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Polyangiitis granulomatosa syndrome in hypogonadothropic hypogonadism patient

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Abstract
Introduction: Approximately two-thirds of pituitary adenomas secrete excess hormones. The increase in prolactin level suppresses the hypothalamic-pituitary-gonadal axis and can cause osteoporosis and infertility. Polyangiitis granulomatosis is a systemic disease with small vessel vasculitis. Anti-neutrophil cytoplasmic antibodies (ANCA) and especially anti-proteinase 3 (PR3) ANCA are thought to be associated with polyangiitis granulomatosis.
Case: A 41-year-old male patient had an 8x5 mm adenoma in the previous pituitary MR imaging. The patient with the diagnosis of proclactinoma and hypogonadotropic hypogonadism applied to our outpatient clinic with complaints of nausea, vomiting and joint pain. On further investigations, acute renal failure and microscopic hematuria and positive C-ANCA were detected and treatment was started immediately. Glucocorticoid and cyclophosphamide treatment was used as the treatment protocol. The patient had previously received hormone replacement therapy due to infertility due to hypogonadotropic hypogonadism caused by pituitary adenoma.
Discussion: Polyangiitis granulomatosis is a vasculitis that can have a mortal course, and rapid diagnosis and initiation of treatment significantly reduces the mortality rate. In our case, he was additionally diagnosed with prolactinoma. By carrying these two conditions, it is a rare condition.

Keywords: prolactinoma, hypogonadotropic hypogonadism, polyangiitis granulomatosis

Introduction

Currently, approximately 10% of pituitary adenomas are encountered in the pituitary gland in autopsies [1]. Pituitary adenomas may be; microadenomas (<10 mm), macroadenomas (10 mm) and giant adenomas (40 mm) [2]. Approximately two-thirds of pituitary adenomas can secrete excess hormones [3]. The pathogenesis of most pituitary adenomas is unknown [4]. Prolactinomas make up about half of pituitary adenomas, and prolactin is normally inhibited by dopamine, the neurotransmitter secreted from the hypothalamus, and diseases of the hypothalamus or pituitary gland may cause a decrease in this inhibition and an increase in prolactin levels [4]. The increase in prolactin level suppresses the hypothalamic-pituitary-gonadal axis and may cause symptoms such as loss of libido and osteoporosis, oligomenorrhea or amenorrhea and galactorrhea in women, and erectile dysfunction in men [5]. Polyangiitis granulomatosis was first described in 1939 and is a systemic disease with small vessel vasculitis and although its etiology is unknown, anti-neutrophil cytoplasmic antibodies (ANCA) and especially proteinase 3 (PR3) antibodies have been associated with this disorder. It can affect joints, skin, eyes, and almost any tissue or organ [6]. In our case, the patient who had macroadenoma in the pituitary, high prolactin levels and hypogonadotropic hypogonadism had polyangiitis granulomatosa syndrome.

Case Presentatıon

A 41-year-old male patient had an 8x5 mm adenoma (figure 1) in the pituitary MR imaging previously taken. The patient, who had diagnoses of proclactinoma and hypogonadotropic hypogonadism, used cabergoline, choriogonadotropin-alpha and human menopausal gonadotropin for infertility treatment and had a child with the *In Vitro* Fertilization method. The patient, who applied to the outpatient clinic with complaints of nausea, vomiting and joint pain, was admitted to our clinic to investigate the findings of acute renal failure, microscopic hematuria and etiology. In laboratory tests, urea: 45mg/ dl, creatinine: 1.94 mg/ dl, C-ANCA (+) > 100, microscopic hematuria in complete urinalysis, 1 g/ day proteinuria, Hb: 11.6 g/ dl, Htc: 35%, Plt: 302.000/ mm^3. Alveolar consolidation was observed in the PA imaging of the patient's lung. A diagnosis of polyangiitis granulomatosis was made when necrotizing glomerulonephritis (Figure 2) was detected in the kidney biopsy. The patient was continued with 500 mg/ day iv methylprednisolone treatment for 3 days, followed by oral methylprednisolone 80 mg/ day. In addition to corticotherapy, 1 gr cyclophosphamide was administered to the patient.

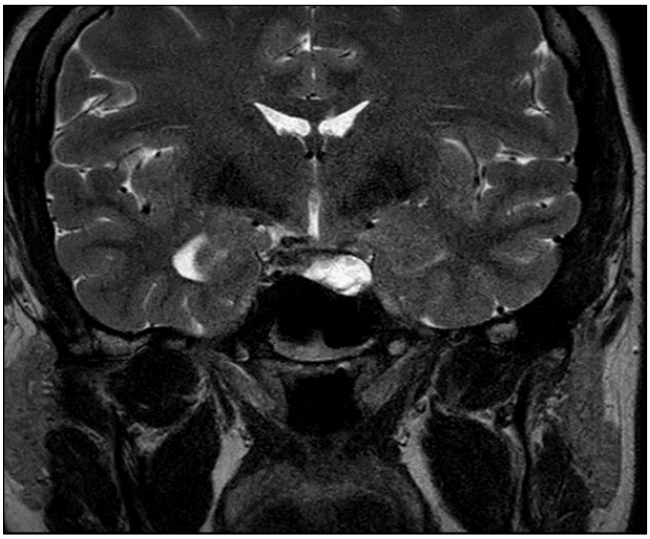

Fig 1: 8x5mm size pituitary adenoma

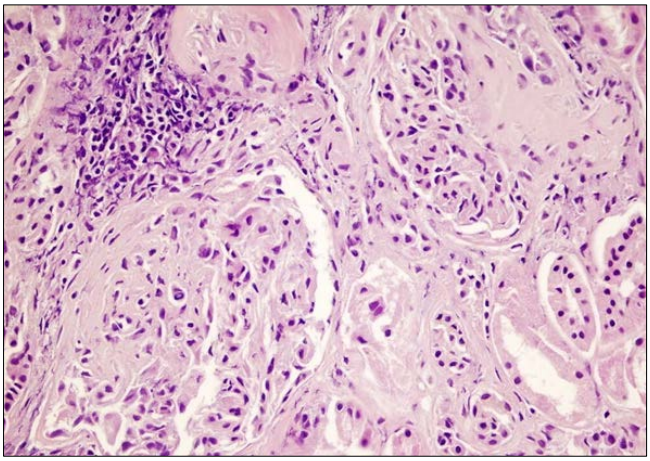

Fig 2: There is a global sclerotic glomerule at the top and glomeruli showing segmental sclerosis on both sides of it. (HE× 200)

The complaints of nausea and vomiting decreased on the 7_{th} day of the patient's treatment. Urea level decreased to 63 mg/ dl and creatinine to 1.42 mg/ dl. The purpose of our case is the rare association of hypogonadotropic hypogonadism and polyangiitis granulomatosis.

Dıscussıon

Prolactinomas can cause hypogonadotropic hypogonadism in both genders. Generally, by using dopamine antagonists, hyperprolactinoma can be treated and adenoma size can be reduced and gonadal function can be improved [7]. In some patients, hypogonadism is treated with hormone replacement, and the fluctuating course of energy, libido, sexual performance and mood of patients may require intramuscular replacement therapy [8]. In our case, the patient with hypogonadotropic hypogonadism developed due to adenoma had infertility. The patient, who had previously received hormone replacement and *in vitro* fertilization treatments for this reason, had a child.

Polyangiitis granulomatosis is an -organ and life- threatening multisystem disease, and cumulative disease burden and treatment may be important in this patient group [9]. Knowledge about polyangiitis, a systemic vasculitis, is limited. The course and characteristics of the disease may vary according to the patient [10]. It is a multisystemic autoimmune syndrome characterized by autoantibodies circulating against neutrophil cytoplasmic antigens, a vasculitis with mostly microscopic vascular involvement. Renal involvement is observed in approximately 70% of the patients. This involvement represents as pauci-immune necrotizing crescentic glomerulonephritis histology in kidney biopsy and rapidly progressive glomerulonephritis clinic [11]. Our case presented with microscopic hematuria and acute renal failure. He had nausea, vomiting, and muscle-joint pain in his clinic. In the tests performed, C-ANCA> 100, proteinuria and kidney biopsy were compatible with necrotizing gromerulonephritis. Thereupon, the patient was diagnosed with polyangiitis granulomatosis and treatment was initiated. Current treatment for ANCA (+) vasculitis is high-dose glucocorticoids and cyclophosphamide; this treatment approach is effective in 70 to 90% of patients. However, cyclophosphamide may cause side effects such as leukopenia, severe infections, cancer and gonadal failure[12]. In our case, glucocorticoid and cyclophosphamide treatment was used as the treatment protocol. However, our patient had received hormone replacement therapy due to infertility due to hypogonadotropic hypogonadism caused by a previous pituitary adenoma. This particular situation of the patient was also taken into consideration before the administration of cyclophosphamide.

As a result; Polyangiitis granulomatosis is a vasculitis that can have a mortal course, and rapid diagnosis and starting treatment significantly reduces the mortality rate. In our case, prolactinoma was additionally diagnosed and by carrying these two conditions, he showed a rare association.

References

1. Molitch ME. Nonfunctioning pituitary tumors. Handb Clin Neurol. 2014; 124:167184.
2. Raverot G, Jouanneau E, Trouillas J. Management of endocrine disease. EurEndocrinol. 2014; 170(4):121-132.
3. Cooper O, Melmed S. Subclinical hyperfunctioning pituitary adenomas. Best Pract ResClin Endocrinol Metab. 2012; 26(4):447-460.
4. Agustsson TT, Baldvinsdottir T, Jonasson JG, *et al*. The epidemiology of pituitary adenomas in Iceland, 1955-2012: a nationwide population-based study. Eur J Endocrinol. 2015;173(5):655-664.
5. Casanueva FF, Molitch ME, Schlechte JA, *et al*. Guidelines of the Pituitary Society for the diagnosis and management of prolactinomas. Clin Endocrinol (Oxf). 2006; 65(2):265-273.
6. Ahlström CG, Liedholm K, Truedsson E. Respirato-renal type of polyarteritis nodosa. Acta Med Scand. 1953; 144:323-332.
7. Gillam MP, Molitch ME, Lombardi G, Colao A. Advances in the treatment of prolactinomas. Endocrine Reviews. 2006 27 485-534.
8. Bhasin S, Cunningham GR, Hayes FJ, Matsumoto AM, Snyder PJ, Swerdloff RS, *et al*. Testosterone therapy in adult men with androgen deficiency syndromes: an endocrine society clinical practice guideline. Journal of Clinical Endocrinology and Metabolism. 2006; 91:1995-2010.

9. Seo P, Min YI, Holbrook JT, Hoffman GS, Merkel PA, Spiera R, *et al*. vd. Wegener granülomatozunun neden olduğu hasar ve tedavisi: Wegener Granülomatoz Etanercept Denemesi (WGET) Artrit Rheum'dan prospektif veriler. 2005; 52(7):2168-2178.
10. Hoffman GS, Drucker Y, Cotch MF, Locker GA, Easley K, Kwoh K. Wegener's granulomatosis: patient reported effects of disease on health, function, and income. Arthritis Rheum. 1998; 41:22:57-62.
11. Mukhtyar C, Guillevin L, Cid MC *et al*. EULAR recommendations for the management ofprimary small and medium vessel vasculitis. Ann Rheum Dis. 2009; 68:310-317.
12. Mukhtyar C, Flossmann O, Hellmich B *et al*. Outcomes from studies of antineutrophil cytoplasm antibody associated vasculitis: a systematic review by the European League Against Rheumatism systemic vasculitis task force. Ann Rheum Dis. 2008; 67:1004-1010.