

# Gonadotrophin Secreting Pituitary Adenoma with Hypersecretion of Testosterone and Testicular Enlargement.

Dr M Ganguri<sup>1</sup>, Dr N Aggarwal<sup>1</sup>, Mr Jenkins<sup>2</sup>, Dr A Joshi<sup>3</sup>, Dr C Saysell<sup>3</sup>, Dr R A James<sup>1</sup>

1. Department of Endocrinology, Royal Victoria Infirmary, Newcastle upon Tyne, UK
2. Department of Neurosurgery, Royal Victoria Infirmary, Newcastle upon Tyne, UK
3. Department of Pathology, Royal Victoria Infirmary, Newcastle upon Tyne, UK

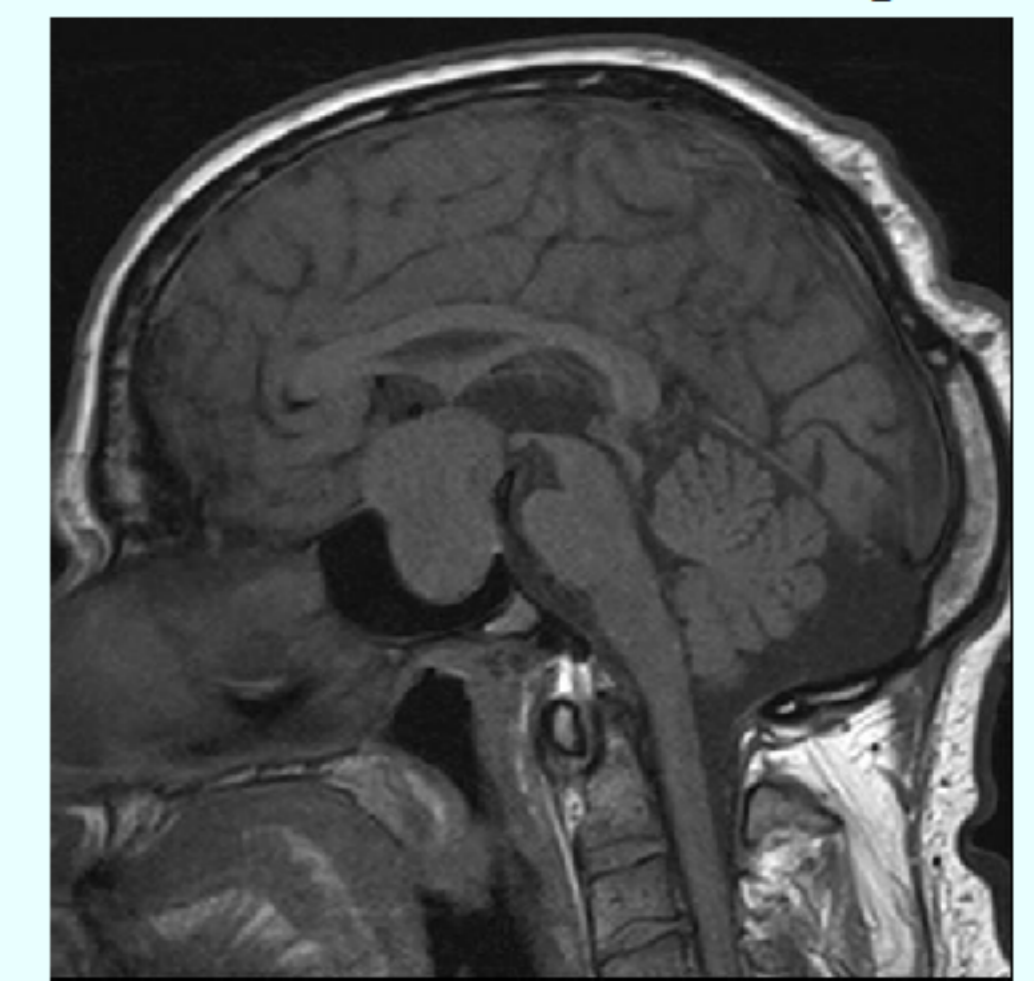
## Presentation:

- 45 year old gentleman presented with headaches, progressive visual failure and complaint of excessive tiredness. He had normal libido and had an 8 year old child.
- On examination, he had bitemporal hemianopia and bilaterally enlarged testes (>40 ml bilaterally). He had increased muscle bulk and premature hair loss with male pattern baldness. He was shorter in height compared to his other family members.

## Initial results:

Haemoglobin: 180g/L (130-180)	Alpha sub-unit: 2.55 IU/L (NR<1.0)
Haematocrit: 0.51 L/L (0.40-0.50)	TSH: 7.61mU/L (0.3-4.7)
LH: 10.5 IU/L (3.0-13); FSH: 15.7IU/L (1.3-9.2)	FT4: 6.0pmol/L (9.5-21.5); FT3: 2.7pmol/L (3.5-6.5)
Testosterone: 43.4nmol/L (9-25)	Prolactin: 982mIU/L (0-450)
free Testosterone: 1257pmol/L (215-760)	Random Cortisol: 75nmol/L
Sex Hormone Binding Globulin: 26nmol/L (15-48)	GH & IGF-1: Normal

## MRI Pre-op



His MRI showed a large pituitary macroadenoma (35 x 29 x 26mm) with suprasellar extension and displacing the optic chiasma.

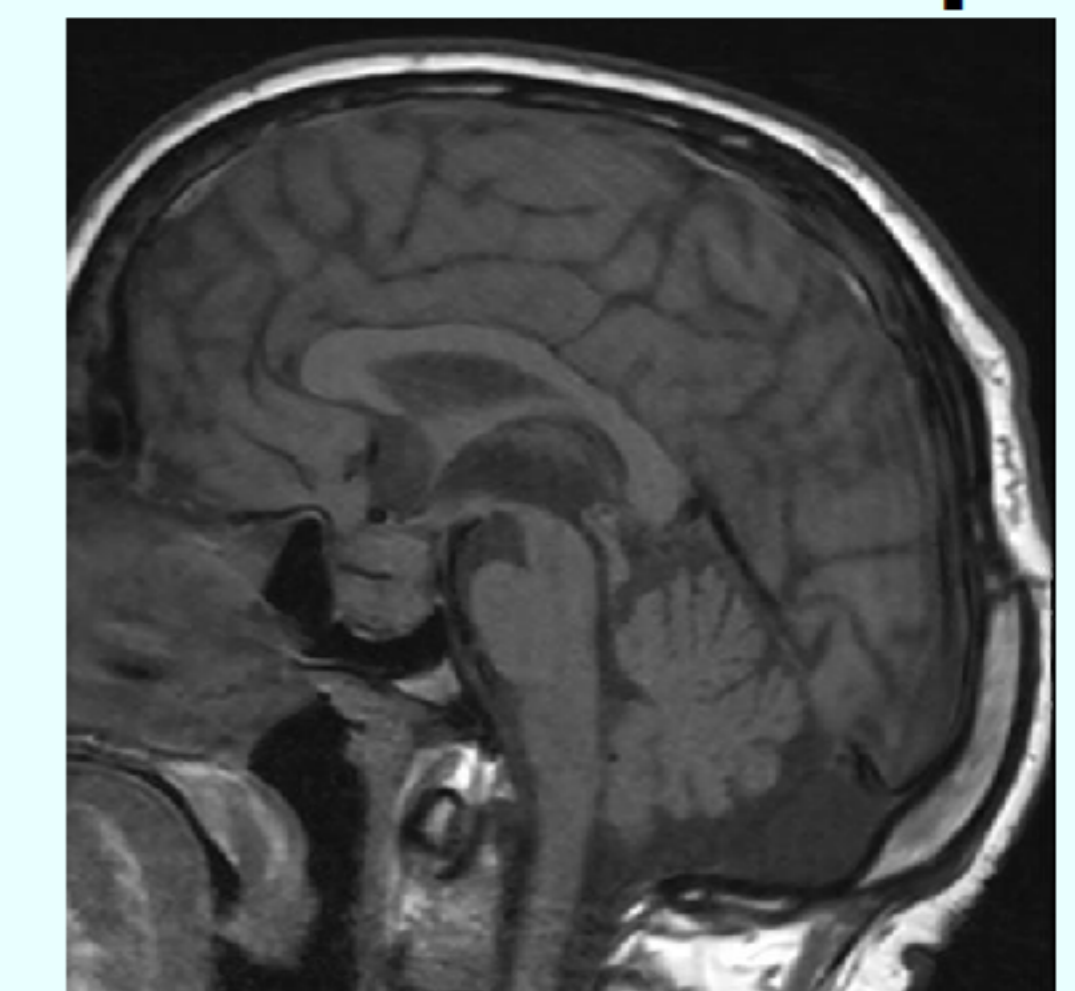
## Management:

He was started on Dexamethasone and Levothyroxine and underwent trans-sphenoidal pituitary adenomectomy. Post-operatively, his bitemporal hemianopia resolved partially. His testicular size reduced to 25 ml bilaterally within 6 weeks after surgery.

## His post-op results are as follows:

Haemoglobin: 158g/L (130-180)	Alpha sub-unit: normal
Haematocrit: 0.45 L/L (0.40-0.50)	TSH: 0.68 mU/L (0.3-4.7)
LH: 0.6 IU/L (3.0-13); FSH: 3.3 IU/L (1.3-9.2)	FT4: 5.4 pmol/L (9.5-21.5); FT3: 1.6 pmol/L (3.5-6.5)
Testosterone: < 1 nmol/L (9-25)	Prolactin: 238 mIU/L (0-450)
free Testosterone: 3 pmol/L (215-760)	0900am Cortisol: <20 nmol/L
Sex Hormone Binding Globulin: 13 nmol/L (15-48)	GH: <0.1microgram/L

## MRI Post-op



## Discussion:

Gonadotroph pituitary adenomas are common but majority of them are classified as non-functional as they do not lead to features of hormonal excess.

Typical presentation of functional gonadotroph adenoma in males includes testicular enlargement with hypogonadism and mass effects due to the tumour. Usual biochemical anomalies are elevated serum FSH with borderline low serum LH & testosterone levels (1).

There are few case reports of patients presenting with elevated LH, FSH & Testosterone but clinical features of hyperandrogenism were not described (2-4).

In our case, he had elevated LH, FSH & Testosterone level along with features of hormonal excess such as testicular enlargement along with polycythemia, premature baldness & increased muscle bulk. Post-operatively, he developed panhypopituitarism and he was started on replacement hormones. His polycythemia & testicular enlargement have now resolved.

## References:

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3. Chamoun R, Layfield L, Couldwell WT. Gonadotroph adenoma with secondary hypersecretion of testosterone. World Neurosurg. 2013;80:900.e7–e11.
4. Dizon MN, Vesely DL. Gonadotropin-secreting pituitary tumor associated with hypersecretion of testosterone and hypogonadism after hypophysectomy. Endocr Pract.2002;8:225–231.

