

In the name of God

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**Non-Functional Pituitary Macroadenoma presented with Chronic Anemia.**

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**Abstract:**

Testosterone stimulates hematopoiesis. Men with non-functional pituitary macroadenoma and low testosterone level are likely to have anemia. We want to report non-functional Pituitary macro adenoma in a 41 year-old male with congenital dislocation of hip (CDH) and iris heterochromia which was referred to hematology clinic with chronic anemia.

**Keywords: Chronic Anemia, Pituitary, Macroadenoma**

**Introduction:**

Sellar masses usually present in three ways: neurologic symptoms, hormonal abnormalities and incidental finding in magnetic resonance imaging.<sup>(1)</sup> Pituitary adenoma is the most common type of sellar masses after third decade.<sup>(2)</sup> Impaired vision is the most common complain in patients with non-functional adenomas to take medical attention.<sup>(3)</sup> Tes-

tosterone is an important role in hematopoiesis.<sup>(4), (5), (6)</sup> There is a relationship between serum testosterone level and male hematopoiesis. Anemia was reported in men with pituitary adenoma and low testosterone level.<sup>(7)</sup>

**Case Report:**

A 41 year-old male was admitted with chronic anemia. He was well till 3 years

ago when he developed fatigue, weakness and pallor. He was visited by general physicians and received blood transfusion, Ferrous sulfate and folic acid but anemia and fatigue was persisted. He had history of congenital dislocation of hip (CDH) had led to shortened right lower limb. He had loss of libido and hair loss in the face, axillaries and pubic areas. Physical examination revealed pallor, iris heterochromia and periorbital edema and skin wrinkles around the eyes and a dry skin with thin hairs. Mental status, orientation and cranial nerves were intact. Laboratory findings are included normochromic normocytic anemia (Hb=10 gr/dl, MCV=85 fl), normal liver and renal function tests. White blood cells count and platelet counts, Iron, TIBC, Ferritin and ESR were in normal ranges. Serum protein electrophoresis was normal. ANA, Anti-Ds DNA, HBS Ag, HIV Ab, HCV Ab all were negative. Bone marrow aspiration showed hypocellular marrow but, bone marrow trephine biopsy was reported normal. Prolactin level was 393 mIU /ml (high, normal 87-392). Free T4 was 0.7 ng/dl (in lower limit of normal range, normal: 0.7-1.8), but TSH was normal (2.1 mIU/L, normal range: 0.17-4.05). Serum fasting basal cortisol level (8AM) was 0.06 micg/dl (low, normal range: 4.5-24). Serum testosterone was 0.1 ng/ml (low, normal range :2-9.8), FSH was 1.4m IU/ml (reference range 5th-95th percentile 1.3-11.8) and LH levels was reduced to 0.41 mIU/ml (reference range 5th-95th percentile 2.8-6.8) and the diagnosis of hypogonadotropic hypogonadism and secondary adrenal insufficiency were made. Perimetry was done and revealed visual

field defects and Pituitary MRI showed a space-occupying solid lesion (2×3×4 cm) in sella turcica and suprasellar cistern with dilatation and deformity of third ventricle. Diagnosis of pituitary macroadenoma was made and prednisolone was started and he was referred to a neurosurgeon for surgical operation.

#### **Discussion:**

In this 41 year-old male with non-functional pituitary macroadenoma, chronic anemia was the first manifestation and main cause to take medical attention, although he had loss of libido and hair loss in face, axillaries and pubic areas and visual field defects in perimetry. Also, we found a new association between iris heterochromia and CDH and non-functional Pituitary macroadenoma in this case which has not been reported in any syndromes yet. Sellar masses usually present in three ways: neurologic symptoms, hormonal abnormalities and incidental finding in magnetic resonance imaging.<sup>(1)</sup> Testosterone has an important role in hematopoiesis.<sup>(4), (5), (6)</sup> Before puberty there is not difference between hemoglobin level in males and females but, there is 1-2 gr/dl difference between hemoglobin level in adult men and women.<sup>(8,9)</sup> In a retrospective analysis on 216 patients with pituitary adenoma conducted by Elegalla DB, et al in 100 patients CBC and serum testosterone level were checked before treatment. 31 patients (46.3%) of 67 men with low testosterone level had anemia. In this study they found a direct relationship between serum testosterone level and male hematopoiesis and concluded that hematopoiesis decreases in men who have low tes-

tosterone level due to pituitary adenoma.<sup>(7)</sup> Ferrucci L, et al measured testosterone and hemoglobin levels in 905 persons with age 65 years or older without cancer, renal insufficiency and/or anti-androgenic therapy and concluded that older males and females with low testosterone level have higher risk of anemia.<sup>(9)</sup> We should consider pituitary adenoma in males with chronic normocytic anemia and symptoms of hypogonadism (loss of libido, decreased hair growing...) and low testosterone level.

**Conflict of interests** is not declared.

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