

Acromegaly presenting as hirsutism: Uncommon sinister aetiology of a common clinical sign

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ABSTRACT

Hirsutism though not uncommon (24%), is not considered to be a prominent feature of acromegaly because of its lack of specificity and occurrence. Hirsutism is very common in women of reproductive age (5-7%) and has been classically associated with polycystic ovarian syndrome (PCOS). Twenty-eight year lady with 3 year duration of hirsutism (Modified Ferriman Gallwey score-24/36), features of insulin resistance (acanthosis), subtle features of acromegaloidism (woody nose and bulbous lips) was diagnosed to have acromegaly in view of elevated IGF-1 (1344 ng/ml; normal: 116-358 ng/ml), basal (45.1 ng/ml) and post glucose growth hormone (39.94 ng/ml) and MRI brain showing pituitary macroadenoma. Very high serum androstenedione (>10 ng/ml; normal 0.5-3.5 ng/ml), elevated testosterone (0.91 ng/ml, normal <0.8) and normal dehydroepiandrosterone sulphate (DHEAS) (284 mcg/dl, normal 35-430 mcg/dl) along with polycystic ovaries on ultrasonography lead to diagnosis of associated PCOS. She was also diagnosed to have diabetes. This case presentation intends to highlight that hirsutism may rarely be the only prominent feature of acromegaly. A lookout for subtle features of acromegaly in all patients with hirsutism and going for biochemical evaluation (even at the risk of investigating many patients of insulin resistance and acromegaloidism) may help us pick up more patients of acromegaly at an earlier stage thus help in reducing disease morbidity.

Key Words: growth hormone, hirsutism, polycystic ovarian syndrome, pituitary adenoma

INTRODUCTION

Hirsutism is a common problem of women in reproductive age affecting 5-7% of the female population and is most commonly due to underlying metabolic and endocrine abnormalities as a part of polycystic ovarian syndrome (PCOS).^[1] However in rare cases, it may be the initial presentation of a more serious and life threatening disorder like adrenal or ovarian tumours, Cushing's syndrome, or acromegaly.

Acromegaly is a rare disorder (prevalence 30-80 cases per million population) and is associated with 3 fold increased in mortality as compared to the general population mainly due to increased cardiovascular morbidity and cancer. Diagnosis of acromegaly in advanced stage is easy once the patient has developed disfiguring skeletal and acral changes. However diagnosis is usually delayed by a mean of 9 years as early diagnosis remains a challenge when the patient may have only subtle features of insulin resistance and PCOS in women.

CASE REPORT

A 28 year lady presented to the Endocrinology Clinic with complaints of increased facial hair, body hair and acne of 3 years duration with unsatisfactory treatment outcomes in spite of multiple sittings of hair removal by electrolysis. She complained of weight gain and increased sweating for last 1 year and 6 months respectively. There was no history of hoarseness of voice, menstrual irregularities or headache.

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She denied history increased ring or shoe size, headache or vision abnormalities. Examination was significant for normal blood pressure, obesity (body mass index-30.3 kg/m²), acne, hirsutism (modified Ferriman Gallwey Score-24/36), neck and axillary acanthosis, bulbous lips and woody nose [Figure 1]. She did not have deepening of voice, macroglossia, skin tags, acral enlargement, increased muscle mass, galactorrhea, breast atrophy or clitoromegaly. She had an episode of hematochezia. Investigations were significant for elevated IGF-1 (1344 ng/ml; normal: 116-384 ng/ml), basal (45.1 ng/ml) and post glucose growth hormone (39.94 ng/ml), elevated androgens and diabetes, which have been elaborated in Table 1. Automated perimetry was normal. Colonoscopy revealed normal colonic mucosa with 3 columns of rectal hemorrhoids. Ultrasonography abdomen revealed enlarged bilateral ovaries, presence of multiple follicles and a dominant follicle in the left ovary. MRI brain revealed a sellar mass with significant suprasellar extension suggestive of pituitary macroadenoma [Figures 2a and b].

Metformin was started at 1 gm/day after dinner with glipizide 5 mg in the morning before breakfast leading to normalization of blood glucose. She was referred to the neurosurgeon for transsphenoidal resection of the macroadenoma.

DISCUSSION

Hirsutism defined as excess body hair in the androgen-sensitive regions of the body of a woman is most commonly due to polycystic ovarian syndrome (PCOS) and is the result of either the underlying hyperandrogenemia or the increased sensitivity of the pilosebaceous unit to androgens.^[1] Hirsutism though not uncommon in acromegaly is almost never the predominant presenting feature. In a series of patients with acromegaly, 24% had hirsutism. PCOS is common in acromegaly seen in as many as 50% of patients.^[2]

PCOS was diagnosed in our patient in view of clinical [Figure 1] and biochemical evidence of hyperandrogenism [Table 1], with radiologic evidence of polycystic ovaries even in the presence of regular cycles (Rotterdam criteria). She had elevated serum testosterone, very high serum androstenedione with normal DHEAS [Table 1], confirming that ovary was the source of this androgen excess. She had significant insulin resistance (HOMA2IR-2.2; Table 1) and was newly diagnosed to be diabetic.

Acromegaly was diagnosed in our patient in view of biochemical evidence of increased growth hormone, IGF-1 and pituitary macroadenoma. She did not have the classical

Table 1: Hormonal and biochemical parameters at the time of diagnosis

Parameter	Value
IGF-1 (ng/ml) (116-384)	1344
Growth Hormone (Basal) (ng/ml)	45.1
Growth Hormone (1hour post 75 gm anhydrous glucose) (ng/ml) (0-0.4)	39.94
8 am cortisol (mcg/dl)	13.2
Prolactin (ng/ml) (<25)	14.4
Free thyroxine (ng/dl) (0.9-1.8)	1.21
TSH (mIU/ml)	2.1
Androstenedione (ng/ml) (0.3-3.5)	>10
DHEAS (mcg/dl) (35-430)	284
Testosterone (ng/ml) (<0.8)	0.91
Fasting blood glucose (mg/dl) (<100)	118
2 hour post 75 gm glucose blood glucose (mg/dl) (<140)	221
Fasting insulin (mU/L)	15.9

IGF: Insulin like growth factor, DHEAS: Dehydroepiandrosterone sulphate



Figure 1: Facial profile of patient showing woody nose, bulbous lips, severe acanthosis and increased terminal hair on the anterior chest wall

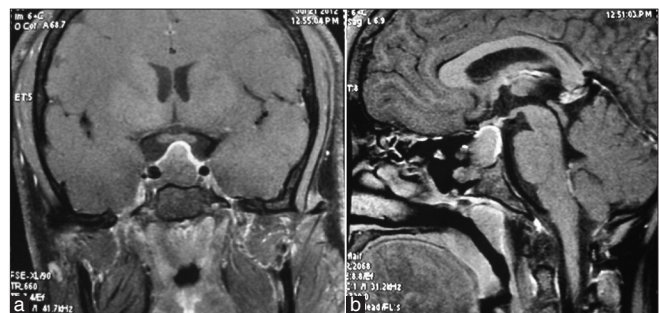


Figure 2: (a) Coronal section of T1W MRI brain showing pituitary macroadenoma with suprasellar extension (b) Sagittal section of T1W MRI brain showing pituitary macroadenoma. Posterior pituitary not visualized

features of acromegaly except for the woody nose, bulbous lips and history of increased sweating. Increased sweating is seen in 65-88% patients of acromegaly.^[3] Hirsutism and features of insulin resistance were her predominant features. It is also well known that severe insulin resistance *per se* may be associated with acromegaloid phenotype.^[4]

The cause of hirsutism in acromegaly is not well known. GH decreases sex hormone binding globulin (SHBG) levels, which leads to increased free testosterone levels in patients of acromegaly with normal testosterone levels.^[5] GH directly, indirectly through increased IGF-1, insulin resistance and hyperinsulinemia is believed to increase ovarian androgen production which may have a role in the development of hirsutism.^[5]

The idea of presenting this case is to highlight the observation that hirsutism may rarely be the only prominent feature of acromegaly and this hirsutism should not be taken lightly as a part of metabolic syndrome in PCOS. A high risk of suspicion may be judicious to prevent missing a diagnosis of acromegaly which can be of grave consequence for a patient. A lookout for subtle features of acromegaly in all patients with hirsutism and going for biochemical evaluation may help us in picking up more patients of acromegaly at an earlier stage of the disease. This approach runs the risk of testing many individuals with severe insulin resistance and acromegaloidism. However, this limitation should be weighed against the benefit of picking up a patient of acromegaly early in the disease state thus reducing morbidity.

To summarize, acromegaly due to pituitary macroadenoma with diabetes and PCOS was diagnosed in a lady who had presented with long standing hirsutism.

REFERENCES

1. Azziz R, Sanchez LA, Knochenhauer ES, Moran C, Lazenby J, Stephens KC, et al. Androgen excess in women: Experience with over 1000 consecutive patients. *J Clin Endocrinol Metab* 2004;89:453-62.
2. Kaltsas GA, Androulakis II, Tziveriotis K, Papadogias D, Tsikini A, Makras P, et al. Polycystic ovaries and the polycystic ovary syndrome phenotype in women with active acromegaly. *Clin Endocrinol (Oxf)* 2007;67:917-22.
3. Tyrrell JB, Wilson CB. Pituitary syndromes. In: Freisen SR, editor. *Surgical Endocrinology Clinical Syndromes*. Philadelphia: JB Lippincott; 1978. p. 304-24.
4. Yaqub A, Yaqub N. Insulin-mediated pseudoacromegaly: A case report and review of the literature. *W V Med J* 2008;104:12-5.
5. Kaltsas GA, Mukherjee JJ, Jenkins PJ, Satta MA, Islam N, Monson JP, et al. Menstrual irregularity in women with acromegaly. *J Clin Endocrinol Metab* 1999;84:2731-5.

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