

Subarachnoid Haemorrhage in a Patient with Complaints of Recurrent Headaches and Neck Pain since Two Months Ago: A Case Report

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ABSTRACT

Background: Headache is one of the most important complaints in patients referred to the emergency department. Subarachnoid haemorrhage (SAH) is a major differential diagnosis in these patients, which usually occurs as a severe and sudden headache that the patient has not experienced so far. In this case the patient complaint of recurrent headache within 2 month that is a rare manifestation of SAH.

Conclusion: The SAH is one of the most critical differential diagnoses in headache and always must be consider in patients with no specific diagnosis. In suspected patients brain CT scan and LP should be done to confirm SAH.

Key words: Headache, Subarachnoid haemorrhage

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INTRODUCTION

Headache is one of the most common complaints in patients referred to the emergency department. Subarachnoid haemorrhage (SAH) is one of the critical differential diagnoses in these patients and proper management of these patients in an emergency room are significant diagnoses in these patients. The current article discusses the incidence of SAH in a patient with normal primary CT scan.

CASE PRESENTATION

The patient was a 42-year-old man with recurrent headaches complaining during the past two months and increasing their frequency during the last two days with neck pain, referred to the emergency room; he was conscious and had a verbal response. Early signs were as follows: BP: 150/80 HR: 85, RR: 19, T: 37 (Axillary), SpO₂: 98%, (RA), BS: 121

In the history taking, the patient was complaining of recurrent headaches over the past two months. These headaches were usually made twice to three times per week in the occipital lobe. The patient took acetaminophen and rested in dark places to relieve his

headache. The patient had no history of a specific illness; there was no history of a headache in the family. During the last two days, in addition to increasing the severity and frequency of headaches, it caused the patient not to be able to come to work (the occupation was a teacher); the neck pain was added to the sign of the illness and was accompanied by nausea and vomiting. Clinical examination of the head and neck had no abnormality, except for the minor pain in the neck flexion. Other examinations were done but results were unremarkable.

During the examination, the fundus eye had briefly bilateral retinal vein thickening, but not papilledema. The patient's initial tests showed only an increase in haematocrit of Hct: 42 and respiratory acidosis. The patient's electrocardiogram had no evidence of arrhythmias or electrolyte imbalance. Regarding the complete clinical examinations, and headache and neck pain changes, the patient underwent a CT scan without contrast agent (Figure 1), which had no abnormal indication. Considering that the patient's pain did not recover significantly, despite several injections of NSAIDs and opioids in the emergency department, he was subjected to lumbar puncture, which was positive regarding xanthochromia, RBC=110, WBC=0, opening pressure: 15 cm H₂O. With the diagnosis of SAH, he was treated with 60-mg Nimodipine every four hours, control of systolic blood pressure with Labetalol (maintaining blood pressure between 130 and 160 mm Hg), opioid analgesia, anti-nausea and blood glucose control between

130 and 160. The patient was transferred to the ICU and subjected to the computed tomography angiography after 3 days of severe symptoms under the supervision of the neurosurgery service; the result was normal (Figure 2). A week later, the patient was discharged with a good general condition, preserving blood pressure control. An angiographic finding that performs 2 weeks later shows small aneurysm with no other complication.

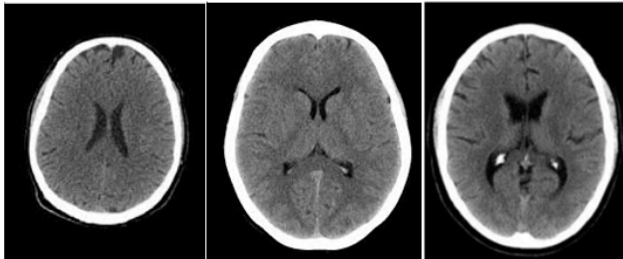


Figure 1: Brain CT scan of patient with no significant pathology

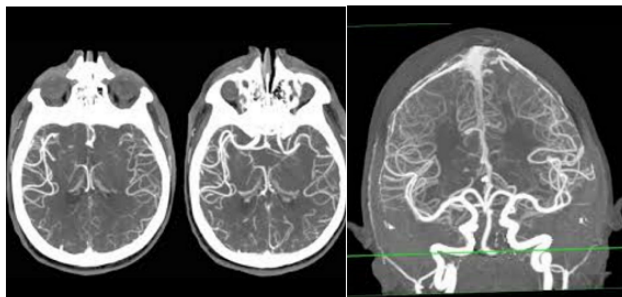


Figure 2: Brain CT angiography of patient with no significant pathology

DISCUSSION

The SAH accounts for about 10% of strokes and the most common cause of death due to stroke. A maximum of 80% of patients with non-traumatic SAH may experience a saccular aneurysm. Other causes include arteriovenous malformation, cavernous angioma, mycotic aneurysm, and neoplasm and blood dyscrasia. The SAH may be secondary to the spread of intraparenchymal cerebral haemorrhage to the subarachnoid space. The aneurysmal SAH risk increases with age and often occurs at the age of 40 to 60 years. It is estimated that up to 2% of the population has aneurysm and the risk of aneurysmal SAH increases with an increase in aneurysm size. Other risk factors include hypertension, smoking, excessive alcohol consumption, and the use of sympathomimetic agents. About 1% of all patients with a headache complained to the emergency department were affected by SAH. Many SAH patients die before entering the hospital and the mortality risk rate before the hospitalization varies from 3% to 26% [1]. Clinical manifestations of patients are the worst headaches of their lifespan, which abruptly develops. In 20% of patients, the headache has been associated with the activity or conduct of Valsalva manoeuvre or sexual intercourse. The SAH headache usually reaches its maximum in a few seconds or minutes [1]. Other concurrent symptoms in patients include syncope, nausea, vomiting, neck stiffness, photophobia, and seizure, which are related to the severity of SAH, in

this case neck stiffness and headache was clue to diagnosis. Meningism is present in more than 50% of patients, and up to 20% of patients have focal neurologic signs.

Funduscopic examination in these patients showed preretinal or subhyaloid hemorrhage. The patients may experience third or sixth nerve palsy as well. The third nerve palsy pupil involvement due to the spread of posterior communicating artery aneurysm causes Mydriasis. The prognosis of these patients is related to the neurological status of patients on admission. Based on the classification of Hunt and Hess, in accordance with clinical symptoms and manifestations, the patients are divided on admission. Accordingly, the outcomes of the disease will also be different. The patients with Grades 1 and 2 of haemorrhage had a good outcome. The patients with haemorrhage Grades of 4 and 5 had an inappropriate outcome, with a decrease in consciousness. Grade 3 patients were sleepy and at risk of progression and worsening of clinical conditions [2]. Considering SAH is important in patients with sudden and severe headaches or the presence of associated symptoms, and in the absence of clinical response to treatments, CT scan without contrast is recommended in the first step. In cases of acute haemorrhage below 24 hours, the diagnostic sensitivity of third-generation CT scans is 90% in the detection of haemorrhage, but this sensitivity is reduced to 50% at the end of the first week [3]. Perry et al. reported the diagnostic accuracy of CT scan in the first 6 hours of symptoms with a sensitivity and specificity of 100% [4]. If the CT scan is not diagnostic and the patient is still suspected of SAH, the LP will be recommended for the diagnosis of SAH [4]. The result of a cerebrospinal puncture in these patients will be positive xanthochromia which is a diagnostic criterion for this haemorrhage. This yellow pigmentation takes 12 hours to complete this process [4]. The presence of RBC less than 100 in the fourth tube reduces the probability of an aneurysmal SAH [5]. Computed tomography angiography (CTA) is one of the diagnostic tools for detecting cerebrovascular anatomy and determining the severity and location of haemorrhage. The CTA is also recommended in case of patient dissatisfaction with performing LP or not being able to do so. However, it should be noted that the CTA can be reported normal if the clinical symptoms have lasted for a few days [6]. The diagnosis of SAH will be completely ruled out if the CT scans have no normal contrast and CSF analysis, and no longer required to perform CTA. Up to 90% of SAH patients have concurrent electrocardiograms, indicating cardiac ischemia. Typical changes in the ECG in these patients include ST-T wave changes, U wave changes and prolonged QT interval [7]. Clinical diagnostic criteria can be used to standardize assessments. However, these criteria do not reduce diagnostic measures, such as LP and CT SCAN [8].

RECOMMENDATION

The diagnosis of SAH is vital in the headaches with no clinical response to conventional therapy or with concurrent symptoms. In patients with headache always

thinks for SAH as differential diagnosis. In these patients' careful examination and diagnostic imaging as brain CT scan and lumbar puncture can be helpful in diagnosis and must be considered.

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CONFLICT OF INTEREST

The authors declared no potential conflicts of interests.

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