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Acromegaly with Predisposition towards Cardiac Failure

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Abstract

Acromegaly is a rare disease caused by excess secretion of growth hormone. Most cases are due to pituitary macro or microadenoma. It usually occurs sporadically but some can be familial due to AIP gene mutation1. We report a case of 45 year old gentleman with chief complaints of breathlessness since 15 days, increase shoe size, large hands and feet, protruded jaw, which eventually turned out to be acromegaly based on typical clinical appearance, hormonal features with chest xray showing features of cardiomegaly. Patient was managed conservatively, and discharged with stable vitals. Prompt and early intervention in such cases can prevent further progression of disease.

Keywords: Acromegaly, hypertension, type 2 diabetes, protruded jaw ,cardiomegaly, micro-macroadenoma

Introduction

Acromegaly is derived from a Greek word acro means extremities and megaly means enlargement. It is due to excess secretion of growth hormone. Growth hormone is secreted by anterior pituitary gland[2]. Overall incidence is approximately 3-4 million per year and prevalence is 50 -80 per million worldwide[3]. It is due to pituitary micro or macroadenoma. It has equal predilection for both males and females. It is characterised by change in facial appearance with protruded jaw, interdental separation, large tongue, tight ring, large hands and feet. Eventually if unrecognised patient can land up with type 2 diabetes, hypertension , cardiac manifestations, arthritis.It is diagnosed by elevated growth hormone levels and treated medically as well by surgical approach[4].

Case Report

A 45 year old male presented in OPD with complaints of breathlessness on exertion (NYHA-1), increase shoe size , with loss of appetite since 15 days. On carefully examining patient , patient had protruded jaw, large hands and feet , excessive forehead sweating, deep voice and was detected with hypertension with a blood pressure of 142/84 mmhg On auscultation basal crepitation were present, Hba1c showed values of 7.4%GH levels and IGF-1 levels were elevated which further added to our diagnosis

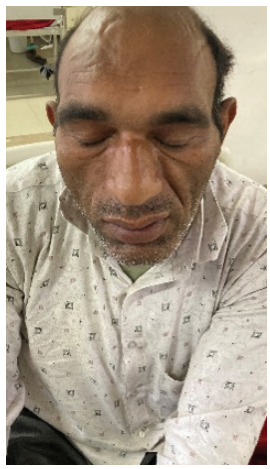

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Fig1: A: Protruded Jaw and prominent supraorbital ridges .,

B: Forehead sweating C&D: Spade like hands and feet

Chest x ray was done which showed enlarged left and right ventricle Thus the clinical appearance, hormonal parameters together with biochemical parameters , chest x-ray aided the diagnosis Patient was started on amlodipine 5 mg , vildagliptin with metformin (Vysov-M 50/500mg), ocreotide 50 microgram thrice daily was started and after 5 days patient was discharged with stable vitals

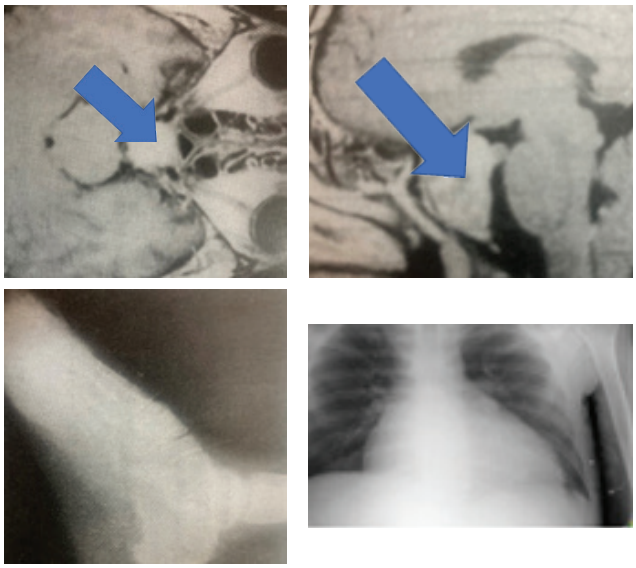

Fig 2A&2B: Arrow head in MRI brain showing pituitary macroadenoma, 2C: Xray heel – increase heel pad thickness 2D:Enlarged right and left ventricle

Lab Investigations	Values
Hb(g/dl)	11.4 g/dl
TLC(cumm)	4500 cells per cumm

Lab Investigations	Values
GH (ng/ml)	37ng/ml
IGF-1(ng/ml)	805ng/ml
TSH (microiu/ml)	3 micro IU/ml

Hb: hemoglobin, TLC- Total leucocyte count, GH-Growth hormone

IGF: Insulin like growth factor1, TSH-Thyroid stimulating hormone

Discussion-Acromegaly is caused by growth hormone hypersecretion. It is caused by pituitary micro /macroadenoma. Protean manifestation of GH, IGF-1 hypersecretion are indolent and are often not diagnosed after 10 years or more Acral overgrowth of bone results in frontal bossing, large hands, feet , prognathism, widened space between lower incisior teeth5. Soft tissue swelling results in increase heel pad thickness ,increase shoe or glove size, tight rings, large fleshy nose. Other features include forehead sweating,, deep voice, oily skin, arthropathy carpal tunnel syndrome, acanthosis nigricans ,visceromegaly, cardiomegaly, macroglossia , thyroid enlargement.[6]

The most significant effect of GH excess occurs with CVS system. Coronary artery disease, cardiomyopathy, left ventricular hypertrophy, hypertension ,decreased diastolic function occurs in most patients if left untreated. Obstructive sleep apnea occurs in more than 60% of patients, Diabetes mellitus occurs in 25% of patients[7]. Death occurs due to cardiovascular, cerebrovascular, respiratory disease. Screening is done by measuring IGF-1 levels together with elevated GH levels, aids in diagnosis. Treatment is done by using ocreotide 50microgram thrice daily injected subcutaneously . It suppress the growth hormone in 75% of patients. Transsphenoidal surgical resection of tumor can return GH levels to normal within an hour[8].

Conclusion

Acromegaly should be identified early before the patient land up in its complications as discussed above.

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