



## Retrospective and Follow up study of acute headache

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**Abstract:** We studied patients admitted with sudden, severe acute headache over a 4 years period. In the study 26 out of 400 patients with sudden headache had normal CT scan and a normal CSF. Patients were re-examined after a mean of 29 months. None had a subarachnoid bleeding and none of the patients had developed a serious disease. Three patients had experienced periods of more than one week lasting headaches suggesting tension type headache. Thirteen patients had suffered from further incidences of acute headache. It is concluded that although sudden headache attack with normal CT and normal CSF examination may reoccur it is a benign phenomenon in spite of the dramatic character of the event.

**Keywords:** acute headache, migraine, lumbar puncture

### Introduction:

Headache is a common complain in Emergency Departments, but only a small percentage of patients have a serious disease [1]. Severity of headache and especially abruptness of onset ("like a blow on the head") raises the fear of SAH [2]. Patient presenting with acute headache should have a detailed clinical examination followed by CT or MR scan of the brain. Patients with normal scans should have a lumbar puncture performed to exclude small subarachnoid warning bleeding. [3,4]. We studied all patients admitted to Roskilde Hospital over a 4 year period with acute headache in order to identify patients with acute headache in whom both clinical and Para clinical examinations were normal and in whom a specific diagnosis could not be reached at initial phase.

### Patients and Method:

Patients attending the Neurological Department during a 4-year period, with a diagnosis of headache or headache related disease were identified by means of the hospitals computer system. Of 400 patients 26 met the inclusion criteria of acute headache of sudden onset without obvious cause and with normal clinical examination and normal CT or MR scan and a normal cerebrospinal fluid. The following parameters were extracted from the medical records: "Age, sex, family history and previous headache history. Description of the nature of the headache including time course, quality of pain, location of pain and the presence of accompanying symptoms. Finding on admission by clinical examination, blood pressure, results of routine laboratory studies and the result of CT/MR scan and

lumbar puncture." Patients were contacted by letter and invited to the hospital for a follow-up interview and clinical re-examination. Five patients, one male and four females did not want to or were unable to come to hospital; they were interviewed by telephone or through a written questionnaire. Four patients were lost to follow-up; they were not found in the mortality register and were thus still alive.

### Initial results:

#### Overview of case study

Clinical data for this study was collected by the physician in the emergency department, and included the following: age, sex, conscious level, photophobia, vomiting, sexual intercourse, characteristics of headache (quality, duration, location), previous headache, predisposition to migraine, history of hospitalisation, speech disturbance, nystagmus, neck stiffness and other relevant physical signs.

#### Sex and Age distribution.

Of twenty-six patients, fifteen (58%) were female and eleven (42%) male. The mean age was 39 years with a range of 16 - 55 years.

Location of headache differed between male and female. In female 11 (73,3%) had a unilateral headache, 3 (20%) had a diffuse headache, and in one patient the headache was (6,7%) occipital. In men 2 (18,2%) had unilateral headache, in 5 (44,4%) it was diffuse and in 3 (27,3%) the headache was occipital (Table 1).

Table 1: View of location

| Location     | Gender |       | Total | Chi-square |
|--------------|--------|-------|-------|------------|
|              | Female | Male  | F+M   |            |
| Hemi cranial | 11 7,8 | 2 5,2 | 13    | 7.011      |
| Occipital    | 1 2,4  | 3 1,6 | 4     | 6.838      |
| Diffuse      | 3 4,8  | 5 3,2 | 8     | 2.431      |
| Total        | 15     | 10    | 25    |            |

Unilateral headache was more common in females than in males  $p < 0.05$  Fisher test.

- In total patient 13 (59%) had hemi cranial headache.
- In all but one patient the headache started while the patients were awake.
- In two males and one female onset of headache occurred during sexual intercourse. In further 9 patients headache started during exertional physical activity.
- Eleven patients complained of nausea at time of admission. One patient had visual disturbance.
- In one patient the examining physician felt that the patients had neck stiffness.

### Result of follow-up:

Of the 26 patients who met the inclusion criteria, 17 showed up to invitation and five did not want to or were unable to come to hospital (4 replied to a questionnaire and one was interviewed by telephone). Four patients were lost to follow-up; they were not found in the mortality register and were thus still alive.

Tabel 2: Location in follow-up with Fisher test

| Location of headache | Gender | Fisher test value        | Association |
|----------------------|--------|--------------------------|-------------|
| Total                | M+F    | 0,029<br>( $p < 0.005$ ) | Yes         |
| Hemi cranial         | M+F    | 0,015<br>( $p < 0.005$ ) | No          |
| Occipital            | M+F    | 0,267<br>( $p > 0.005$ ) | No          |
| Diffuse              | M+F    | 0,194<br>( $p > 0.005$ ) | No          |

Patients were seen for re-examination after a mean of 29 months range: 6-52. None of the patients who were re-examined had suffered from any major illnesses from the time of admission until the time of follow up. All patients were essentially healthy.

Six males had had a further attack of the same character as the initial headache; the same was true for 7 females. A total of 3 patients, all females, had experienced headache lasting for a week or more during the time of follow up but none had developed a chronic headache.

Five patients took painkillers more than once weekly. Two patients had lost their job during the follow up period, the social status were unchanged in all the other patients. Hence there was no obvious impact of the illness on the patients' capability to function within the society.

### **Discussion and conclusion:**

Relapses of headache in patients previously admitted with sudden headache seem to be common and were seen in half of our patients. However none of our patients were readmitted to hospital because of relapse and none of our patients developed any serious disease during the time of follow up. Six patients had experienced periods with headache lasting more than one week probably representing tension type headache but none had developed a chronic headache. It therefore seems safe to conclude that sudden headache where CT scan and examination of cerebrospinal fluid is normal is a benign disorder [5].

An exact diagnosis could not be reached in any of our patients. Eleven females and two males had a unilateral headache and although the headache in none of these patients fulfilled the clinical criteria for migraine [6] it might have been a first attack of migraine with atypical symptomatology. The significant overweight of females in the group of patients with unilateral headache points in the same direction since migraine is much more common in females [7]. Physical strain especially during sexual intercourse has repeatedly been described as a possible course of sudden headache [8,9,10,11] and may have been the course of headache in 12 of our patients.

Although it is often not possible to reach an exact diagnosis in-patient with sudden onset headache we think that patients when thoroughly examined can be assured that although they have experienced a dramatic and freighting illness it is a benign condition [12,13,14].

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