Cranial Ct Scan Findings In Patients With Headache

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الخلاصة

الصداع واحد من اكثر الاعراض المرضية التي يقوم اطباء الجملة العصبية بعلاجها .تصف هذه الدراسة نتائج فحص القحف بجهاز المفراس لدى (140) مريضا يعانون من الصداع .تمت هذه الدراسة في قسم الاشعة \ وحدة المفراس في مستشفى الديوانية التعليمي للفترة من تموز 2008 الى ايلول 2009 ، وكان ارسال المرضى يتم عن طريق العيادات الخارجية لطب الجملة العصبية والباطنية .

الغرض من الدراسة هو تحديد الشذوذ داخل القحف بجهاز المفراس لمرضى الصداع ومحاولة اكتشاف حالات مرضية مهمة يعاني المصابون بها من حالات صداع غير واضحة الملامح .طبقا لنتائج الاستقصاءات بجهاز المفراس تم تقسيم المرضى الى مجموعتين :-

الاولى : تضم 107 (76,4 %) مريضا لم يبين الاستقصاء لديهم اي علامات غير طبيعية .

الثانية : تضم 33 (23,6 %) مريضا اظهر الاستقصاء اصابتهم بحالات مرضية متعدده ، تم تقسيمهم كالتالي :

12 مريض مصابون بالتهاب الجيوب الانفية مع تكلس الخلايا الهوائية خلف الاذن الداخلية 10 مرضى يعانون من اورام ونزيف داخل القحف 8 مرضى مصابون بضمور الدماغ 3 مرضى مصابون بجلطة دماغية. تشخيص المرضى اللذين يعانون من اورام ونزيف داخل القحف في هذه الدراسه يؤكد اهمية المفراس في اكتشاف حالات مرضية مهمة يعاني المصابون بها من حالات صداع غير واضحة الملامح .

Abstract

Objectives : 140 patients with non specific headache referred from neurology and medical outpatient clinics were studied to review the cranial computerized tomography findings and check if there were any significant lesion detected by CT scan.

Methods : The patients were assessed using CT apparatus Siemens Somatom Emotion soft ware version A40A at Al-diwanyia teaching hospital during the period from July 2008 to September 2009 .

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CT images were taken with 5 mm slices , intravenous contrast enhancement were done to confirm the diagnosis in patients with cerebral tumors .

Results : The patients divided into two main groups on the basis of imaging findings:

Group 1: No abnormality detected in cranial CT scan examination of 107 patients (76.4 %) .

Group 2 : 33 patients (23.6 %) with abnormal cranial CT scan examination .

Abnormal CT findings divided into : 12 patients with sinusitis or sclerotic mastoid air cells, 10 patients with intracranial space occupying lesion (SOLs) , 8 patients with cerebral atrophy , 3 patients with cerebral infarction .

Conclusion : patients with intracranial SOLs in our study confirms that significant lesions can be detected by CT scan in patients with non specific headache not completely fulfilling international headache society criteria.

Introduction

Headache is one of the most common symptoms that neurologists evaluate.[1] The cause or type of most headaches can be determined by a careful history supplemented by a general and neurological examination and by applying the strict criteria proposed by the International Headache Society (IHS) [2].The official International Headache Society or "IHS"criteria for headache are: 1. Migraine : recurrent headaches separated by symptom-free intervals and accompanied by any three of the following: -abdominal pain - complete relief after sleep -nausea or vomiting - aura (visual, sensory, motor) - hemicrania - throbbing , pulsatile quality and/or positive family history of migraine.

-Migraine without aura -Migraine with aura -Transformed (chronic)migraine.

2. Tension type headache : either episodic tension-type headache or chronic tension-type headache (with or without medication overuse) .

3. Cluster Headache and chronic paroxysmal hemicrania
4. Chronic daily headache unassociated with structural lesion including :
-new daily persistent headache (with or without medication overuse) .
- Hemicrania continua (with or without medication overuse).
Headache disorders are divided into 2 subgroups –primary and secondary according to the criteria proposed.[3]
Ninety percent of the people have complaints of headache at least once during their lives, and it is impossible to perform neuroimaging studies in all of them.[4]

There are at least two reasons that make the patient consult a physician for headache:

a) Because he or she is afraid of having an intracranial lesion such as brain tumor or aneurysm .
b) Because the pain is severe enough to negatively influence her or his quality of life.[5]

Neuroimaging should always be requested in the case of the presence of alarm signs (red flag signs): [6 , 7]

1) Abnormalities in neurological examination .
2) Atypical headache not completely fulfilling IHS criteria.
3) Changes in headache pattern .
4) Lack of response to therapy.
5) Presence of abnormalities in other investigations, such as skull x-ray and EEG.
6) Headache in patients with extracranial neoplasm.

In this retrospective study, we aimed to review the cranial computerized tomography (CT) findings in patients with non specific headache and check if there were any significant lesion detected by CT scan.

Material and Methods

This is a retrospective analysis of CT findings of 140 patients with headache as primary complaints , not completely fulfilling international headache society criteria.

81 (57.9 %) of them were females, and 59 (42.1 %) were males whose ages ranged between 12 to 80 years.

They referred to our department (radiology department in Al-diwanyia teaching hospital) from neurology and medical outpatient clinics from July 2008 to September 2009.

CT apparatus was Siemens Somatom Emotion soft ware version A40A .

CT images were taken with 5 mm slices , intravenous contrast enhancement were done to confirm the diagnosis in patients with cerebral tumors .

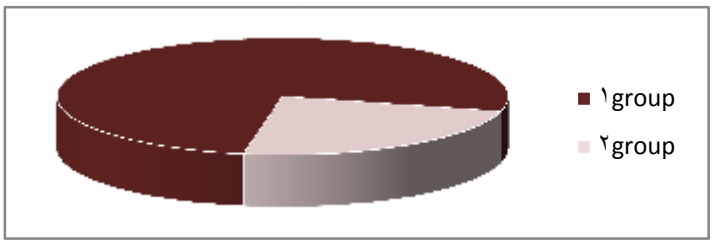
Results

After analysis was completed, results were divided into two main groups on the basis of imaging findings:

Group 1: No abnormality detected in cranial CT scan examination of 107 patients (76.4 %) , 65(60.7%) of them were females, and 42(39.3 %) were males , whose ages ranged between 12 to 66 years.

Group 2: those with abnormal cranial CT scan examination .

33 patients (23.6 %) , 18(54.5%) of them were females, and 15(45.5%) were males , whose ages ranged between 14 to 80 years.



Abnormal CT findings divided into :

There were 12 patients with sinusitis or sclerotic mastoid air cells(Table 1), 10 patients with intracranial space occupying lesion (SOLs) (Table 2) ,

8 patients with cerebral atrophy (Table 3), 3 patients with cerebral infarction (Table 4) .

Table 1. patients with sinusitis ,retention cysts or sclerotic mastoid air cells.

Patient	Age/sex	CT Scan Findings
1	38/ F	Rt frontal & ethmoid with Lt antral sinusitis
2	35/ M	Rt antral retention cyst
3	28/ F	Bilateral antral acute sinusitis
4	75/ M	Rt antrum acute sinusitis
5	40/ F	Rt antrum acute sinusitis
6	24/ F	Rt antrum and Rt ethmoid sinusitis
7	42/ M	Rt antral retention cyst
8	20/ M	Ethmoid sinusitis
9	57/ F	Bilateral antral retention cysts
10	48/ F	Bilateral mastoid air cells sclerosis
11	24/ F	Rt mastoid air cells sclerosis
12	40/M	Lt mastoid air cells sclerosis

N.B:patients 4&9 show cerebral atrophy associated with the mentioned findings.

Table 2. patients with intracranial space occupying lesions .

Patient	Age/sex	CT Scan Findings
1	45/ M	Rt sided cerebral tumor (glioma)
2	62/ F	Rt sided subdural haematoma
3	28/ F	Cerebral tumor and biventricular hydrocephalus
4	40/ F	Supra-sellar tumor (meningioma)
5	62/ F	Rt sided meningioma
6	41/ M	Bilateral symmetrical basal ganglia calcifications
7	80/ F	Rt frontal lobe calcification and haemorrhage
8	40/ F	Lt basal ganglia tumor
9	32/ M	Lt subdural haematoma
10	14/ F	Supra-sellar tumor

Table 3. patients with cerebral atrophy.

Patient	Age/sex	CT Scan Findings
1	61/ M	Cerebral Atrophy
2	70/ M	Cerebral Atrophy
3	80/ M	Cerebral Atrophy
4	75/ M	Cerebral Atrophy
5	62/M	Cerebral Atrophy
6	70/ M	Cerebral Atrophy
7	62/ M	Cerebral Atrophy

8	67/F	Cerebral Atrophy

Table 4. patients with cerebral infarction.

Patient	Age/sex	CT Scan Findings
1	65/F	old cerebral infarction
2	60/F	old lacunar basal ganglia infarction
3	67/ F	bilateral recent cerebral infarctions

N.B: patients 2& 3 show cerebral atrophy associated with the mentioned infarctions.

Table 5. patients distribution according to the age.

CT findings	Below 50 Y	51-60Y	More than 60 Y	Total
NAD	92	9	6	107
Sinuses & mastoid lesions	10	1	1	12
SOL	7	0	3	10
Cerebral atrophy	0	0	8	8
Cerebral infarction	0	1	2	3
Total	109	11	20	140

Discussion

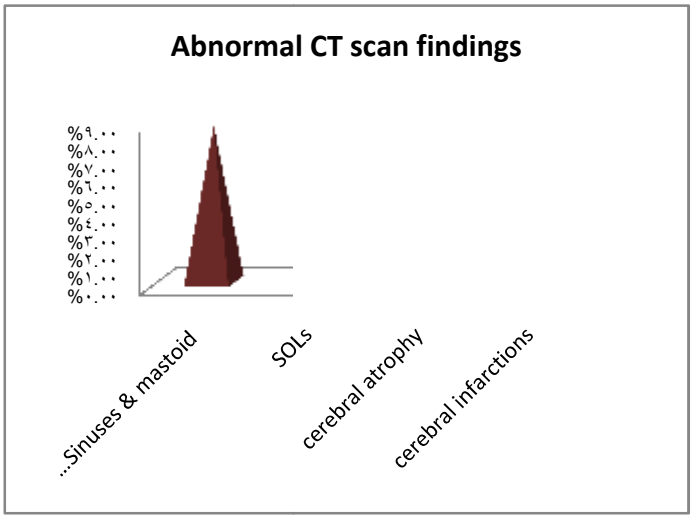
Headache is the most frequent reason for asking a neuroimaging study.[4] Standard textbooks advice consideration of imaging procedures for patients if there is a suspicion of various brain tumors, epidural-subdural-intracerebral hematoma, hydrocephalus, cerebral abscess and meningeal carcinomatosis.[8]

There are a few case reports in which patients with chronic headaches and no additional findings had gross intracranial pathologies detected by CT.[6]

The present study demonstrated that CT scan was abnormal in 23.6 % of the patients with non specific headache.

The chance of para-nasal sinuses or mastoid abnormalities were 8.6 % ,

7.1% of patients show intracranial SOLs , 5.7 % of patients show cerebral atrophy , 2.2 % of patients show cerebral infarctions .



For our patients, results were comparable to one of the previous Study , Sargent et al studied 177 patients with chronic headache of unspecified type with unenhanced CT Scans , for the overall group 28% abnormal .[9] But on the contrary, Akpek studied 592 chronic headache and didn't find any significant abnormality.[10]

10 patients with abnormal CT examination (8patients with cerebral atrophy and 2 patients with old cerebral infarctions) are elderly patients whose ages ranged between 60 to75 years ,these changes particularly the generalized cerebral atrophy is routine concomitant of the ageing process and is a normal finding in elderly , increasing with age [11] , so higher percentage of detected abnormality in our study in comparison with other studies may be related to those elderly patients involved .

10 (7.1%) patients show intracranial SOLs which is significant percentage confirm that significant lesions cab be detected by cranial CT scan in Iraqi patients with non specific headache (second aim of our study) .

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