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CHRONIC HEADACHE;
THE ROLE OF WATER VIEW IN RADIOLOGY

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ABSTRACT... Objective: Radiological imaging modalities are playing vital role for detecting the causes of headache. Unfortunately these investigations are costly and out of reach for common people Conventional radiology is the investigation of chronic headache with ear, nose and throat problem. Water view is most frequently advise for studying the sinuses nasal septum and bony component and is of great help of patient with chronic Headache. **Setting:** Department of Radiology Dow Medical College. Karachi. **Period:** Three month prospective study from October 2003—December 2003. **Result:** Both male and female patients of different age group with complaint of chronic Headache was advised for water view 19 were male while 12 were female. DNS (78%) (Deflected nasal septum) were found to be the main cause of Headache in male and (33%) female shows maxillary sinusitis the main cause of chronic Headache. **Conclusion:** Conventional radiology is still playing important role for diagnosing the cause of Headache apart from advance imaging modality which is costly and unreachable for common people of developing countries.

Key word: DNS, Sinusitis, Water View.

INTRODUCTION

Headache seems to be minor significance in majority of person but sometime it may be the first and only symptom that will lead to some grave disease. No doubt symptomatic treatment may cure and patients get relieved. But for those patients with history of chronic headache investigation should be preceded before commencing the treatment. Radiology and imaging is playing significant role in detecting the cause of headache in patient who has associated ENT related problem.

In Western World CT scanning are commonly advised for the study of sinuses. Unfortunately in these facility are beyond the reach of common person with poor socioeconomic condition due to its high cost and availability of this investigation. The conventional radiological facility are however available every where and if it is under the supervision of good radiographer and radiologist, various views of skull and the sinuses

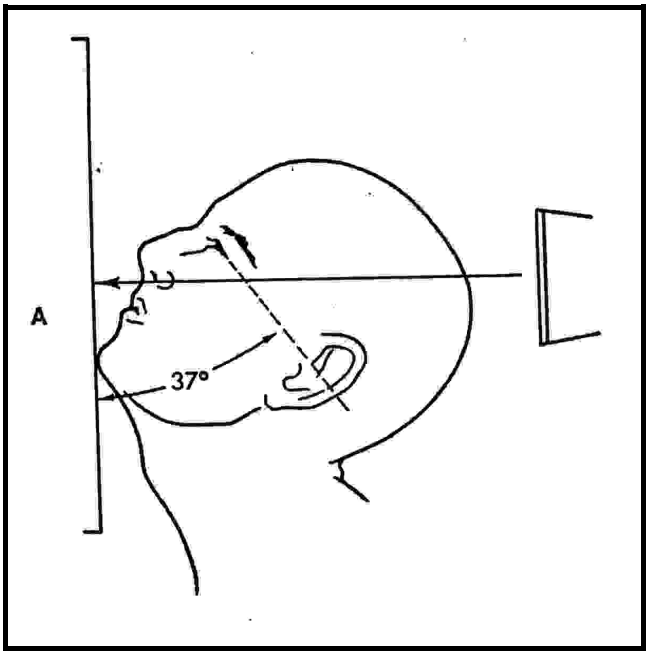
can be obtained.

Water view is the most commonly advised view by the physician which help in the study of the condition of sinuses, nasal septum, bony margin and the facial bones. Without advising CT one can get number of finding in patient with chronic headache in this view.

PATIENT AND METHOD

31 patient with chronic headache were advised for X-ray para nasal sinuses Water view .19 were male (61.29%) and 12 were female (38.7%). The mean age comes out to be 26 years.

100 MA X-Ray equipment with movable grid was used. 10x12 inches cassette with high speed screen was preferred to use.



The patient is facing the cassette in either erect or prone position. The orbitomeatal line is angles 37 degree to the plain of the cassette. The central ray or the incident beam of X- Ray. Is centered on the film perpendicular to the cassette emerging at the anterior nasal spine[1]. Patient was exposed for water view.

RESULTS

The water view of para nasal sinuses shows following radiological finding in 31 patients with complaint of chronic headache of more than one month duration. All patients were received from OPD. There were 19(61.2%) male and 12(38.7%) female. The mean age comes out to be 26 years.

21 patient (67.74%) shows sinusitis, among them 19(61.29%) male and 12 (61.12%) female. Among 31 patient both male and female 3(9.6%) patient shows unilateral maxillary sinusitis. 2 were male (10.5%) while one was female (8.3%) while 10 patient (48.48%) do not show any radiological sign of sinusitis in water view. All patients some how have history of nasal congestion with running nose and difficulty in breathing.

Table-I. Water view finding in male

Frontal sinusitis	Maxillary sinusitis	Both frontal & maxillary	DNS	Erosin
10	14	8	15	3
52.65%	73.68%	42.10%	78.9%	15.78%

Table-II. Water view finding in female

Frontal sinusitis	Maxillary sinusitis	Both frontal & maxillary	DNS	Erosin
2	4	2	3	0
16.6%	33.35%	16.6%	25%	0%

Fig. Causes of chronic headache in female in water view

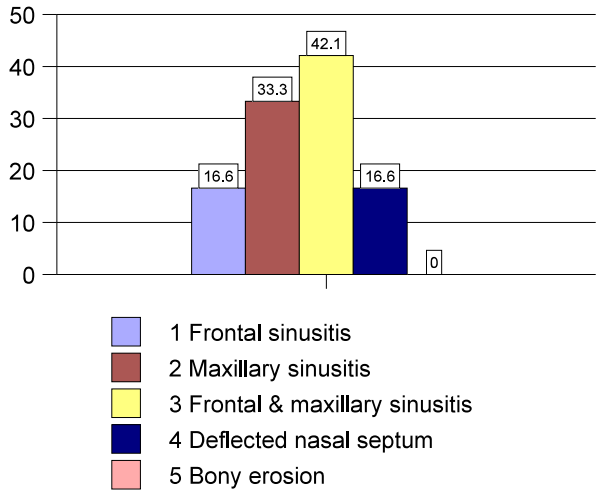
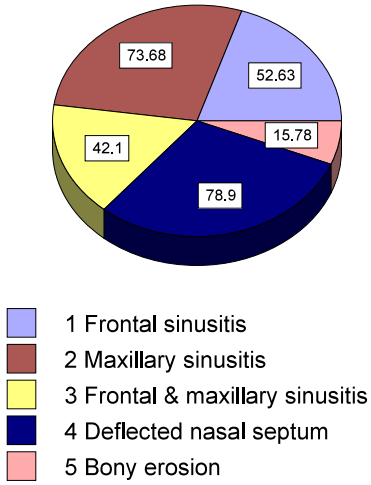


Fig. Causes of headache in male in water view

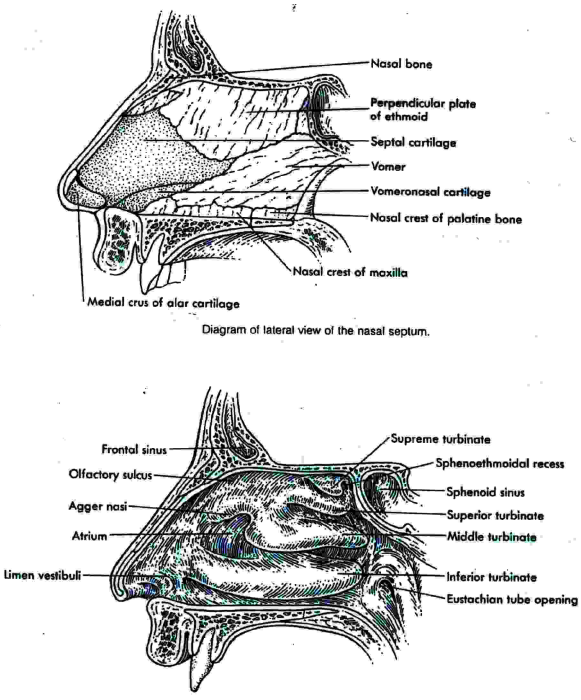


Patients were divided into two groups male and female. Among 19 male 10 patients (52.65%) show frontal sinusitis. 14 patient (73.68%) show maxillary sinusitis. While 8 patient (42.10%) show maxillary as well as frontal sinusitis. 15 patients (78.9%) show Deflected nasal septum (DNS). While only 3 patients (15.78%) with history of headache of more than one month show bony erosion of the wall of maxillary sinus.

Among 12 female two patients (16.6%) show frontal sinusitis. 4 (33.35%) patients show maxillary sinusitis, while 2(16.6%) patients show frontal as well as maxillary sinusitis and 3(25%) patients show deflected nasal septum (DNS). Bony erosion was not present in any female.

Thus the DNS was found to be the dominant cause of Headache in male (78.9%).

And the maxillary sinusitis in male is next common cause of headache (73.68%).



While in female 33.38% shows maxillary sinusitis while DNS was present in 25%.

DISCUSSION

Radiography of the skull and the sinuses need perfect skull for obtaining good result of the vault, facial bones, and the sinuses. We advise two views commonly. Caldwell view and Water view.

Caldwell view is the best projection for the examination of the frontal and the ethmoidal sinuses in frontal projection.

But as far as the water view is concerned this is the best single view for the evaluation of the maxillary sinuses in frontal projection[1].

We observe that apart from the study of maxillary sinuses one can also study the position of nasal septum, whether it is in normal central position or deviated towards one side thus making hindrance to the flow of air through nostril, causing chronic headache, variation if the positioning angle is required to give perfect water view, on the one hand if the head is not extended sufficiently the petrous pyramid will be projected over maxillary sinuses there by obscuring the sinus detail. On the other hand if the head is hyper-extended the maxillary sinuses become distorted and foreshortened thus obscuring sinus disease. The perfect water view has the petrous pyramid projected just below the floor of the sinus cavities. This is the best single view for the evaluation of the maxillary antra in the frontal projection. Another variation is to use the Mahoney modification in which patient keeps his mouth open during X-Ray exposure. This view is also known as open mouth water view. It allows good visualization of sphenoidal sinuses along with maxillary and frontal sinuses and nasal septum[2]. The major portion of the nasal septum is formed by the perpendicular plate of the ethmoid bone posteriorly and the septal cartilage interiorly. The septum provides major support for the dorsum of the nose and the region below this extending to the tip. Damage to the septal cartilage can result saddle nose deformity.

The septal cartilage has unusual mobile articulation with the surrounding bones. The edge of cartilage fits into the groove on the edge of receiving bone. Only connective tissue stabilizes the Junction. This allows the mobility that minimize the chance of fracture and allows considerable septal deviation without dislocation[3], however majority of septal deviation are not traumatic but developmental in adult and in grown up age.

Sinusitis shows pacification of the sinuses or clouding of the sinuses due to mucosal inflammatory thickening. Normally sinuses appear radiolucent due to air in water or in Mahoney view. However other condition such as fibrosis non infected inflammation/ allergy or chemical irritation and tumor of the sinuses also shows same picture in x-ray of PNS water view[4].

Evaluation of the Para-nasal sinuses and nasal cavity in patients with headache and or facial pain must include a thorough medical and social history, with close attention to the pattern and character of pain, a thorough physical examination that includes a palpation and nasal endoscopy, and imaging studies such as CT scans and Magnetic Resonance Imaging. The physician must remember that every pain in the face is not caused by sinusitis[5].

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