



SPONTANEOUS INTERNAL CAROTID ARTERY DISSECTION – PRESENTING AS TRANSIENT ISCHEMIC ATTACK (TIA).

KEYWORDS

Dissection, Internal carotid artery, Stroke, Transient ischemic attack.

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ABSTRACT *Internal carotid artery dissection is one of the most frequent cause of stroke in young people. Although thromboembolism is supposed to be the main stroke mechanism in ICA dissection, hemodynamic change can also play an important role, especially in cases of intracranial dissection. We present a case of 35 years old female with no medical history and no signs of trauma who was admitted to our hospital for transient ischemic attack due to right internal carotid artery dissection.*

INTRODUCTION:

Internal carotid artery dissection (ICAD) is one of the most frequent cause of stroke in young and middle aged patients, that accounts for up to 20% ischemic stroke in young [1]. Seventy percent of patients are under 50 years old and there is a slight predominance of males [2]. ICAD leads to embolic rather than hemodynamic cerebral infarction [3]. Dissection of the ICA can occur spontaneously without an identified etiology or in the context of trauma (or) physical exertion as trivial as lifting a heavy object, coughing (or) in cases of cervical manipulation. Other etiological factors include smoking, hypertension, use of oral contraceptive pills, vessel pathologies (such as Ehlos Danlos syndrome) and fibromuscular dysplasia. Spontaneous ICAD usually occurs unilaterally, but may occasionally occurs synchronously in both carotid arteries. ICAD may cause mass effect on the surrounding structures causing Horner's syndrome or cranial nerve palsies [4].

Clinical presentation varies widely and classically does not appear until 12 to 24 hours after injury. Neurological symptoms sometimes may be delayed for several weeks [5]. It may be asymptomatic, but some patients may initially present as neck pain or headache. Neurologically some patients present with cerebral infarction or transient ischemic attacks as like as in our case.

CASE REPORT:

A thirty five year old female who was admitted to our hospital for sudden onset of weakness of left upper limb and lower limb, facial asymmetry in the form of right side deviation of angle of mouth. Both events are normalized within four hours. The patient had no medical history. At the admission to our hospital the neurologic examination revealed right central facial palsy, left hemiparesis. Babinski reflex on her left side and the patient was conscious.

Diagnostic evaluation routine laboratory blood tests he-

matological screening, biochemical profile, urine analysis, coagulation profile, and vasculitidis profile that were normal. Electrocardiography, chest X-ray and trans-thoracic echocardiography were normal. Native CT scan revealed no abnormality. Doppler ultrasonography study suggestive of right internal carotid artery dissection. The family denied any kind of trauma of the head and neck.

So we continued the evaluation with a MRA(Magnetic Resonance Angiography) reconstructed images showing narrowing of right internal carotid artery with irregularity of the wall surface with tapering, 'string sign' positive, double lumen in right ICA on axial images suggestive of right ICAD(Fig-1,2,3).

DISCUSSION:

Internal carotid artery dissection was reported by Jentzer [6] in 1954. It has been increasingly recognized as a cause of stroke particularly in young individuals [7,8]. ICAD may be asymptomatic or symptomatic and some of the cases have fatal stroke and the cause not determined [9]. Several explanations have been proposed for neurological symptoms and stroke that results from ICAD. Most events are thought to be results from embolization, possibly from an area of carotid thrombus formation. The local thrombus may result from altered flow patterns (or) Local arterial wall injury. Cerebral hypoperfusion and insufficient collateral blood supply is not usually thought to be responsible for symptoms [10]. The ultrasound component of the duplex scanner will often show a double lumen with an intimal flap, minimal atherosclerotic changes in the arterial wall, occlusion of the arterial lumen, a narrowed lumen with intima overlying intramural thrombus or a long tapered stenosis.

Contrast arteriography has traditionally been the most accurate study for diagnosis of ICAD [11]. Typically the involved artery shows a string sign with a long tapered narrowing [12]. Because patients who have ICAD are at

increased risk for contralateral ICAD or vertebral artery dissection, duplex scans can also monitor the status of these arteries. MRA is reported to be both sensitive and accurate in the diagnosis of ICAD. In our case young female presented as transient ischemic attack, on routine work up is uneventful. Ultra sound Doppler shows double lumen ICA, MRA shows 'string sign' which is diagnostic. Based on imaging findings ICAD diagnosis was made.

CONCLUSION:

Spontaneous dissection of the ICA has become an increasingly recognized cause of stroke, primarily in young patients. Patients who have ICAD often have prodromal symptoms before stroke. Our case is young female presented with transient ischemic attack, on evaluation based on Doppler and MRA findings diagnosis of right ICAD was made.

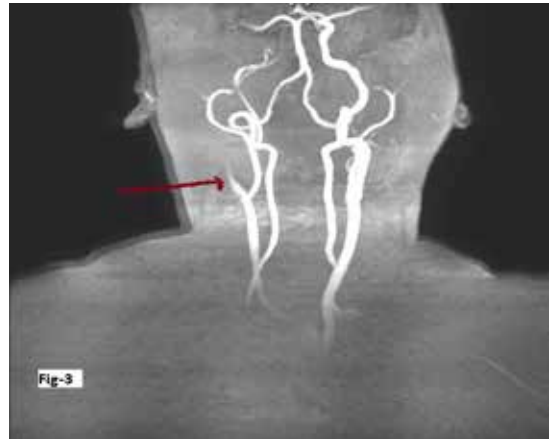


Fig-3: MRA showing "string sign "(arrow)

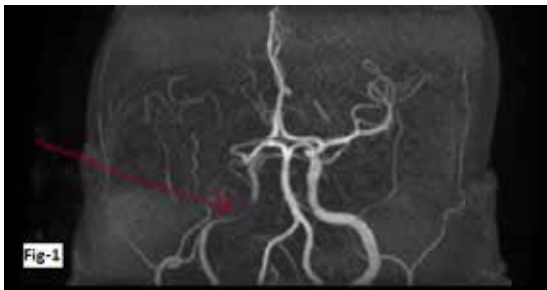


Fig-1 : MRA reconstructed images showing narrowing of ICA with irregularity of the wall surface with tapering.

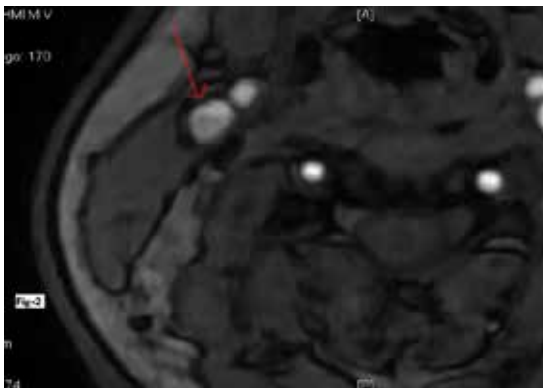


Fig-2: MRA contrast axial images showing double lumen in ICA.

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