

# Post-operative complications and recurrence rates of Pituitary Adenomas: a case series of 33 patients

## Introduction

- Pituitary adenomas are benign, slow growing tumours arising from the pituitary gland. They account for 10-15% of all diagnosed intracranial tumours.<sup>1</sup>
- Resection of pituitary adenomas by transphenoidal hypophysectomy (TSH) is associated with immediate cure rate, resolution of symptoms and restoration of normal pituitary function.<sup>2</sup> Prolactinomas are the most common functioning (hormone-secreting) tumour and are typically managed medically with Bromocriptine or Cabergoline.
- Macroadenomas (>1cm), whether functioning or non-functioning, are usually associated with symptoms of an intracranial mass such as headache or a visual field (VF) defect.<sup>2</sup> Rates of recurrence are highest among non-functioning macroadenomas, possibly as many patients are asymptomatic until significant tumour growth causes compression of the optic chiasm with supra- and para-sellar extension, making curative surgery less feasible than with microadenomas restricted to the sella turcica.
- Evidence used for NICE guidance regarding TSH features rates of intraoperative complications but has no published standards on post-operative complications due to a lack of long term follow up data.<sup>3</sup>
- There is no national consensus in the UK for duration of follow up. No prognostic factors have been identified to predict tumour recurrence, making patient selection difficult.<sup>4</sup> Previous reviews have suggested that lifelong follow up is indicated in these patients.<sup>5</sup>

## Aims

- To review rates of recurrence and surgery-related complications during long-term surveillance in patients with pituitary adenoma

## Methods

We reviewed the medical records of 33 patients with pituitary adenomas followed up in a district general hospital. TSH procedures were performed at the closest tertiary centre. We evaluated presenting symptoms, tumour types and rates of recurrence and complications during follow up. Endocrine symptoms encompasses all symptoms related to pituitary dysfunction (eg amenorrhoea, impotence, weight gain etc)

## Hormones Secreted by the Pituitary Gland

Anterior:	Growth Hormone
	Adrenocorticotrophic Hormone
	Thyroid Stimulating Hormone
	Luteinizing Hormone
	Follicle-stimulating hormone
	Prolactin
Posterior:	Antidiuretic Hormone
	Oxytocin

## Results

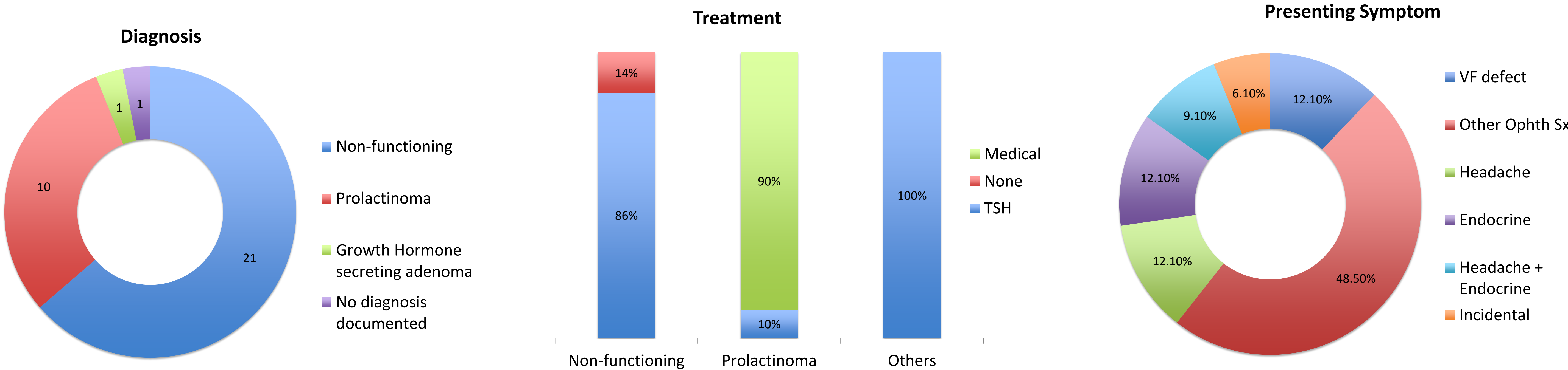
- Number of patients = 33
- Median age at presentation = 58 (range 34 – 81)
- Male:Female = 1.5
- Median follow-up duration = 72 months (range 2 – 352)

### TSH post-operative complications (n=21):

Empty sella syndrome: 3 cases (12%), 2 years, 11 years and 15 years post-TSH  
Chiasmal traction: 1 case (4%), 14 years post-TSH

### Three cases of tumour recurrence (12%):

- 1) Diagnosis: Non-functioning macroadenoma  
Δ of recurrence after TSH: 5 years
- 2) Diagnosis: Non-functioning macroadenoma  
Δ of recurrence after TSH: 11 years
- 3) Diagnosis: Non-functioning macroadenoma  
Δ of recurrence after TSH: 2 years



## Conclusions

- Despite the small sample size, we have demonstrated that recurrence of non-functioning adenomas can occur after long periods of surveillance (2-11 years)
- We have also demonstrated that TSH-related post-surgical complications can also occur long after the operation (2-15 years)
- No national guidance consensus exists for duration of follow-up following treatment of a pituitary adenoma. Our evidence supports a body of available evidence that suggests life-long period is indicated in these patients. With an ageing population, increasing demands on eye clinics and the current crisis of long-term surveillance caused by COVID-19, this may represent a challenge for ophthalmic units.

## References

1. Caulley L et al. Surgical and non-surgical interventions for primary and salvage treatment of growth hormone-secreting pituitary adenomas in adults. Cochrane Database of Systematic Reviews 2020, Issue 3. Art. No.: CD013561
2. Roelfsema F, Biermasz NR, Pereira AM. Clinical factors involved in the recurrence of pituitary adenomas after surgical remission: a structured review and meta-analysis. *Pituitary* 2012; 15: 71-83
3. Endoscopic transsphenoidal pituitary adenoma resection. NICE <https://www.nice.org.uk/guidance/ipg32> (accessed 5th September 2020)
4. Prete A, Corsello SM, Salvatori R. Current best practice in the management of patients after pituitary surgery. *Ther Adv Endocrinol Metab* 2017; 8(3): 33-48
5. Dekkers OM, Pereira AM, Romijn JA. Treatment and follow-up of clinically nonfunctioning pituitary macroadenomas. *J Clin Endocrinol Metab* 2008; 93(10): 3717-26