

Case Lessons 41-2025

Long-Term Bimodal Management of a Giant FPA PRL-Secreting Pituitary Macroadenoma: A 10-Year Follow-Up Case Aligned With 2025 CNS Evidence-Based Guidelines

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Abstract

Background: Prolactin-secreting pituitary macroadenomas are commonly treated with dopamine agonists; however, surgery remains indicated in selected cases with progressive visual impairment or mass effect.

Case Description: We report the case of a 47-year-old male followed over a 10-year period for a prolactin-secreting pituitary macroadenoma presenting with progressive visual field deterioration. Due to the severity of optic pathway compression and rapid visual decline, the patient underwent transcranial surgical resection. Postoperatively, long-term dopamine agonist therapy with cabergoline (Dostinex) was initiated. Serial endocrine and radiological follow-up demonstrated progressive tumor regression, culminating in complete radiological disappearance on magnetic resonance imaging (MRI) in 2025.

Discussion: Management decisions were guided by contemporary evidence-based recommendations and aligned with the CNS systematic review and guidelines for functioning pituitary adenomas. This case illustrates the role of individualized, algorithm-based decision-making integrating surgical intervention and sustained medical therapy in prolactinomas with aggressive mass effect.

Conclusion: Combined surgical decompression and long-term dopamine agonist therapy can achieve durable tumor control and complete radiological remission in selected prolactin-secreting macroadenomas, even after initial surgical intervention.

Introduction

Prolactinomas represent the most common subtype of functioning pituitary adenomas and are typically managed medically with dopamine agonists, achieving hormonal normalization and tumor shrinkage in the majority of cases. Surgery is generally reserved for patients with intolerance or resistance to medical therapy, or for those presenting with acute or progressive neurological compromise.

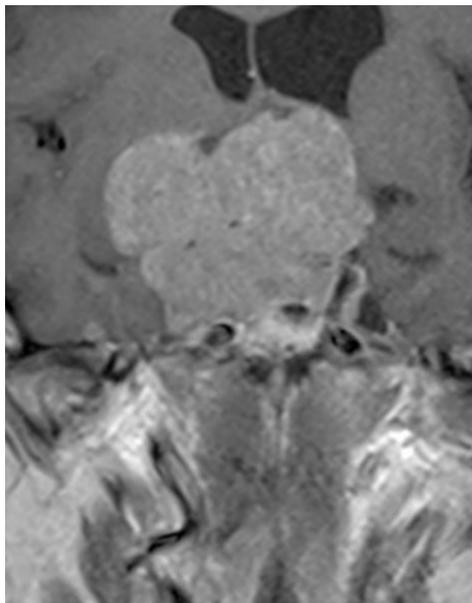
The **Congress of Neurological Surgeons (CNS) 2025 systematic review and evidence-based guidelines** emphasize that while transsphenoidal surgery is first-line for most functioning pituitary adenomas, **lactotroph adenomas constitute a notable exception**, with medical therapy preferred unless mass effect or visual deterioration mandates surgical intervention.

We present a long-term follow-up case illustrating guideline-concordant escalation from surgical decompression to chronic medical therapy in a patient with severe visual compromise.

Case Presentation

A 47-year-old male, first presentation in **2016**, with progressive visual field deficits, headaches, and biochemical evidence of hyperprolactinemia. There was no relevant family history of pituitary disease.

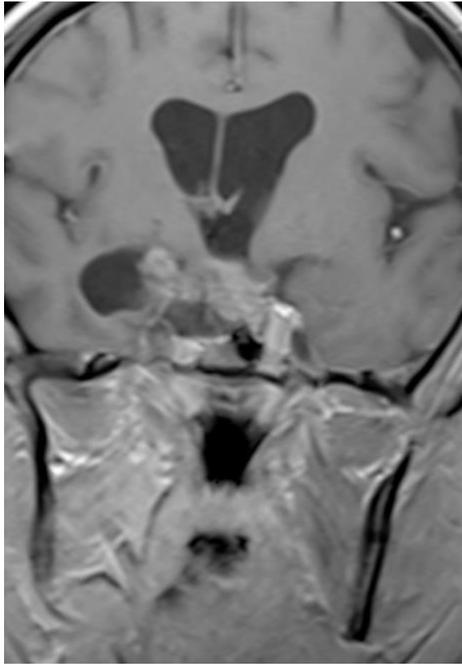
Magnetic resonance imaging revealed a large prolactin-secreting pituitary macroadenoma with suprasellar extension and significant compression of the optic chiasm. Visual field testing demonstrated progressive bitemporal hemianopia. Serum prolactin levels were markedly elevated, consistent with a functioning lactotroph adenoma.



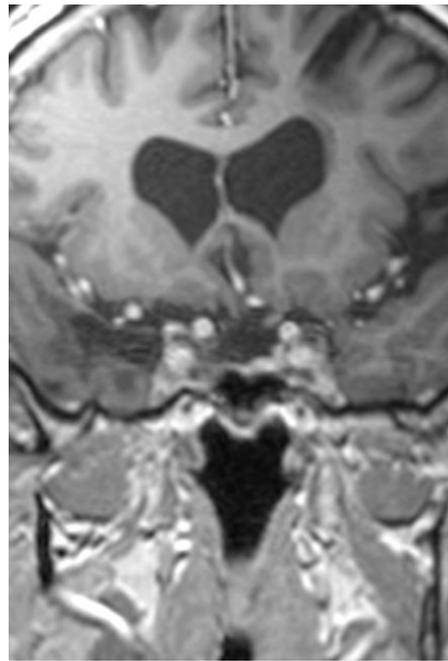
MRI presentation in 2017, PRL KNOSP IV



MRI in 2020



MRI in 2023



MRI in 2025

Given the tumor size, extension, and anatomical characteristics, a **transcranial surgical approach** was selected to achieve optimal optic nerve decompression.

Following surgery, the patient demonstrated stabilization and partial improvement of visual function. Residual tumor tissue was identified on postoperative imaging and subtotal resection was confirmed. Long-term **dopamine agonist therapy with cabergoline (Dostinex)** was initiated to control prolactin hypersecretion and promote residual tumor regression, consistent with established endocrine practice for prolactinomas.

The patient was followed over a **10-year period** with:

- Serial endocrine evaluations (serum prolactin levels)
- Periodic MRI surveillance
- Ophthalmologic assessments

Cabergoline therapy was well tolerated and resulted in sustained biochemical remission. Progressive radiological regression of the residual tumor was observed. The **final MRI performed in 2025 demonstrated complete radiological disappearance of the adenoma**, with no evidence of recurrence.

Discussion

Recent CNS guidelines primarily focus on perioperative medical management for functioning pituitary adenomas undergoing transsphenoidal surgery, they clearly acknowledge that **lactotroph adenomas require individualized management** and are frequently excluded from standardized surgical pathways due to the effectiveness of dopamine agonists.

This case highlights that:

- Surgery remains a critical option in prolactinomas with severe mass effect
- Long-term cabergoline therapy can achieve complete tumor resolution even after partial surgical resection
- Sustained follow-up is essential, as durable remission may occur many years after initial intervention

Conclusion

After conducting a double-blind review in 1953 abstracts and 124 studies, Task Force members emphasize non-aggressive surgery after biochemical endocrine control can be achieved after medical therapy. CNS emphasis on tailoring treatment based on tumor behavior, neurological risk, and long-term disease control.

This 10-year follow-up case demonstrates that **combined surgical and medical management**, guided by evidence-based principles and individualized decision-making, can result in complete radiological disappearance of a prolactin-secreting pituitary macroadenoma.

References

1. Turin CG, Kerr JM, Post KD, et al. **Congress of Neurological Surgeons Systematic Review and Evidence-Based Guidelines for the Role of Medical Perioperative Management for Patients With Functioning Pituitary Adenomas.** *Neurosurgery.* 2025;97(Suppl 3):S1–S14.
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