

NOF-FOCAL DEFICIT HEADACHE AND STRUCTURAL BRAIN LESIONS: ROLE OF COMPUTED TOMOGRAPHY

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ABSTRACT

Objective; Pattern of structural brain lesion detection on CT brain in cases presenting with non focal deficit headache. **Study design;** Cross-sectional **Setting;** Department of Medicine, Sir Ganga Ram Hospital and National Hospital and Medical centre, Lahore **Duration;** February 2018 to September 2018. **Methodology;** The cases were selected with age > 20 years of both genders with history of headache lasting more than 1 month without any focal deficit. The cases with any previous stroke and documented cases of any malignancy were excluded from this study. They then underwent CT brain plain at Radiology department of the same institute. The pattern of different lesions detected were noted. **Results;** In this study, there were 50 cases out of which 32 (64%) were females and 18 (36%) were males. The mean age of the patients was 31.67 ± 7.13 years. On CT brain, normal scan was seen in 35 (70%) of the cases. It was followed by sinusitis seen in 11 (22%), otitis media in 2(4%) and brain abscess and SOL in 1 (2%) cases each. There was no significant difference among these findings with respect to gender except that normal scan was seen in 78.2% females and 55.6% males with p value of 0.11. **Conclusion;** Headache is common but structural brain lesion is not that common and the most detected lesion is sinusitis.

KEYWORDS: Headache, CT, CSOM, SOL.

INTRODUCTION

Headache is the most often reported neurological symptom in emergencies and outpatient departments.^[1] It has two types primary and secondary and the latter is defined as the headache which is secondary to some underlying cause. Secondary headache can again be sub-classified to structural brain lesion (infarct, bleed, malignancies, abscesses, hydrocephalus, and aneurysm) or have referred pain due to sinusitis, otitis media or some bony pathology.^[2] There is a great degree of fear among some patients that they suffer from a severe disease and therefore warrant further diagnostic investigations.

Patients with structural brain lesions or referred pain usually present with focal deficit like hemiplegia, monoplegia, cranial nerve abnormalities or associated symptoms of ear discharge or pain respectively. But there are cases that report headache even without such deficit and are diagnosed on neuroimaging with such lesion and intervention have avoided unwanted serious CNS damage.^[3,4]

CT and MRI both have been used in the diagnosis of lesions with structural lesions of the brain and have shown good results. But the issue is headache without

focal deficit, which on one hand can diagnose the lesion early and on the other hand undue investigations can put a lot financial burden on patients in developing country like Pakistan.^[5-7]

A large review of 3026 scans of patients with headache assessed by CT brain showed only a minority of patients suffered from a serious disease accounting for only 2.8% in the form of brain tumors, arteriovenous malformations, hydrocephalus, aneurysm, subdural hematoma strokes and malignancies.^[8]

OBJECTIVE

To determine the pattern of structural brain lesion detection on CT brain in cases presenting with non focal deficit headache.

MATERIALS AND METHODS

It was a cross-sectional study which was conducted at Department of Medicine, Sir Ganga Ram Hospital and National Hospital and Medical centre, Lahore during February to September 2018. The cases selected via non probability consecutive sampling. The cases were selected with age > 20 years of both genders with history of headache lasting more than 1 month without any focal

deficit. The cases with any previous stroke and documented cases of any malignancy were excluded from this study. They then underwent CT brain plain at Radiology department of the same institute. The pattern of different lesions detected were noted. All the data was analyzed on SPSS version 20.0 and chi square test was applied to see for significance and p value less than 0.05 was considered as significant.

RESULTS

In this study, there were 50 cases out of which 32 (64%) were females and 18 (36%) were males. The mean age of the patients was 31.67 ± 7.13 years. On CT brain, normal scan was seen in 35 (70%) of the cases. It was followed by sinusitis seen in 11 (22%), otitis media in 2(4%) and brain abscess and SOL in 1 (2%) cases each as shown in figure I. There was no significant difference among these findings with respect to gender except that normal scan was seen in 78.2% females and 55.6% males as in table I with p value of 0.11.

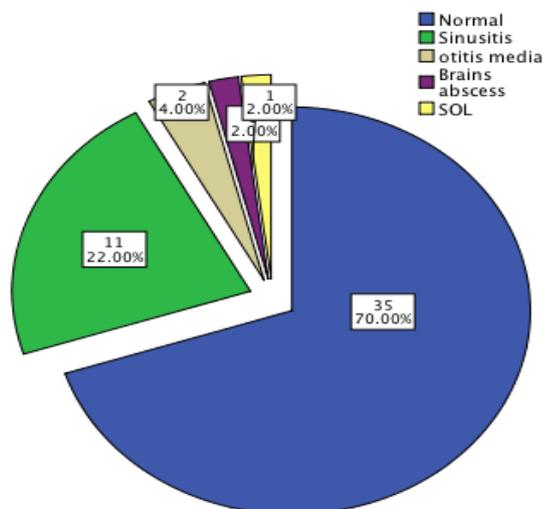


Figure I: Pattern of lesions.

Table I: Pattern of lesions and gender (n=50).

Pattern of lesions	Gender		Total
	Male	Female	
Normal	10 (55.6%)	25 (78.2%)	35
Sinusitis	6 (33.4%)	5 (15.6%)	11
CSOM	1 (5.5%)	1 (3.1%)	2
Brain abscess	0 (0%)	1 (3.1%)	1
SOL	1 (5.5%)	0 (0%)	1
Total	18 (36%)	32 (64%)	50 (100%)

p= 0.11

DISCUSSION

Headaches are well-reported entities in the emergency departments and add to the high burden regarding investigations. On one hand it is just a subjective feeling and there is no underlying disease or cause found even in the context of extensive investigations, but on the other hand it is predictor of sever or mild underlying causes.

In the present study there were 35 (70%) cases that did not have any abnormality. This was also observed by the other studies as well that revealed that the yield of underlying disease on CT presenting with headache is very less. In a study done by Fazel R et al it was only 10%.^[9] While in another study they used clinical warning criteria (CWC) for headache and then assessed these cases with CT brain and they found that 64.3% had absolutely normal CT and 35.7% had finding.^[10] Similar was reported from a study in Nepal where the normal CT was seen in 73% of cases.^[11]

On CT brain, normal scan was seen in 35 (70%) of the cases. It was followed by sinusitis seen in 11 (22%), otitis media in 2(4%) and brain abscess and SOL in 1 (2%) cases each. This was similar to study done by Rai GS et al that conducted on 500 cases with headache and 374 had normal CT, while sinusitis was the most common finding affecting 58 cases and 13 with CSOM abscess were seen in 10 and SOL in 5 cases.^[12]

There was no significant difference among these findings with respect to gender except that normal scan was seen in 78.2% females and 55.6% males with p value of 0.11. Similar results were also seen by the study by Lipton RB et al that found the females to suffer from these headaches with a ration of 2:1 to 3:1.^[13] The headache with normal CT were also more common in females and the reason of this can be explained as migraine and tension headache are more common in females and these are the types where CT brain turns normal. A good number of cases in males also had normal CT and the reason can be cluster headache, which is also a type with normal CT and is common in males.^[14]

CONCLUSION

Headache is common but structural brain lesion is not that common and the most detected lesion is sinusitis.

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