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A Rare Case of Internal Carotid Occlusion with Anterior Communicating Aneurysm

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Abstract
Anterior communicating artery aneurysm is the most common form of intracranial aneurysm. We present a rare case of a rare case of internal carotid occlusion with anterior communicating aneurysm of a 33 years male patient. The male patient presented with sudden severe headache with transient visual loss in right eye and double vision with squint on right eye for 26 days. All the symptoms subsided within 12 days except headache which persists till to date. On neurological examination patients higher psychic function was normal. Cranial nerves were intact, Optic disc- Pailloedema on both sides. In the investigations, CT scan of brain revealed subarachnoid hemorrhage. CT angiogram of brain showed subtotal occlusion in extra and intracranial part of right internal carotid artery with a small aneurysm in anterior communicating artery (2.2 x2.18 mm). The period of 14 days, the CT angiogram of brain revealed the same radiological findings. Some EC-IC collaterals through petrosquamous artery were found to middle cerebral artery on right. Arteriographic evaluation of the anterior communicating artery region is necessary so that preexisting aneurysms may be documented and treated.
Keywords: *Anterior communicating artery aneurysm, Optic disc- Pailloedema, CT scan, Arteriographic evaluation.*

1. Introduction

Aneurysm formation is a late complication related to a ligation or clamp-occlusive method[1]. To date, aneurysm formation has not been suggested as a complication of carotid balloon occlusion but may additionally grow to be important with growing numbers of carotid baloon occlusions. Furthermore, the ability difficulty cases are subarachnoid hemorrhage caused by aneurysms that advanced inside the anterior cerebral artery region after balloon occlusion of an aneurysmal inner carotid artery[1].

Formation of de novo aneurysms is a nicely-identified overdue trouble, which can lead to past due hemorrhage[2]. Hemodynamic modifications of the cerebral circulation in the circle of Willis and contralateral carotid artery may additionally predispose sufferers to the formation of de novo aneurysms at those web sites. Risk elements inclusive of gender, age, records of hypertension, cigarette smoking and more than one aneurysm also may also play a function in formation of latest aneurysms[2]. As such, surveillance imaging, blood strain control and smoking cessation presently make up the essence of any long-time period control plan for sufferers diagnosed with a cerebral aneurysm, irrespective of previous surgical remedy[3].

Therefore, the presence of large aneurysm is often showed via differential analysis for brain tumor[4]. Since aneurysm of the internal carotid artery and the anterior communicating artery is positioned intently to the optic nerve, it's miles often observed for the duration of surgical operation that aneurysm compresses the optic nerve[4]. In some instances, surgery well-known shows the rupture of aneurysm closer to the optic nerve resulting within unfold of hematoma at the nerve, or tight adhesion among the nerve and the aneurysm, or an occasional presence of aneurysm sac compressing the nerve[4]. In this situation, we describe a unprecedented case of internal carotid occlusion with anterior communicating aneurysm of a affected person.

Case Study

A 33 years male presented with sudden severe headache with transient visual loss in right eye and double vision with squint on right eye for 26 days. (Figure 1) All the symptoms subsided within 12 days except headache which persists till todate. On neurological examination patients higher psychic function was normal. Cranial nerves were intact, Optic disc- Pailloedema on both sides.

To conduct the investigations, CT scan was done to the patient. The scan test of brain revealed subarachnoid hemorrhage of the patient. Furthermore, CT angiogram of brain showed the subtotal occlusion in extra and intracranial part of right internal carotid artery. (Figure 2) A small aneurysm in anterior communicating artery was found with the size of 2.2 x2.18 mm (Figure 3) The patient was initially treated conservatively as it was a rare combination of stenosis of internal carotid artery and aneurysm in anterior communicating artery.

After the vasospasm period of 14 days the CT angiogram of brain revealed the same radiological findings. (Figure 4) There were some EC-IC collaterals through petrosquamous artery to middle cerebral artery on right.

Figure 1: A 33 years old patient with a rare case of internal carotid occlusion with anterior communicating aneurysm

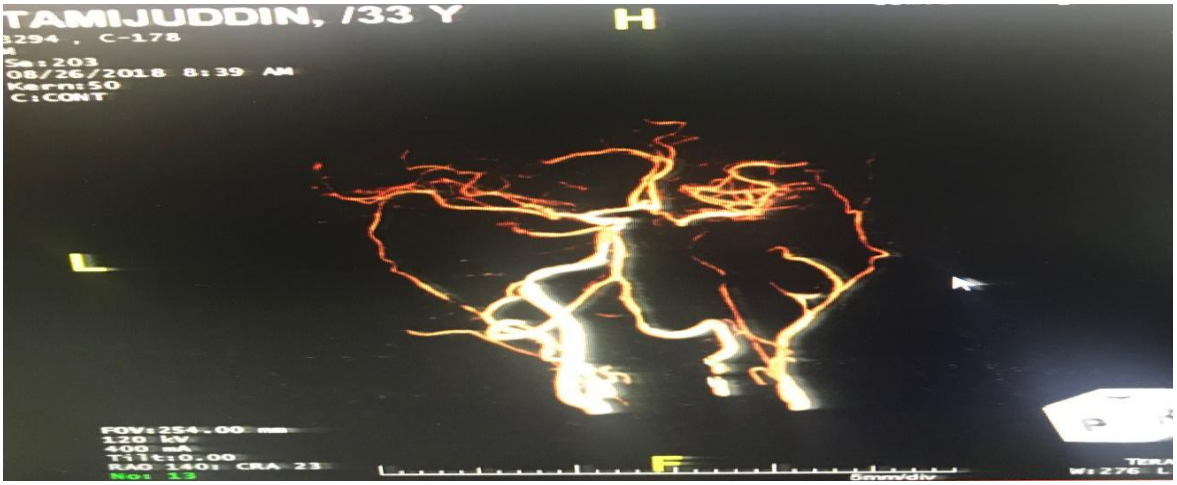

Figure 2: CT scan of brain revealed subarachnoid hemorrhage. Subtotal occlusion in extra and intracranial part of right internal carotid artery

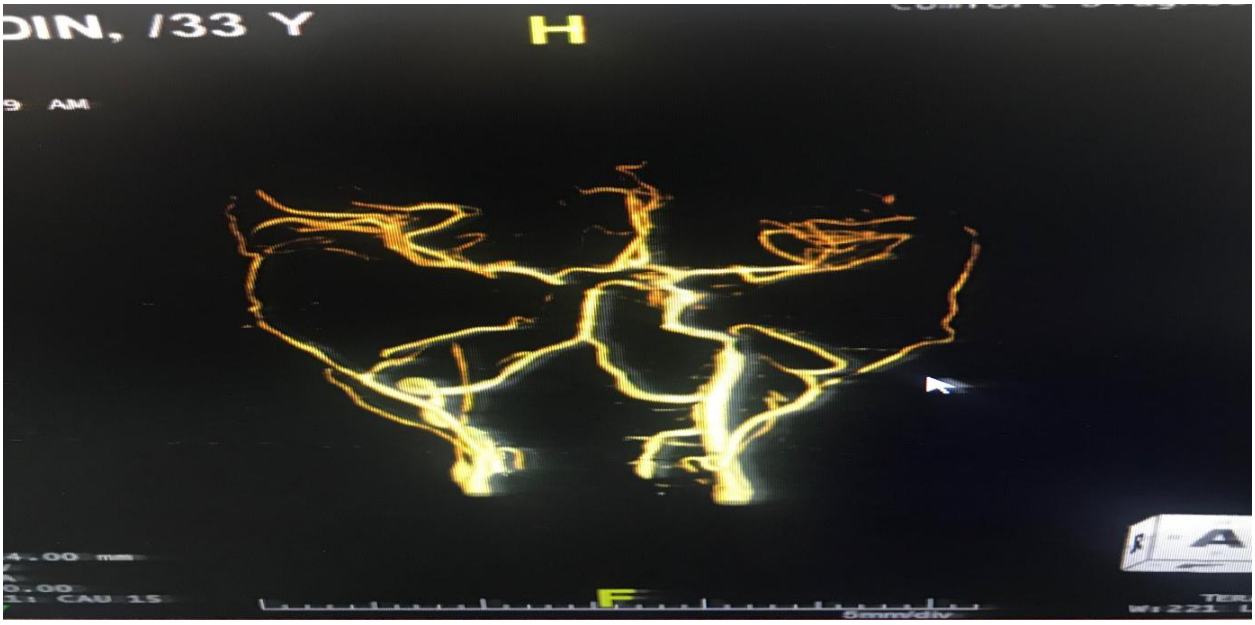

Figure 3: A small aneurysm in anterior communicating artery (2.2 x2.18 mm)

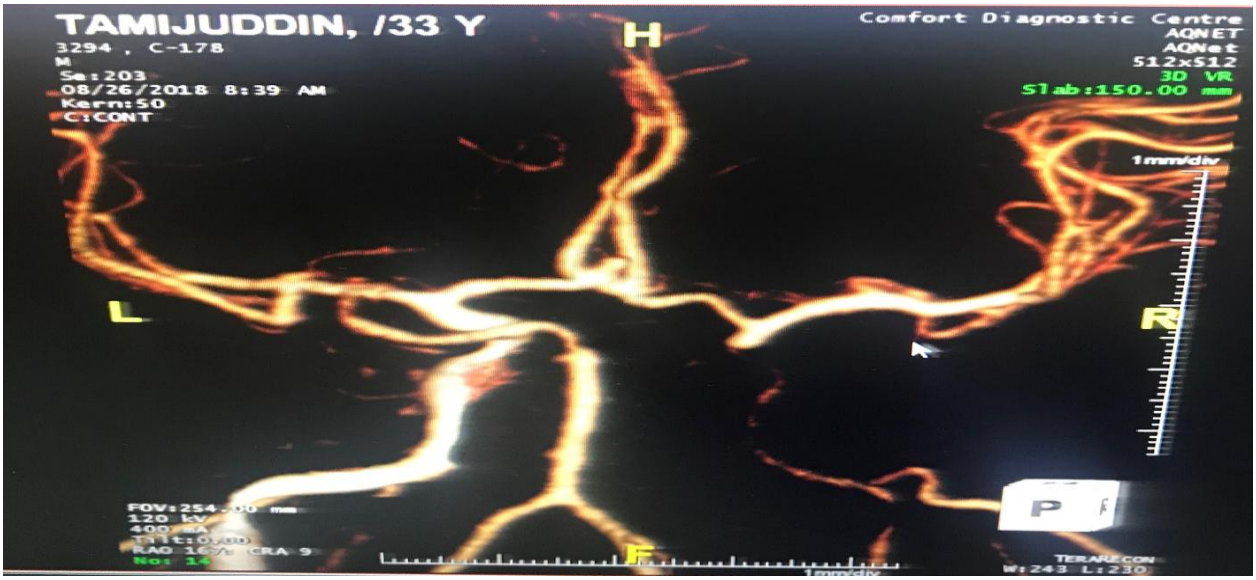

Figure 4: After the vasospasm period of 14 days the CT angiogram of brain revealed the same radiological findings. There were some EC-IC collaterals through petrosquamous artery to middle cerebral artery on right.

Discussion

Anterior communicating artery aneurysm is the maximum commonplace shape of intracranial aneurysm, accounting for 25-38% of overall cerebral aneurysm instances[5].

Anterior speaking artery is a short artery connecting the left and right anterior cerebral arteries that journey closer to the anterior superior part of the brain and take a seat in the direction of the anterior superior path from the optic chiasm. Location-based analysis suggests that optic chiasm is the most common web site of intracranial aneurysm[6].

The protrusion route of intracranial aneurysm is mainly decided by using the difference of both anterior cerebral arteries (right and left) thickness and through the route of relatively thicker anterior cerebral artery[4]. In such cases, intracranial aneurysm must protrude in the anterior inferior direction, in close touch with the optic pathway, and compress the pathway as they increase in size[7].

Symptomatic formation and/or enlargement of aneurysms as a late trouble of internal carotid artery occlusion has been in moderation mentioned. An overview of the literature reported that an incidence of symptomatic aneurysm formation between 4% and 10% [8]. A hemodynamic case for aneurysm formation has been made earlier than and may very likely play a role within the formation and/or expansion of these aneurysms[9].

The capacity for this hardship, therefore, is anticipated to boom with time[1]. As but, this occasionally documented incidence of symptomatic anterior speaking artery aneurysm development is insufficient to alter our regular advice for balloon occlusion of the inner carotid artery for tough to clip aneurysms in patients who tolerate transient balloon occlusion[10].

Conclusion

Here we discussed approximately a unprecedented case of inner carotid occlusion with anterior communicating aneurysm Therapeutic artery occlusion can be an critical option in treating aneurysms which can be otherwise not amenable to surgical or endovascular treatment. Besides, arteriographic assessment of the anterior speaking artery location is wanted in every affected person in whom carotid artery occlusion is being considered so that preexisting aneurysms can be documented and dealt with. Moreover, observe-up CT, magnetic resonance imaging, and magnetic resonance angiography examinations after inner carotid artery occlusion should be scrutinized for the viable improvement of an aneurysm inside the anterior communicating artery location.

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