



Hyperostosis Frontalis Interna: A Case Report

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Received Date: September 24, 2021

Published date: October 01, 2021

Abstract

HFI a disorder of the endocranial plate which is modified into a structured cancellous phenotype followed by sparing of midline, bone deposition, widening of lamellar zone takes place in the endocranial layer of the frontal bone. Excessive Growth may lead to compression of brain structures. we presented a case of HFI presented with headache and depressive symptoms with mild cognitive impairment.

Introduction

Hyperostosis frontalis interna [HFI] a rare pathological entity was coined and explained by Santorin and Morgagni in year 1965 that is characterized by formation of single or multiple bony nodules situated on the inner layer of the frontal bone of skull.[1] HFI a disorder of the endocranial plate which is modified into a structured cancellous phenotype followed by sparing of midline, bone deposition, widening of lamellar zone takes place in the endocranial layer of the frontal bone. Excessive Growth may lead to compression of brain structures.[1] Previously it was thought to be associated with multiple metabolic

and endocrine diseases like virilism and obesity. Prevalence of HFI has been seen in post-menopausal women in modern scenario. Its incidence has increased during 19th and 20th century [1-3]

HFI has prevalence of 5–12% in general population [3], Most common in women (postmenopausal) than in men [4]. It has been found that HFI has association with conditions, like frontal headaches, psychotic and neurotic diseases, obesity, diabetes, pregnancy, some endocrine disorders, virilism, hypertrichosis, [5–8]. HFI may be encountered in Morgagni's syndrome that is characterized by HFI, obesity and virilism. Etiology of HFI is uncertain. Metabolic and endocrine disorders like morbid obesity, blood sugar impairment, post-menopausal syndrome, and female sex of the patient are consistent with the reported risk factors of HFI. Prominence of bony nodular overgrowth of HFI in the inner table of the skull does not pertain to any other disease than HFI. Precisely it can be said that HFI is a common entity among elderly post-menopausal women population.

Patients suffering from hyperostosis frontalis interna may have chronic dull frontal headache; or focal symptoms associated with local compression and rarely seizures [14] [12-13].[15]

Psychiatric manifestations

It is has been established that HFI can cause vast psychiatric disturbances, e.g aggressiveness, paranoia or depression.[16] Psychological testing has confirmed that HFI causes significant frontal lobe dysfunction manifested as apathy and impairment in abstract reasoning, cognitive inflexibility and executive dysfunction. Patients also exhibited severe semantic memory issues, perseveration, impulsivity and poor sustained attention in cognitive domain. Some families of patients have reported obsessive behavior [15]

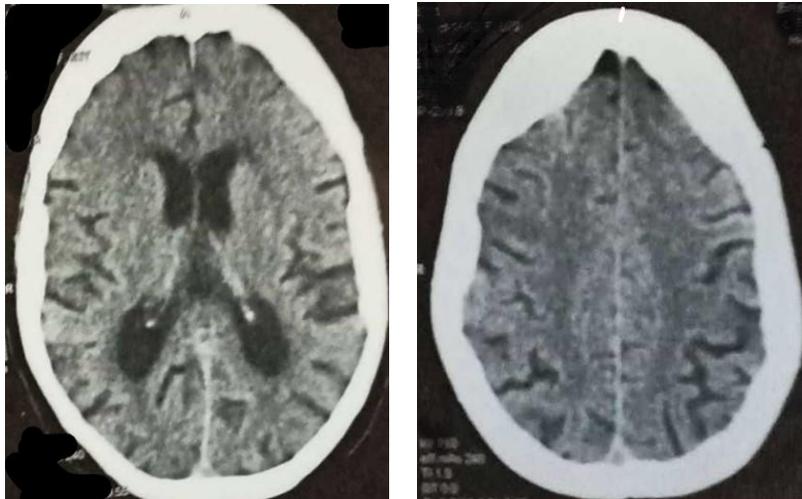
Below we are presenting a case of HFI presented with headache and depressive symptoms with mild cognitive impairment.

Case

72 years old married female with no formal education known hypertensive, type 2 diabetic, postmenopausal, from rural strata referred from district hospital for psychiatric evaluation. Patient was apparently alright 1 year back when she presented with complaint of restlessness, headache and low mood. Patient initially visited to physician where she was prescribed analgesics and multivitamins after taking this medication for a period of 4 weeks patient had no relief. Then patient visited nearby hospital for the same complaints. Patient underwent series of investigations including baseline investigation, thyroid profile, vitamin D3 and USG abdomen, that were within normal limits. Then patient was advised medications for 3 weeks by treating physician for which (no documentation is available) but no improvement in her symptom was reported. Repeatedly visited surgeons and physicians to hospital in despair need of relief but didn't yield results. Then patient visited a psychiatrist where patient was

treated for depressive features and was put on duloxetine and lorazepam. After taking this medications patient`s condition worsened, she became disoriented and had intermittent memory impairment. Then the patient went to a district hospital after which she was referred to our OPD in view of above symptoms. Detailed interview was taken and patient revealed restlessness, low mood decreased appetite and lack of interest in daily routine activities, in addition to these symptoms patient also complained of intermittent forgetfulness, recurrent history of Intractable headaches, sleep disturbance, worrying thoughts, irritability (as stated by attendants), and decreased concentration.

Base line investigations were done, due to presence of intermittent memory loss and headache NCCT head was advised to rule out any organicity which revealed hyperostosis frontalis interna. There was no past history of psychiatric illness in patient. There was no family history of psychiatric illness. Premorbidly the patient has anxious personality traits. The patient was diagnosed as Hyperostosis frontalis interna and depressive disorder. Psychological and pharmacological treatment was initiated. The patient was put on mirtazipine 15mg initially then 30mg, quetiapine 25 mg, and clonazepam 0.25 mg and patient as well as the family was psycho-educated. Neurology consultation was sought which was suggestive of mild cognitive impairment and was put on tablet donepezil 5mg. Patient was followed on weekly basis and showed improvement over a period of 3-4 weeks. Patient is still on follow up with department of neurology besides department of psychiatry.



NCCT head of this patient showing Hyperostosis Frontalis Interna

Discussion:

HFI is a condition that is benign and incidental which is associated with metabolic, endocrine disorders, headaches, epilepsy, cognitive impairment, and psychiatric or behavioral disorders. The etiology of HFI is unknown, but it is generally related to an endocrine imbalance, especially in pituitary function.[17].

Above case has highlighted the association of HFI, postmenopausal and its psychiatric manifestations. Our patient had headache refractory to analgesics because of hyperostosis frontalis externa and there was associated symptoms of intermittent forgetfulness, and depressive symptoms. Patient has not responded to drugs like NSAIDS, supplements. lorazepam but showed good response to antidepressants like Mirtazapine, antipsychotic low dose (quetiapine) and psychological treatment. Very few case reports of hyperostosis frontalis interna from Indian subcontinent have been published so far. This case highlighted the importance of psychopharmacological treatment in neuropsychiatric manifestations in organic cause like HFI which are responding to conventional methods of treatment.

Conclusion:

Hyperostosis frontalis interna may present with symptoms of intracranial space occupying lesion like headache, seizure or dementia. HFI is associated with neuropsychiatric manifestations. Prompt diagnosis helps to prevent unnecessary investigations and treatment of the psychiatric ailments. It is also necessary that more research might prove helpful in treating the neuropsychiatric manifestations.

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