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PITUITARY-DRIVEN GONADAL HYPERSTIMULATION: A RARE PRESENTATION OF FUNCTIONING GONADOTROPH ADENOMA

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INTRODUCTION

Functioning gonadotroph adenomas, also known as follicle-stimulating hormone (FSH)-secreting pituitary adenomas (FSH-omas), are rare pituitary tumors characterized by the secretion of biologically active FSH. Unlike the more common clinically nonfunctioning gonadotroph adenomas, these tumors produce endocrine manifestations due to excessive FSH secretion. Clinical presentation may result from local mass effects such as headache, visual disturbances due to optic chiasmal compression, or from hormonal activity affecting reproductive function. The endocrine manifestations vary between males and females and can lead to diagnostic challenges.

CASES

We report two patients with functioning gonadotroph adenomas presenting with distinct clinical manifestations. The first case involved a 23-year-old female who presented with secondary amenorrhea for 4 years, accompanied by personality changes. Abdominal ultrasound demonstrated bilaterally enlarged multicystic ovaries suggestive of ovarian hyperstimulation, which subsequently regressed postoperatively. Biochemical evaluation revealed inappropriately elevated FSH levels (3.5-fold increase), with suppressed luteinizing hormone (LH) and markedly elevated estradiol levels (11-fold increase). Pituitary magnetic resonance imaging (MRI) identified a large sellar-suprasellar mass with mass effect, consistent with a pituitary macroadenoma.

The second case involved a 68-year-old male who presented with progressively worsening vision over 2 years. Hormonal evaluation demonstrated elevated FSH levels (4.5-fold increase), with relatively normal LH and low testosterone levels. Pituitary MRI revealed a sellar mass consistent with a pituitary adenoma. Both patients subsequently underwent pterional craniotomy with tumor debulking. Histopathological examination confirmed gonadotroph adenomas, with positive immunohistochemical staining for FSH.

CONCLUSION

Functioning gonadotroph adenomas are rare and may present with diverse clinical features related to gonadal hyperstimulation or mass effects. Early recognition of the characteristic hormonal profile and radiological findings is crucial for diagnosis and appropriate management. These cases highlight the importance of considering functioning gonadotroph adenoma in patients presenting with unexplained gonadal hyperstimulation or atypical reproductive hormonal profiles.