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Case Study

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SUDDEN DEATH DUE TO RUPTURE OF BASILAR ARTERY ANEURSYM: A RARE AUTOPSY FINDING.

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ABSTRACT

Death due to rupture of basilar artery is a rare phenomenon. Basilar artery aneurysms represent only 3-5% of all intracranial aneurysms but are the most common aneurysms in the posterior circulation. In present case, a 12 year old girl had sudden loss of consciousness and was diagnosed to have subarachnoid haemorrhage secondary to rupture of basilar artery aneurysm during autopsy examination. Such presentation in a tender age is rare and very few cases of this being noted in literature, warranting its mention.

KEY WORDS: Sudden death; Basilar artery aneurysm; subarachnoid haemorrhage; autopsy.

INTRODUCTION

Basilar artery is a large median vessel formed by the union of the vertebral arteries at the mid medullary level and extends to the upper border of the pons. It lies in the pontine cistern, and follows a shallow median groove on the ventral pontine surface. The basilar artery terminates by dividing into two posterior cerebral arteries at a variable level but most frequently in the interpeduncular cistern, behind the dorsum sellae.[1]

Aneurysm means an out pouching of a blood vessel wall that is filled with blood. Aneurysm occurs at a point of weakness in the vessel wall. This can be acquired disease or hereditary factors. The repeated trauma of blood flow against the vessel wall presses against the point of weakness and causes the aneurysm to enlarge.[2]

Case History

In the early morning period of the school a 12 year old girl was attending her class. During the course of her classroom teaching, the teacher of the class noticed that the girl suddenly collapsed on her desk. She was unconscious and was immediately rushed to nearby hospital where she declared as brought in dead condition by the treating doctor. The body was subjected to post mortem examination and brought to our medicolegal autopsy center.

Autopsy examination

On external examination the deceased was average built girl having dressed in school uniform. She was lying in supine position with well developed rigor mortis in whole body and fixed post-mortem lividity over back and buttocks. The tip of tongue was clenched in between the teeth. Lips and nail-bed showed cyanosis. There was no evidence of any external injuries over body.

On internal examination there was diffuse subarachnoid haemorrhage over both cerebral and cerebellar hemispheres. There was an aneurysmal sac of size 3.5cm x 2cm present at the origin of basilar artery. A rent of size 2mm was seen on right side of aneurysm with haematoma surrounding the sac. Brain was congested and edematous. (Fig 1) All other internal organs were intact without any gross anatomicopathological lesions. The cause of death was opined to be subarachnoid haemorrhage secondary to rupture of basilar artery aneurysm.

DISCUSSION

Aneurysm of brain is a common cerebrovascular disorder caused by a weakness in the wall of a cerebral artery or vein. This disorder may result from congenital defects or from pre

existing conditions such as hypertensive vascular disease and atherosclerosis or from head trauma. Cerebral aneurysms occur more commonly in adults than in children and are slightly more common in women than in men however they may occur at any age.

Before an aneurysm ruptures, the individual may experience such symptoms as a sudden and usually headache, nausea, vision impairment, vomiting and loss of consciousness or the individual may be asymptomatic experiencing no symptoms at all.

A.Feldges et. al. reported rupture of basilar artery in traumatic and bacterial aneurysms leading to subarachnoid haemorrhage and sudden death.[3] Saccular aneurysms also known as berry aneurysms appear as a round out pouching and are most common form of cerebral artery aneurysm.[4] These aneurysms are almost always the result of hereditary weakness in blood vessels and typically occur within the arteries of the Circle of Willis.

Saccular aneurysms tend to have a lack of tunica media and elastic lamina around its dilated location (congenital) with wall of sac made up of thickened hyalinised intima and adventitia. Almost all aneurysms rupture at their apex. This leads to haemorrhage in the subarachnoid space and sometimes in brain parenchyma. Minor leakage from aneurysm may precede rupture causing warning headaches. About 60% of patient die immediately after rupture.[5]

Fatal subarachnoid haemorrhage due to ruptured vertebrobasilar aneurysm was disclosed during autopsy of a child.[6]

In the present case, subarachnoid haemorrhage occurred due to rupture of basilar artery aneurysm. The girl was young and was asymptomatic and bright in academics as per parents. In this case it was a ruptured non traumatic non infective congenital saccular aneurysm of basilar artery resulting in sudden death.

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