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Case report Open Access

ACROMEGALY: A CASE REPORT

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ABSTRACT

Acromegaly is a rare disease caused due to hyper secretion of growth hormone. Most of the cases of acromegaly are caused by pitutary adenoma which can be microadenoma or macroadenomas. These adenomas are never malignant, but can have significant morbidity and mortality. We report a 35 year old female patient presented herewith classical presentation of acromegaly with chief complain of weight gain, excessive sweating , widening of both hands and feet and was diagnosed as a case of acromegaly due to macroadenoma of pirtutary gland, on the basis of typical clinical features and hormonal parameters also radiological findings. Patient underwent transsphenoidal surgical resection of macroadenoma and recovered completely from the disease. Early recognition and diagnosis will help to avoid the complications of disease.

INTRODUCTION

Acromegaly is a rare disease occurs with a prevalence of 50 to 70 cases per million and an incidence of 3 cases per million per year[1]. Acromegaly is a rare disease caused due to hyper secretion of growth hormone. Most of the cases of acromegaly are caused by pitutary adenoma which can be microadenoma or macroadenomas. These adenomas are never malignant, but can have significant morbidity and mortality[2,3].
Clinical features: [3,4,5] Cardiovasular System- Hypertension, Ventricular Hypertrophy, Cardiomyopathy, Congestive Heart Failure Etc. Respiratory System- Sleep apnoea, Upper airway obstruction due To macroglossia, Gastointestinal System- Colon polyp, Metabolic- Diabetes Mellitus, Imapaired Glucose Tolerance, Muscluloskeletal- Prognathism, Frontal Bossing, Acral Enlargment, Arthralgia, Myopathies Etc. Skin- Oily Skin, Acnthosis Nigricans, Visceralomegaly- Goiter, Macroglossia, Hepatomegaly, Splenomegaly, Neurological- Carpal Tunnel Syndrome, Aneurysm, Headache, Local effect due to tumous- Visual field defect, Cranial nerve palsy Etc.
Diagnosis: [3,4] The diagnosis of acromegaly is based mainly on symptoms and signs with biochemical investigation and radiography. The biochemical diagnosis of acromegaly is done by raised level of growth hormone and insulin like growth factor. Acromegaly is mainly associated with raised levels of IGF1 level. So normal IGF1 level excludes the diagnosis in most of the patients. After diagnosis of acromegaly based on biochemical investigation, documentation is needed for pitutary adenoma which is most common cause of acromegaly. In patient of acromegaly visual field assessment is also necessary in cases of macroadenoma which are close to optic chiasm.
Also xray of limbs and skull and chest also needed. Colonoscopy is needed to look for polyp. Echocardiography and Holter electrocardiography indicated if patient is having cardiac involvement on clinical examination[6].
Treatment: [7,8] The choice of treatment in acromegaly due to pitutary adenoma is transsphenoidal surgery. Medical therapy can also be used for treatment which includes dopamine agonist, somatostatin analogs, GH-receptor blocking agents. Most commonly used drug is octerotide. Surgery is preferred over medical treatment as it has advantages. It gives quick relief with symptoms and signs, also stops the organ damage due to hormone excess. The outcome of surgery is good for microadenoma than macroadenoma. So for recurrence of adenomas radiotherapy can also be used.[3]

CASE REPORT

A 35 year old female patient came to OPD with chief complains of weight gain, excessive sweating , widening of both hands and feet since 4 to 5 years. She also give complains of change in voice. Also she is having headache intermittently. No history of convulsions or altered sensorium or she doesn't have any visual complains or any weakness. For amenorrhorea she underwent total abdominal hysterectomy 9 years back. On examinations patients vitals are normal that means pulse rate-84/min blood pressure-138/90 respiratory rate-18/cycles per min. There was no pallor, cyanosis, clubbing, lymphadenopathy.

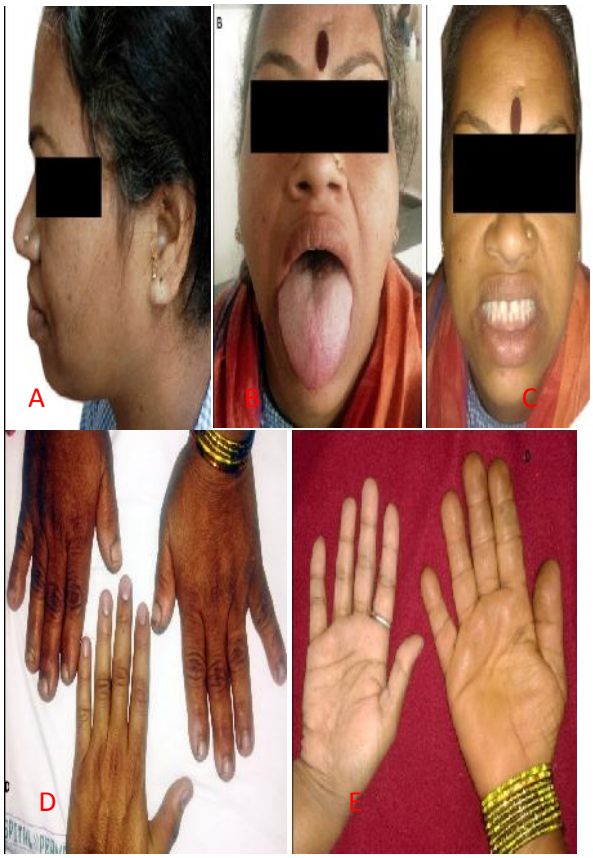

Fig 1: A: Prognathism and prominent supraorbital ridges., B:Macroglossia., C:Thick lips and widening of teeth spaces., D & E: Spade like hands.

But patient's general appearance didn't look normal. Careful examination from head to toe showed prominent supraorbital ridges, prognathism, widening of teeth spaces , macroglossia with thick lips, large ears and fleshy nose , patient also had spade like hands and feet and also had deep, husky voice which was not before. Systemic examination was normal. Soon all these features we suspected the provisional diagnosis of 'acromegaly'.

Table 1: Lab investigations:

Hb % (gm/dl)	11.6	FSH(mIU/ml)	1.26
TLC(cumm)	5206	LH(mIU/ml)	0.06
Platelet (lakhs/cumm)	2.65	Testosterone(ng/ml)	0.18
BIL(T) mg/dl	0.86	Prolactin(ng/ml)	107
BIL(C) mg/dl	0.24	IGF1(ng/ml)	861
SGOT(IU/L)	31.6	GH(ng/ml)	>40
SGPT(IU/L)	34	T3(ng/ml)	131
ALP(IU/L)	192	T4(µg/ml)	7.7
Urea(mg/dl)	11.9	TSH(µIU/ml)	5.72
Creatinine(mg/dl)	0.24	BSL (mg/dl)	126
Sodium(mEq/L)	141.6	Magnesium(mg/dl)	1.6
Potassium(mEq/L)	4.5	Triclycerides(mg/dl)	86
Calcium (mg%)	11	Total cholesterol(mg/dl)	150

TLC: Total leukocyte count, BIL(T) : Bilirubin total:, BIL(C)Bilirubin conjugated:, SGOT: Serum glutamic oxaloacetic transaminase, SGPT: serum glutamic pyruvic transaminase, ALP: Alkaline phosphatase, FSH: Follicle Stimulating Hormone, LH: luteinizing hormone, IGF: Insulin like growth factor1, GH: Growth Hormone, BSL: Blood Sugar level:,

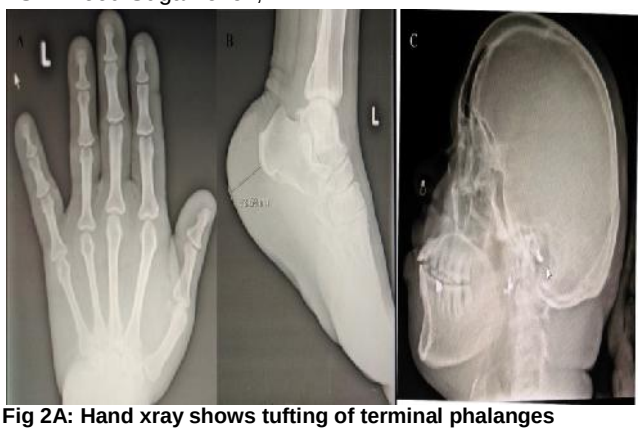

Fig 2A: Hand xray shows tufting of terminal phalanges arrow head appearance, 2B: Heel pad thickness is increases (>18mm), 2C: Prominent supraorbital ridges, and jaw, enlargement of pituitary fossa.

MRI brain shows: 3.1*2.4*1.6cm sized, well defined lesion, with moderate enhancement on post contrast study in sellar and supra sellar region with extension and mass effect over adjustant structures s/o sellar or supra sellar SOL like pitutary macroadenoma.[Fig 3]

Treatment: Treatment was started with oral hypopglycemic drugs i.e. metformin 500mg for impaired fasting blood glucose level before surgery and 'Transsphenoidal surgical resection (TSS)' was done. Patient developed diabetis insipidus in postoperative state required one dose of vasopressin. Diabetis incipidus subsided after 3 days. Patient is now stable and her postoperative GH level is 7.94ng/ml. And patient is discharged on tab prednisolone 5mg half tab daily, and patient is called for follow up after 3 months. There were noticiable changes were seen in patient after surgery. She lost 7kg weight in 2 months. (Fig 4)

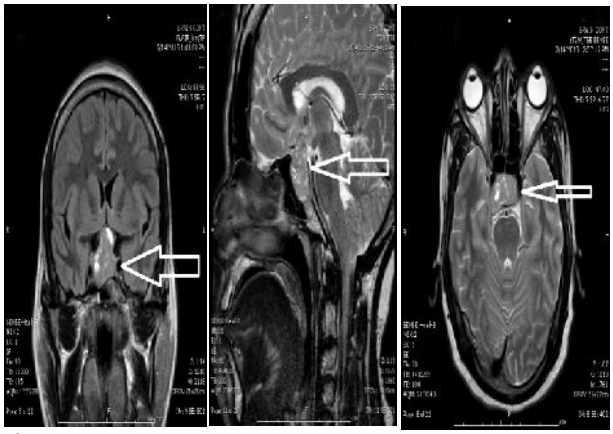

Fig 3: MRI BRAIN SHOWING MACROADENOMA

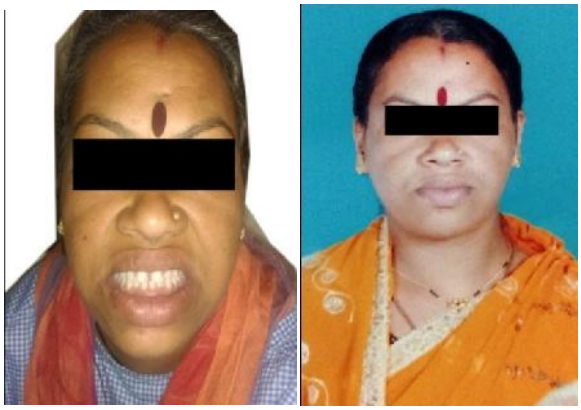

Fig 4: Before surgery, 2 Months after surgery

DISCUSSION

Most of cases of acromegaly are caused by excessive secretion of growth hormone i.e. 95% approximately[9]. Pituitary tumors represented by 10-20% of somatotropic adenomas and less commonly by lactotropic and gonadotropic adenomas[10].The prevalence of acromegaly is 40 to 70 cases per million worldwide, it is seen equally in both sexes[11]. From diagnostic point of view, about 8 to 10 years of delay is commonly observed from the onset of symptoms to recognition[12]. To improve prognosis of disease early recognition and diagnosis and management is necessory[12]. Primary symptoms were weight gain, sweating, headache and sometimes joint pain etc[13]. Which had been present for at least 4 years before diagnosis. Acromegaly have multisystem involvement cardiovascular, endocrinal, musculoskeletal, cutaneous neurological and also psychiatric disturbance[9,10,12]. Diabetes mellitus was observed in about 25% of cases. Due to counteraction of growth hormone on effect of insulin. Complete clinical examination, raised IGF-1 levels and MRI Brain showing pitutary macroadenoma is a key to diagnosis in this case. A diagnosis of acromegaly is made on the basis of signs and symptoms of the condition, in addition to biochemical testing[14]**.** A pituitary MRI should be obtained after biochemical testing to confirm the presence of a pituitary macroadenoma. If the pituitary tumor is found incidentally, and if acromegaly is suspected based on signs or symptoms, IGF1 level should be measured. IGF-binding protein 3 has been shown to be another useful marker of growth hormone excess, if other tests are inconclusive[15].

Unless GH levels are controlled, survival is reduced by an average of 10 years compared with an age-matched control population[16]. This patient was detected in early phase hence these all serious complications were not seen in this patient.

The goal of treatment is to control IGF-1 and GH hypersecretion. Hence surgical resection of the GH-secreting adenomas is the initial treatment for most of the patients. Transsphenoidal surgical resection by an experienced surgeon is the preferred primary treatment.[16] Growth hormone level normalize within an hour and IGF-1 levels comes down to baseline in three to four days, as seen in this patient.

CONCLUSION

Acromegaly is a rare disease caused due to excessive secretion of growth hormone and insulin like growth factor type 1 mostly due to pituitary adenoma. Which leads to clinical feature like prognathism, frontal bossing, macroglossia, spade like hands, thick heel pad, thickening of lips, sweating , headache as seen in this patient.

Early recognition and treatment of disease helped in prognosis of disease and arrested the complications like hypertension, cardiomyopathy, diabetes mellitus, visual disturbances etc. Hence early recognition and management is a key to success in better prognosis and improved quality of life.

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