

A silent corticotroph pituitary neuroendocrine tumor in pregnancy: Diagnostic pitfalls and management considerations

*Sajon MRF¹, Jahan S², Chowdhury D³, Khan RA⁴, Rahman MA⁵, Chaki RB⁶, Bokshi A⁷

¹Md Rayhan Faruk Sajon, Resident, Department of Endocrinology, Bangladesh Medical University, Dhaka, Bangladesh; ²Sharmin Jahan, Professor, Department of Endocrinology, Bangladesh Medical University, Dhaka, Bangladesh; ³Dhiman Chowdhury, Professor, Department of Neurosurgery, Bangladesh Medical University, Dhaka, Bangladesh; ⁴Robert Ahmed Khan, Associate Professor, Department of Neurosurgery, Bangladesh Medical University, Dhaka, Bangladesh; ⁵Mohammad Atikur Rahman, Associate Professor, Department of Neurosurgery, Bangladesh Medical University, Dhaka, Bangladesh; ⁶Rakesh Barshan Chaki, Resident, Department of Endocrinology, Bangladesh Medical University, Dhaka, Bangladesh; ⁷Arnab Bokshi, Resident, Department of Endocrinology, Bangladesh Medical University, Dhaka, Bangladesh

Abstract

Background: Silent corticotroph pituitary neuroendocrine tumors (PitNETs) are uncommon corticotroph-lineage tumors that lack the clinical and biochemical features of Cushing syndrome. They are often diagnosed only after surgery through histopathological and immunohistochemical evaluation. Pregnancy adds diagnostic and therapeutic complexity because physiological pituitary enlargement and pregnancy-related changes in cortisol physiology can complicate assessment. We report a rare case of a silent corticotroph PitNET presenting during pregnancy with progressive visual impairment requiring surgical intervention.

Case summary: A 32-year-old woman, 8 weeks pregnant, presented with progressive headache for one year and visual disturbance for six months. She had obesity, increased abdominal girth, hirsutism and striae gravidarum, but lacked convincing clinical features of Cushing syndrome. Pituitary MRI revealed a sellar-suprasellar macroadenoma causing optic chiasmal compression. Basal cortisol was 519 nmol/L (normal 138–690) and adrenocorticotrophic hormone was elevated at 116 pg/mL (normal up to 63.5); 24-hour urinary free cortisol was mildly elevated at 191 nmol/24 h (normal 4–174), while late-night salivary cortisol was 2.41 nmol/L (normal <4). The tumor was initially considered a non-functioning macroadenoma. Progressive visual impairment prompted endoscopic endonasal transsphenoidal resection during the second trimester. Postoperatively, diabetes insipidus and secondary adrenal insufficiency developed and were managed with hormone replacement. Immunohistochemistry demonstrated strong nuclear TPIT expression, ACTH immunoreactivity in 26–50% of lesional cells, and negative PIT-1 and SF-1, confirming a silent corticotroph PitNET. At 12-week postoperative follow-up, visual function was normal and diabetes insipidus was controlled. She subsequently delivered a healthy male infant without reported complications.

Conclusions: Silent corticotroph PitNET may be indistinguishable from a non-functioning macroadenoma before surgery. Progressive visual compromise during pregnancy may necessitate second-trimester transsphenoidal decompression. Lineage-specific immunohistochemistry is essential for definitive diagnosis, and long-term surveillance is warranted. [*J Assoc Clin Endocrinol Diabetol Bangladesh*, 2026;5(Suppl 1): S81]

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***Presenting & Corresponding Author:** Dr. Md Rayhan Faruk Sajon, Resident, Department of Endocrinology, Bangladesh Medical University, Dhaka, Bangladesh, E-mail: farukrayhan20@gmail.com, ORCID iD: <https://orcid.org/0009-0003-0830-6127>