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Pitutiary Macroadenoma Causing Acromegaly with Hcv- A Rare Association

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1. Abstract

1.1. Introduction

The co-occurrence of pituitary microadenoma causing acromegaly and Hepatitis C virus (HCV) infection is an uncommon association of diseases, but each condition presents significant clinical and management considerations that require a multidisciplinary approach. Both acromegaly and chronic HCV infection are associated with an increased risk of hepatocellular carcinoma (HCC) and metabolic disorders like type 2 diabetes and insulin resistance, which can synergistically promote liver damage and cancer development.

1.2. Case Report

A sixty-five-year-old male having significant past history of persistent headache with diminution of vision for six months. He was not having any chronic illness like diabetes mellitus, hypertension and thyroid disorder. He was very tall with height of six feet and five inches, large jaw, long hands, fingers and tongue. Hence clinically acromegaly diagnosis was made and in view of his persistent headache, CECT scan brain was done which revealed pituitary macroadenoma. He was detected to be suffering from chronic hepatitis C virus (HCV) infection on Pre-anaesthetic check-up (PAC). On detailed evaluation, Chest X-ray, ECG, Ultrasonogram abdomen and Fibroscan were normal. The HCV RNA quantitative load was 238760 I.U./ml with mild transaminitis. There were no complaints regarding chest, cardiovascular, abdominal system. He was given antiviral treatment with sofosbuvir 400 mg & Daclatasvir 60 mg for total of 12 weeks duration and achieved sustained virological response (SVR) after 12 weeks of completion of treatment., as evidenced by complete absence of HCV RNA on polymerase chain testing (PCR) report. He was successfully operated by neurosurgeon for pituitary macroadenoma without any complications and post-operatively his headache subsided and vision became normal. He has been followed for one and year and repeat HCV RNA test and clinical examination for relapse is non-contributory.

1.3. Conclusion

Our case report is a rare in which pituitary macroadenoma leading to acromegaly was seen in HCV patient. There is no case report of the same in literature. There is any association between the two or is a co-incidental finding, is further area of research.

2. Introduction

Pituitary macroadenoma symptoms include headaches, vision problems (like loss of peripheral vision), facial numbness, or symptoms like sinus pain.

and hormonal imbalances. Due to their size, these tumours can also press on nearby structures, causing "mass effect" symptoms, while damage to the pituitary gland can lead to hormonal deficiencies or excesses, resulting in issues like weight gain or changes in menstrual cycles. Symptoms from hormonal imbalances can be both due to deficiency or excess of hormones. The pituitary gland underactivity leads to tiredness, weakness, or lack of energy, sexual problems, such as low libido or erectile dysfunction, changes in menstrual cycles, infertility, loss of facial hair or body hair. The hormonal excess leads to Cushing's syndrome (weight gain, thin arms and legs, easy bruising, and stretch marks). Acromegaly (enlarged hands and feet, prominent brow bone or jaw), dizziness, nausea and vomiting, seizures, runny nose, which can be a sign of cerebrospinal fluid leakage. Acromegaly itself rarely causes clinical organomegaly of the liver, but HCV infection can lead to chronic liver disease, fibrosis, cirrhosis, and hepatocellular carcinoma (HCC). Active acromegaly, potentially through high insulin-like growth factor-1 (IGF-1) levels, may accelerate the risk or progression of liver complications like HCC in HCV patients. Both conditions are independently associated with an increased risk of type 2 diabetes and insulin resistance, which can synergistically worsen liver disease progression and cardiovascular risk. In patients with advanced liver failure due to HCV, IGF-1 production by the liver may be impaired, leading to high growth hormone (GH) levels but lower-than-expected IGF-1 levels. This can complicate the biochemical assessment and monitoring of acromegaly.

2. Case Report

A sixty-five-year-old male having significant past history of persistent headache with diminution of vision for six months. He was not having any chronic illness like diabetes mellitus, hypertension and thyroid disorder. He was very tall with height of six feet and five inches, large jaw, long hands, fingers and tongue. Hence clinically acromegaly diagnosis was made and in view of his persistent headache, CECT scan brain was done which revealed pituitary macroadenoma. He was detected to be suffering from chronic hepatitis C virus (HCV) infection on Pre-anaesthetic check-up (PAC). On detailed evaluation, Chest X-ray, ECG, Ultrasonogram abdomen and Fibroscan were normal. The HCV RNA quantitative load was 238760 I.U./ml with mild transaminitis. The general physical and systemic examination was essentially normal. The hemogram showed haemoglobin of 11.8 g/dL, leucocyte counts of 7300/L, normocytic normochromic anaemia. The LFT, RFT, INR, T3, T4, TSH, blood sugar, autoimmune profile, Viral screen except HCV were all normal There were no complaints regarding chest, cardiovascular, abdominal system. He was given antiviral treatment with sofosbuvir 400 mg & Daclatasvir 60 mg for total of 12 weeks duration and achieved sustained virological response (SVR) after 12 weeks of completion of treatment., as evidenced by complete absence of HCV RNA on polymerase chain testing (PCR) report. He was successfully operated by neurosurgeon for pituitary macroadenoma without any complications and post-operatively his headache subsided and vision became normal. He has been followed for one and year and repeat HCV RNA test and clinical examination for relapse is non-contributory.

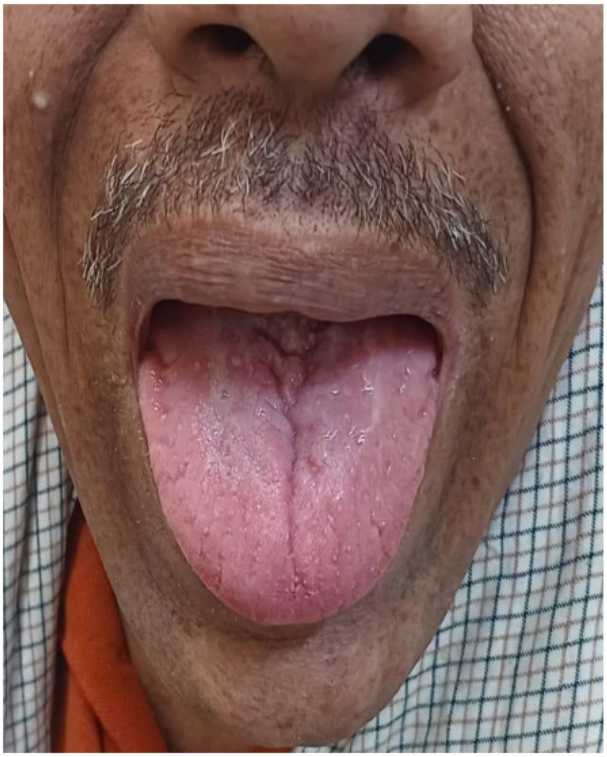

Figure 1: Showing Macroglossia.

Figure 2: Showing large Face & Nose.

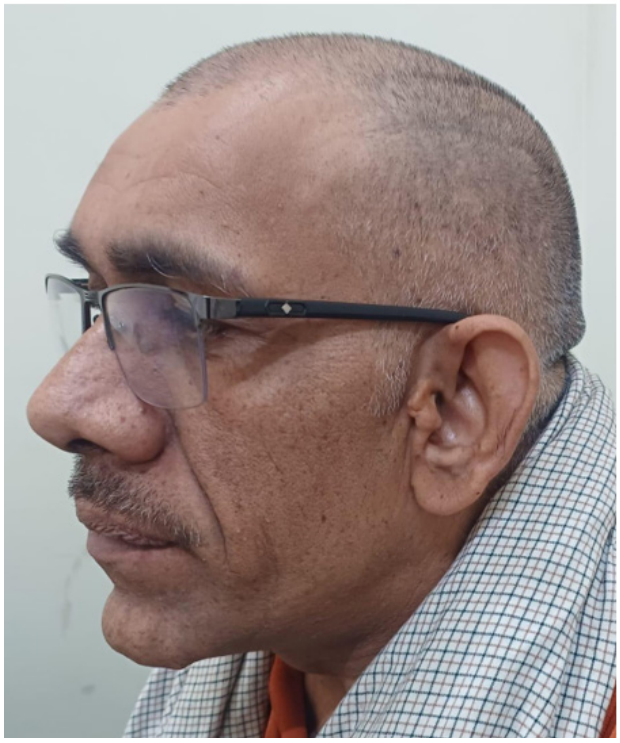

Figure 3: Showing Large Ears.

Figure 4: Showing Large Hands.

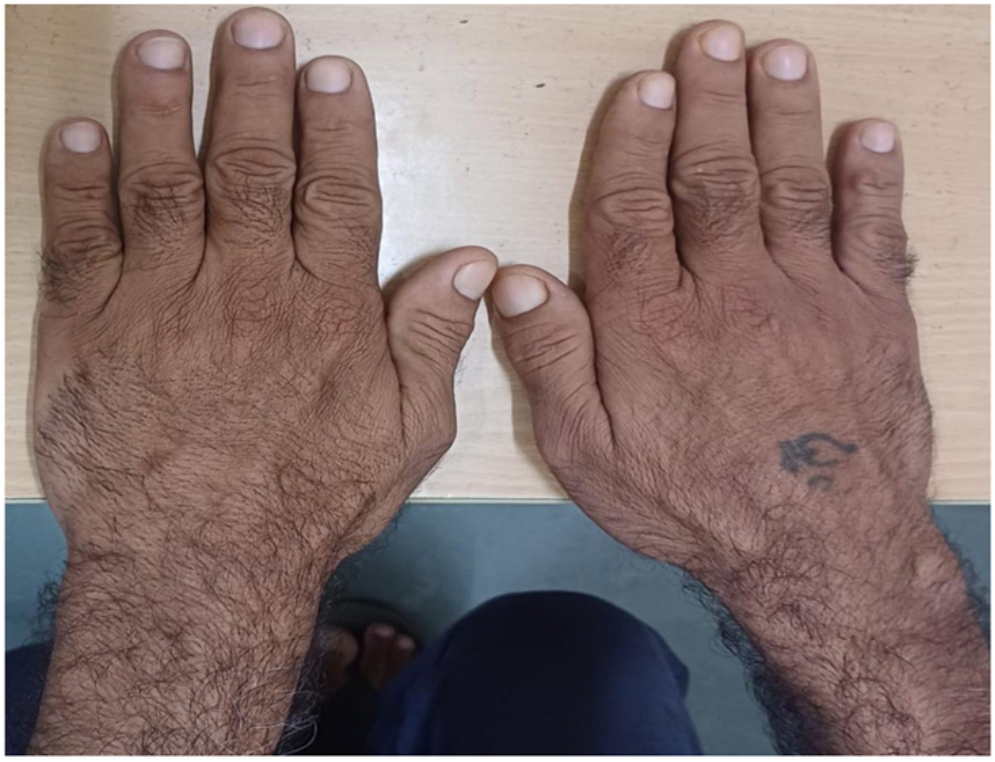

Figure 5: Showing Large Bilateral Hands.

3. Discussion

Hepatitis C virus (HCV) infection, primarily known for its hepatic manifestations, has been implicated in a range of extrahepatic disorders (in up to two-thirds of infected patients with this virus), including autoimmune and neurological conditions [1]. The possible manifestations of the effect of HCV infection on the central nervous system (CNS) are increasingly gaining attention. The mechanisms by which HCV contributes to neurological disorders are not fully elucidated but are thought to involve immune-mediated processes and direct viral invasion of the neurologic system. Chronic HCV infection induces immune dysregulation, potentially triggering autoimmune conditions such as cryoglobulinemia and systemic vasculitis. These processes may increase CNS vulnerability to inflammation and demyelination, facilitating conditions like acute disseminated encephalomyelitis (ADEM) [2]. HCV-related CNS complications encompass a wide spectrum of disorders ranging from cerebrovascular events to autoimmune syndromes. However, their relatively low frequency, in addition to the heterogeneity of neurological manifestations, and the paucity of pathological observations, largely preclude the achievement of reliable

information as to the pathogenesis of different syndromes. Acute cerebrovascular events, including ischemic stroke, transient ischemic attacks, lacunar syndromes, or rarely hemorrhages, have been reported in HCV-infected patients [3-5], being the initial manifestation of HCV infection in some cases [6]. The occurrence of occlusive vasculopathy and vasculitis are well-known events [7,8]. Isolated CNS vasculitis has been coupled with angiographic evidence of multiple focal narrowing of cerebral arteries, and full recovery has been achieved with corticosteroids and cyclophosphamide [9]. In some patients, CNS ischemic changes may occur in the setting of an antiphospholipid-associated syndrome [10], or in association with antineutrophil cytoplasmic antibodies. We have searched literature to our best extent but yet to find any association between CNS tumours and HCV. Our case report is any association between HCV and Pituitary macroadenoma or chance finding is area of research. In future, further researches on this aspect can enlighten everybody.

5. Conclusion

Our case report is a rare in which pituitary macroadenoma leading to acromegaly was seen in HCV patient. There is no case report of the same in literature. There is any association between the two or is a co-incidental finding, is further area of research.

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