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Case Report

A challenging case of prolactinoma in pregnancy

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ABSTRACT

Prolactinomas are the most common functional tumour of pituitary gland arising from lactotrophs. Microadenomas constitute 90% and the rest are macroadenomas. Females are more prone to develop macroadenomas. High estrogen levels during pregnancy leads to increase in the size of prolactinomas thereby leading to compression of optic chiasma. This eventually manifests as visual symptoms and headache. Pharmacotherapy with dopamine agonists is the treatment of choice. We present here a case of prolactinoma in a pregnant woman whose symptoms worsened due to increase in size of the tumor. Multidisciplinary management resulted in successful outcome.

Keywords: Bitemporal hemianopia**,** cabergoline, lactotroph hyperplasia, Optic chiasma, Prolactinoma, pregnancy, Transsphenoidal

INTRODUCTION

Prolactinoma in pregnancy is a challenging condition as this tends to grow during pregnancy. Prolactinoma occurs with a mean prevalence of approximately 10 per 100,000 in men and 30 per 100,000 in women, with a peak prevalence in women aged 25 to 34 years.[1] They are the most common secretory pituitary tumours and are diagnosed more frequently in females possibly because of the more striking presenting features such as amenorrhea and/or galactorrhea.[2] In normal pregnancy, pituitary gland volume increases by about 70% due to estrogen induced pituitary lactotroph hyperplasia thereby resulting in increase in the size of pituitary adenomas. Risk of development of new neurological sequelae like headache, optic nerve compression etc ranges from 1.6 to 5.5%.[3] Symptoms such as headache and visual loss become more obvious due to pressure effect on the optic chiasma and sometimes it can lead to blindness due infarction and haemorrhage.[4]

CASE REPORT

A 27-year-old Primigravida with 9 months of gestation came to our hospital for safe confinement. She was a diagnosed case of Prolactinoma on medical management since last 10 years. Patient had taken regular antenatal visits at a private hospital but due to worsening headache and visual symptoms she was referred to our hospital for multidisciplinary care. Her general and obstetric examination was normal. Patient was diagnosed with Prolactinoma in year 2011 with baseline prolactin level of 1913 ng/ml. She was started on Cabergoline but once her symptoms were relieved, she stopped the medications on her own in 2013. Patient had recurrence of visual symptoms in January 2021; hence MRI was done which was suggestive of 15×18×19 mm sized well defined altered signal intensity lesion seen in pituitary fossa, and prolactin level was 1307 ng/ml for which the patient was restarted on cabergoline. She was monitored closely and her repeat prolactin levels in April 2021 were 183.35 ng/ml. Her visual symptoms and headache were relieved.

Patient conceived a year later in October 2022 and after consultation with her endocrinologist cabergoline was stopped. Her prolactin levels in October 2022 were 67.08 ng/dl. She was closely monitored for re-appearance of visual symptoms and headache. Visual field testing was done in each trimester. Patient complained of headache at 7 months gestation for which MRI was repeated and the size of Prolactinoma increased to 13×18×20 mm showing proteinaceous material thereby suggesting an increase in size, abutting optic chiasma with mild anterior and superior displacement. As she was having visual symptoms, cabergoline was restarted. Obstetric ultrasound done at 34 weeks gestation was suggestive of fetal growth restriction and oligohydramnios. Colour doppler was normal hence the patient was kept on conservative management. Multidisciplinary approach coupled with pharmacotherapy till 37 weeks of gestation resulted in optimal feto-maternal outcome. Elective LSCS was done. Patient gave birth to a term baby with birth weight of 2.4 kg. In the postpartum period, her visual symptoms and headache improved. As the patient opted for breast-feeding, she was allowed to breastfeed with close monitoring and cabergoline was stopped. Serum prolactin was repeated after 2 months of cessation of breastfeeding which was 112 ng/ml.

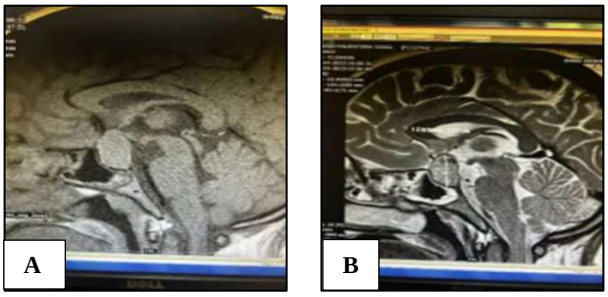

Figure 1 (A and B): Sagittal section of MRI brain showing prolactinoma.

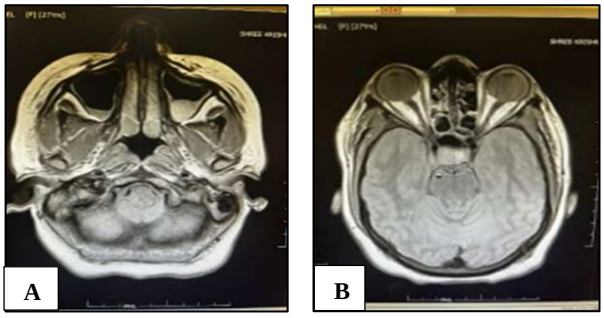

Figure 2 (A and B): Transverse section of MRI images showing space occupying lesion (Pituitary adenoma).

DISCUSSION

Prolactinomas express estrogen receptors hence a rise in estrogen level causes an increase in volume of prolactinoma and a concurrent rise in prolactin levels due to hyperplasia of lactotrophs.[5] MRI is recommended prior to conception for having a basic idea about the exact tumor size and for documentation purpose as well. An increase in tumor size during pregnancy can thus be compared if baseline parameter is available. It also helps in differentiating between haemorrhage in tumor versus enlargement of tumor size during pregnancy.[6] There are very case reports suggesting worsening of Microadenomas during pregnancy.

Compression over the optic chiasma with increased tumor size on MRI and worsening symptoms signals pharmacotherapy with Dopamine Agonist. Commonly available Dopamine agonists are Bromocriptine and Cabergoline. Bromocriptine has a shorter half-life so frequent dosing is required, while Cabergoline has a higher efficacy in normalising prolactin levels and reducing tumor size. There is an added advantage over Bromocriptine in terms of dosing schedule. Poor response to pharmacotherapy or deterioration of symptoms is an indication for transsphenoidal debulking surgery. It can be planned in second trimester if needed or after delivery if pregnancy is approaching term.[7] Serial measurement of Serum prolactin levels is not warranted during pregnancy as it co-relates poorly with tumor size. Breastfeeding does not increase the prolactin production thus mothers can breastfeed and pharmacotherapy can be initiated after cessation of lactation.[8] According to Bashir A (2021) 41.6% of patient in whom cabergoline was stopped during pregnancy achieved remission after pregnancy and in 25% adenoma size was decreased by more than 50%.[9] Usually, Dopamine agonists should be discontinued on confirmation of pregnancy in those with prolactinomas. Pregnant mothers need close observation and they should be educated about the worsening of visual symptoms and persistent headache anytime during pregnancy as this warrant's urgent evaluation. Dopamine agonist therapy should be withheld in actively nursing mothers but in severe cases it is recommended to continue dopamine agonist therapy and breastfeeding be avoided to prevent acute and rapid progression of the disease. Poor response to pharmacotherapy, worsening symptoms requiring surgical intervention and optimal delivery route and timing thereby ensuring maternal and fetal well-being is a challenging task for the treating obstetrician. Due to several hours of labour as well as mental and physical stress leading to alteration of brain circulation especially in the pituitary gland, can affect the symptoms, especially controversial. Vaginal delivery is preferred in patients with asymptomatic macroadenoma however, in cases of symptomatic macroadenoma there is a dilemma regarding the mode of delivery.

CONCLUSION

There should be close clinical monitoring in pregnant patients with known history of macro prolactinomas in each trimester of pregnancy for secretory adenomas by MRI and visual field testing. DA during pregnancy and timely caesarean delivery, and intensive conservative

treatment with close monitoring in some selective cases could have satisfactory results, in terms of foetal outcomes, regression of the tumor, and resumption of visual activity. Breastfeeding is allowed and DA is withheld in patients who want to breastfeed after explaining the symptoms of tumor enlargement and need for urgent follow up in case symptoms appear.

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REFERENCES

1. Yatavelli RKR, Bhusal K. Prolactinoma. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2024:459327.
2. Andre E Manov. Pituatary microadenomas. Medscape.2023.
3. Almalki MH, Alzahrani S, Alshahrani F, Alsherbeni S, Almoharib O, Aljohani N and Almagamsi A managing prolactinomas during pregnancy. Front Endocrinol. 2015;6:85.
4. Sirilert S,Traisrislip K,Pantasri T, Tongsong T .Pregnancy-induced progressive change of prolactin-secreting macroadenoma with the development of bitemporal hemianopia and severe headache. Clin Case Rep. 2019;7(7):1365-9.
5. Meled S, Casanueva FF, Hoffmann AR, Kleuberg DL, Montori VM, Schlechte JA. Diagnosis and treatment of hyperprolactinemia: an endocrine society clinical practice guideline. J Clin Endocrinol metab. 2011;96(2):273-88.
6. Molitch ME. Endocrinology in pregnancy: Management of pregnancy with prolactinoma. Eur J Endocrinol. 2015;72(5):205-13.
7. Chrisoulidou A, Boudina M, Karavitaki N, Bili E, Wass J. Pitutary disorders in pregnancy Hormones. 2015;14(1):70-80.
8. Auriemma RS, Perone Y, Disarno A, Grasso F, Guerra E, Gasperi M. Results of single centric observational 10-year survey study in recurrence of hyperprolactinemia after pregnancy and lactation. J clin Endocrinol Metab. 2013;98(1):372-9.
9. Laway AB, BABA MS, Bansiwal SK, Choh NA. Prolactinoma outcome after pregnancy and lactation. Indian Journal of Endocrinology and Metabolism. 2021;25(6):559-62.

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