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Case Report

Hemorrhage in a pituitary microprolactinoma presenting as primary infertility with mild hyperprolactinemia

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ABSTRACT

Pituitary apoplexy is usually associated with macroadenomas and overt neuro-ophthalmic symptoms. Hemorrhage within pituitary microadenomas is rare and may present subtly, resulting in delayed diagnosis. A young woman presented with primary infertility and mildly elevated serum prolactin levels. Following initiation of cabergoline therapy, she developed new-onset severe headache. Magnetic resonance imaging revealed hemorrhage within a previously undiagnosed pituitary microprolactinoma. Conservative management with modification of dopamine agonist therapy led to symptomatic improvement. Mild hyperprolactinemia may occasionally mask underlying pituitary pathology. Severe headache after dopamine agonist initiation should prompt early neuroimaging, regardless of adenoma size. Early recognition allows appropriate conservative management and preservation of fertility.

Keywords: Primary infertility, Hyperprolactinemia, Pituitary microprolactinoma, Cabergoline, Pituitary hemorrhage

INTRODUCTION

Hyperprolactinemia is a common endocrine abnormality encountered during infertility evaluation and is frequently functional or idiopathic in nature.^{1,2} Mild elevations in serum prolactin are often managed empirically with dopamine agonists without prior pituitary imaging, particularly in the absence of neurological symptoms.³ Pituitary apoplexy, defined as hemorrhage or infarction of the pituitary gland, is typically associated with macroadenomas and presents with acute headache, visual disturbances, vomiting and altered sensorium.⁴

Hemorrhage within microprolactinomas (<10 mm), however, is rare and may present atypically or remain clinically silent.⁵ This is a case of hemorrhage in a pituitary microprolactinoma unmasked during infertility treatment after initiation of cabergoline therapy.

CASE REPORT

28 years old nulligravida woman presented with primary infertility of 18 months duration. She reported scanty menstrual flow over the preceding three to four months but had otherwise regular cycles. There was no history of galactorrhea, headache, visual disturbances, vomiting, seizures or altered consciousness at initial presentation. Her medical and surgical history was unremarkable. General and gynecological examination findings were within normal limits. Secondary sexual characteristics were well developed and body mass index was within the normal range.

Investigations revealed normal serum follicle-stimulating hormone, luteinizing hormone, thyroid-stimulating hormone and serum anti mullerian hormone levels. Serum prolactin was elevated at 114 ng/mL. Pelvic ultrasonography showed a normal uterus and ovaries.

Hysterosalpingography showed bilateral patent fallopian tubes.

Male partner evaluation, including semen analysis, was within normal limits. In view of mild hyperprolactinemia with otherwise normal work-up, the patient was started on cabergoline 0.5 mg once weekly.

After two doses of cabergoline, the patient developed new-onset severe headache, which was initially managed symptomatically with analgesics. She also noticed minimal galactorrhea. There were no associated visual complaints, vomiting or neurological deficits. Magnetic resonance imaging of the sella turcica revealed a 3.8 mm pituitary microadenoma with focal intrasellar hemorrhage, consistent with a hemorrhagic microprolactinoma (Figure 1).

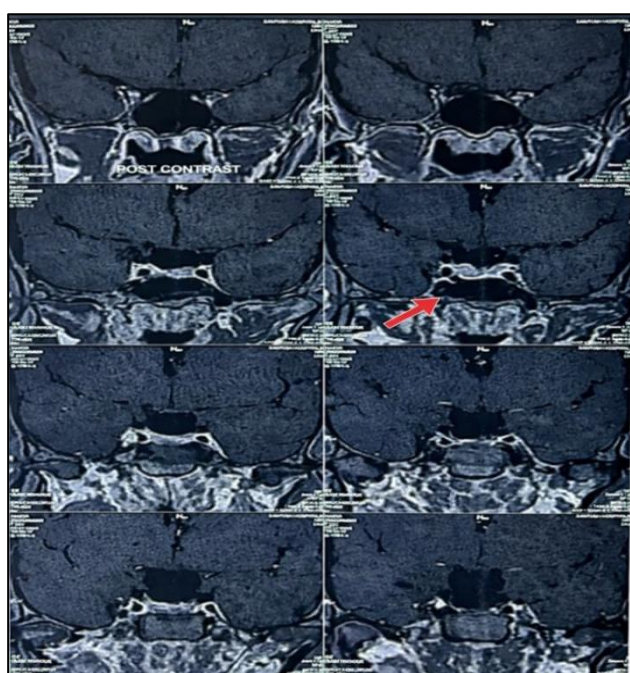


Figure 1: MRI brain (T1-weighted image) showing hemorrhage within a pituitary microadenoma (arrow).

Ophthalmological and neurological assessment showed normal evaluation. Cabergoline was discontinued and the patient was initiated on bromocriptine 5 mg once daily. She tolerated the medication well, with progressive resolution of headache and galactorrhea.

Over the subsequent three months, her menstrual cycles became regular and serum prolactin was normalized but repeat MRI showed minimal change in the size of adenoma. Under neurologist guidance, cabergoline was later cautiously reintroduced along with antiepileptics which she tolerated without recurrence of severe symptoms. Cabergoline stopped after 2 months and antiepileptics gradually tapered.

DISCUSSION

Mild hyperprolactinemia in infertility

Hyperprolactinemia is a well-recognized and potentially reversible cause of infertility.¹ Mild elevations in serum prolactin levels are commonly encountered during infertility evaluation and are often attributed to stress, macroprolactin or functional causes.² In such scenarios, empirical treatment with dopamine agonists is frequently initiated without prior pituitary imaging, especially in the absence of galactorrhea or neurological symptoms.³ This approach is generally considered safe, but carries the risk of overlooking underlying pituitary pathology, as present in this case.

Dopamine agonist therapy and pituitary hemorrhage

Pituitary apoplexy refers to hemorrhage or infarction within the pituitary gland, most often occurring in macroadenomas.⁴ Hemorrhage within pituitary microadenomas is rare and its association with dopamine agonist therapy is less commonly reported.⁵ Dopamine agonists such as cabergoline can cause rapid tumor shrinkage, potentially leading to vascular compromise and hemorrhage inside tumor.⁶ Although a direct causal relationship has not been conclusively established, the temporal association between cabergoline initiation and onset of severe headache in our patient suggests a possible precipitating role.

Diagnostic challenges in microprolactinomas

Unlike classical pituitary apoplexy, which presents with severe symptoms such as sudden severe headache, vomiting, visual loss and altered consciousness, hemorrhage in microprolactinomas may present subtly.⁵ In this case, the only alarming symptom was new-onset severe headache, without visual or neurological complaints. This atypical presentation can easily be misinterpreted as a common adverse effect of dopamine agonist therapy, leading to delayed diagnosis if neuroimaging is not promptly performed.⁷

Clinical implications and learning from this case

This case highlights the importance of maintaining a high index of suspicion when patients develop atypical or severe symptoms following initiation of dopamine agonist therapy, even in the setting of mild hyperprolactinemia.³ Early magnetic resonance imaging allowed timely diagnosis, conservative management and avoidance of unnecessary surgical intervention.⁴ In this case, individualized medical management enabled symptom resolution while preserving the patient's fertility goals.¹

CONCLUSION

Mild hyperprolactinemia in infertility should not always be considered benign. New-onset severe headache

following dopamine agonist initiation warrants immediate pituitary imaging. Early recognition of microprolactinomas allows effective conservative management and favorable reproductive outcomes.

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