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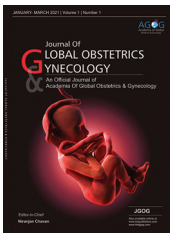
Case Report



A Rare Case Report on Pregnancy with Pituitary Microadenoma – Prolactinoma

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ABSTRACT

To preview the feto-maternal outcome in pregnant women with pituitary microadenoma. The way that tumors impact pregnancy varies according on the hormone that is released. While therapy for various tumors is not required during pregnancy, certain hormone oversecretion syndromes (Cushing's disease and hyperthyroidism) must be managed to ensure that pregnancy progresses without undue morbidity to either the mother or the fetus. Primarily for prolactinomas, surveillance for tumor growth during pregnancy is required. The case is a 28-year-old female Mrs XYZ Gravida 5 Para 1 Living 1 Abortion 1MTP1 with 6.1 weeks gestation with a known case of pituitary microadenoma. The conclusion is pituitary microadenomas in pregnancy require close surveillance during pregnancy and proper follow-up after the lactation period. An accurate diagnosis and planned management of the complications during pregnancy and post-partum pituitary microadenoma can lead to favourable maternal and fetal outcomes. All differentials need thorough consideration.

Key words: Bromocriptine, Cabergoline, Galactorrhea, Lactation, Pituitary microadenomas

INTRODUCTION

The most prevalent secreting pituitary adenoma is called a prolactinoma. The anterior pituitary gland's pituitary lactotrophic cell growth is what defines it. Ninety percentages of prolactinomas are microadenomas, with a diameter of <1 cm, and do not cause any symptoms. The typical prolactinoma presentation is a young woman experiencing infertility, galactorrhea, and irregular menstruation. When a patient has a big prolactinoma (a macroadenoma larger than 1 cm), the tumor compresses the optic chiasma, resulting in compressive symptoms including bitemporal hemianopsia. When treating prolactinoma, dopamine agonists such as cabergoline and bromocriptine are recommended as initial treatments. Because it has a longer half-life and fewer adverse effects than bromocriptine, cabergoline is the better option. Moreover, cabergoline lowers tumor size and normalizes prolactin in up to 95% of patients.

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Resuming bromocriptine therapy may be required to treat a tumor that has grown larger due to pregnancy-induced prolactin-secreting tumors (PRL), such as macroadenomas, for which close observation is advised.

CASE REPORT

A 28-year-old female P1L1MTP2A1 presented with complaints of secondary infertility over 5 years. She also experienced 3–4 episodes of galactorrhea lasting for 7–10 days which was treated by a local physician, details of which are not available.

Five years later, the patient started complaining of severe headaches predominantly in the occipital area. The patient was referred to the Endocrinology department with existing complaints of headaches and secondary infertility with past episodes of galactorrhea. Serum prolactin which was raised to 220 mg/dl, led to suspicion of pituitary microadenoma – prolactinoma. A subsequent magnetic resonance imaging (MRI) brain confirmed the diagnosis. On MRI with dynamic contrast study, a tiny 2 × 1 mm sized hypoenhancing nodule was noted in the anterosuperior aspect of the right half of the pituitary gland suggestive of pituitary microadenoma [Figure 1].

She was started on Tablet Cabergoline 2.5 mg twice a week. One week later, her urine pregnancy test was positive, confirmed

with a ultrasonography obstetrics scan. She has shifted to Tablet Bromocriptine 1.5 mg daily throughout pregnancy.

The patient underwent an emergency lower-segment cesarean section given scar tenderness. Endocrine reference was taken in the postpartum period and bromocriptine was stopped for the continuation of lactation. Follow-up MRI brain was advised after 2 years or after discontinuation of lactation whichever is sooner.

DISCUSSION

Prolactinomas, common pituitary adenomas, stem from lactotroph cells secreting prolactin, constituting 40% of such tumors.[1] Dopamine inhibition by the hypothalamus regulates prolactin. Mainly affecting women, these microadenomas (<10 mm) cause elevated prolactin, resulting in amenorrhea, galactorrhea, and infertility.[2] Prolactin's primary role is lactation, with diverse functions in growth, neurotransmission, and immunoregulation in various tissues.

Patients with prolactinomas have tumor cells that express estrogen receptors;[3] the elevated estrogen levels during pregnancy can cause a significant increase in the prolactinoma's growth, and lactotroph cell hyperplasia can eventually cause a rise in blood prolactin. The primary worry is the potential for tumor growth while pregnant. Pregnancy-related tumor enlargement[4] risk is observed to be related to tumor size. Literature data show that while tumor expansion is only 3% for macroprolactinomas, it can reach 32% for macroprolactinomas that have never had surgery.

Before conception, MRI should be performed to measure the size of the tumor and provide a baseline against which MRIs obtained during pregnancy can be compared.[5] Moreover, MRI assists in differentiating between a pregnancy-related hemorrhage into a tumor and a simple tumor expansion.

Because prolactin tends to rise during pregnancy, it is not a reliable indicator of an increase in tumor size and is not helpful in clinical evaluation.

There is strong evidence to advocate stopping DA medication once pregnancy is confirmed, given the extremely minimal risk of microprolactinoma expansion during pregnancy.[6] The patient should be informed that there is very little chance of an adenoma growing during pregnancy and that, in the unlikely event that symptoms do appear, medical intervention will probably be successful.

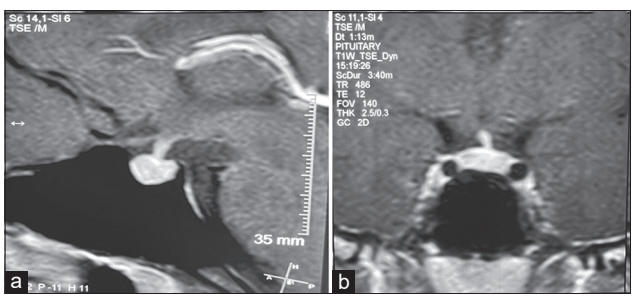

Figure 1: (a) Sagittal section and (b) coronal section

To rule out the likelihood of a tumor enlargement, the patient should be urged to go for an urgent assessment in the event of atypical symptoms such a severe headache or visual disruption. The considerable variability of prolactin during pregnancy is not always the reason for repeated prolactin assays.

While serial MRI examinations or visual field tests are not necessary during pregnancy, the patient should have baseline formal visual field testing[7] at the time of diagnosis and should be clinically monitored every 2–3 months.[8] Nevertheless, there is no evidence that gadolinium or MRI scans cause harm to the developing embryo.

If the patient starts to have headaches or visual disturbances, a non-GAdolinium MRI should be done rather than a computed tomography scan to determine whether the tumor's size has changed.

Since DA bromocriptine is the first medicine of choice in these situations, it should be started as soon as significant tumor growth is seen.[9]

Serum prolactin levels should be checked 2 months after delivery or stopping breastfeeding for women who do not have any symptoms during pregnancy.[10] If the results are comparable to those obtained before to treatment, the medication should be resumed.[11] In a similar vein, women who intend to breastfeed should undergo an MRI scan within 4–6 weeks of giving birth to confirm the tumor's stability. This is because dopamine antagonists lower serum PRL levels, which can hinder nursing.

CONCLUSION

Pregnancy makes prolactinoma difficult to manage. Since there are few clinical trials comparing the effectiveness of medical therapy to alternative medicines, each patient is treated individually. Excellent microadenoma outcomes enable patients to safely stop using dopamine agonists while being closely monitored by a clinician for any signs of aggravation.

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