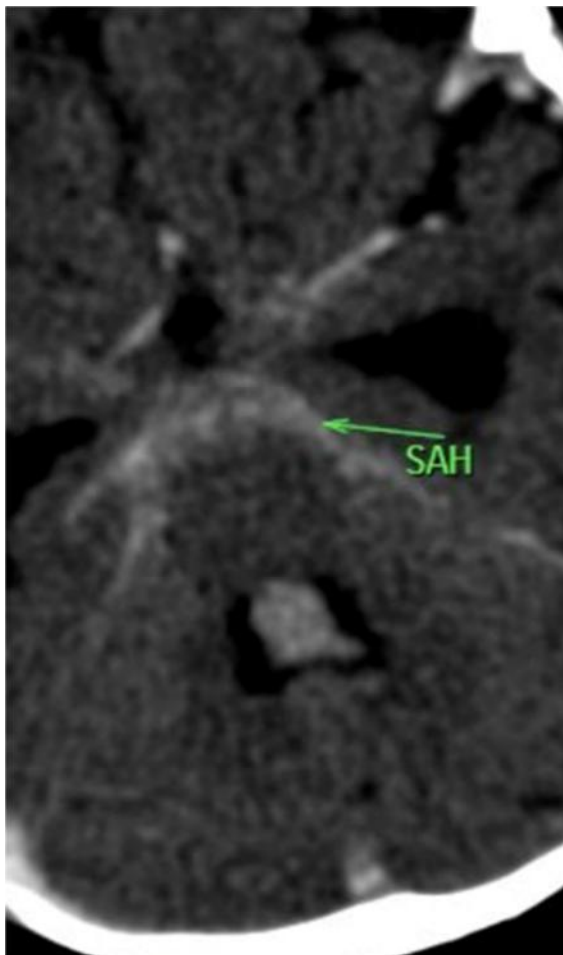


Figure 2: Subarachnoid haemorrhage secondary to basilar top aneurysm.

A neurosurgery opinion was sought and surgical evacuation was planned. Unfortunately the child deteriorated rapidly with the rapid fall in glasgow coma scale, shallow breathing and falling saturation levels. The baby was intubated and started on positive pressure ventilation. Eventually the patient died before any neurosurgical intervention could be done.



Figure 3: Evidence of intraventricular extension of haemorrhage secondary to rupture of basilar top aneurysm involving 3rd and 4th ventricle.

## DISCUSSION

Intracranial aneurysms are rare in children and when present they usually are located in posterior circulation.<sup>[4]</sup> The most common site for aneurysm in children is internal carotid artery with a male preponderance.<sup>[5]</sup> Unlike in adults intracranial aneurysms in infants have higher incidences of aneurysms of the middle cerebral artery and its branches and in the vertebrobasilar system. The size of aneurysms is more in children in comparison with the adults due to which children with aneurysms more commonly present with mass effects rather than secondary to intracranial haemorrhage.<sup>[6]</sup> Despite the need for life long follow up and screening for recurrence of aneurysm the prognosis in children is better because of growing central nervous system in infants.<sup>[7]</sup> Exact cause of aneurysms in infancy is not known and its epidemiology is poorly understood. Common pathologies associated with intracranial aneurysms in pediatric age group are marfan syndrome, ehler danlos syndrome, tuberous sclerosis, Neurofibromatosis-1, Adult polycystic kidney disease, Telangiectasia, infantile Pompe disease, idiopathic aneurysms, pseudoxanthoma elasticum and secondary to vasculitis.<sup>[8]</sup> The usual manifestations of intracranial aneurysms in children

is due to pressure effects but a ruptured intracranial aneurysm may present as sudden onset strong headache associated with bradycardia, vomitings, altered sensorium, seizures and focal neurological deficit. Rupture of intracranial basilar aneurysm usually cause subarachnoid haemorrhage which may lead to raised intracranial pressure, hydrocephalus and ischaemic injury to neurons.<sup>[9]</sup>

The initial management of a ruptured intracranial basilar top aneurysm consist of supportive management in intensive care unit , maintainance of airway, breathing and circulation, and anticonvulsants for seizures. The definitive treatment includes surgery or endovascular management. Whether to go for surgery like craniotomy or endovascular management like coil embolisation depends upon availability of expertise, type and location of aneurysm, general condition of the patient and presence of hydrocephalus. Conservative and supportive management is done in unstable patients with poor general condition in whom surgical or endovascular interventions are not possible.<sup>[10]</sup>

## CONCLUSION

Though intracranial aneurysms are uncommon in paediatric age group they should be kept in mind while treating children presenting with seizures especially if there is a history of severe headache and signs of raised intracranial pressure.

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