

UNILATERAL PROPTOSIS: A DIAGNOSTIC CLINICAL AND NEUROIMAGING CHALLENGE

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ABSTRACT

INTRODUCTION: The differential diagnosis of unilateral proptosis includes tumors, infections often related with immunological process, trauma, vascular diseases or axial myopia. **CASE REPORTS:** We present two patients with unilateral proptosis. A 34-year old caucasian man with a 3-months history of proptosis of the left eye with diplopia and normal visual acuity; initial CT scan examination showed highly suggestive finding for orbital apex tumor or glioma of the optic nerve, but a second CT scan with complementary projections was performed and a highly swollen inferior rectus muscle simulating an orbital apex tumor was visible. A diagnosis of unilateral thyroid ophthalmopathy was made. A 56-year old caucasian woman with unilateral exophthalmus and medical history of Graves' hyperthyroidism; previously Graves' ophthalmopathy was suggested. Fundoscopy showed myopic fundus. The CT scan revealed normal extraocular muscles without swollen. **CONCLUSION:** These two cases of unilateral proptosis are described because of their clinical and radiological differential diagnosis. We suggest that the accurate diagnosis of a unilateral proptosis remains a big challenge to the neuroophthalmologist, endocrinologist, immunologist, neurosurgeon and radiologist.

Key words: unilateral proptosis, orbital apex tumor, optic nerve glioma, axial myopia, thyroid ophthalmopathy

INTRODUCTION

The etiological diagnosis of unilateral proptosis is a challenge to neuroophthalmologist. Unilateral exophthalmus is frequently associated with thyroid diseases (3). The differential diagnosis of these patients includes tumors, infections often related with immunological process, trauma, vascular diseases or axial myopia (1,2,4,5,6,7). This heterogeneous group of conditions presenting with uniocular proptosis needs multidisciplinary diagnosis and management. CT scan findings are able to define the cause and the nature of proptosis (8,9).

CASE REPORT

We present two patients with unilateral proptosis. A 34-year old caucasian man with a 3-months history of proptosis of the left eye with diplopia and normal visual acuity. Initial CT scan examination showed highly suggestive finding for orbital apex tumor or glioma of the optic nerve. The patient was hospitalised in the Section of neuroophthalmology of Neurological department of Varna,

University Hospital. On neuroophthalmological examination the amount of left globe protrusion was measured using Hertel exophthalmometry: 10 mm greater on the left eye was noted. Ocular mobility in the same globe was affected and double vision was demonstrated. Because of normal visual acuity and normal fundoscopy a second CT scan with complementary projections were performed. In addition to diffuse swollen of all bilaterall extraocular muscles, a highly swollen inferior rectus muscle in the left eye simulating an orbital apex tumor was visible. Laboratory investigations, including thyroid hormones and thyroid auto-antibodies, documented abnormal values. A diagnosis of unilateral thyroid ophthalmopathy was made. The patient was put on steroid therapy. He responded to the therapy with 500 mg/daily methylprednisolon.

A 56-year old caucasian woman was hospitalised in our hospital with unilateral exophthalmus and history of Graves' hyperthyroidism. Six months early a diagnosis of Graves' ophthalmopathy was made. Neuroophthalmological examination showed hyperglobus of the right eye-exophthalmus 5mm greater on the right side. Her Snellen visual acuity was normal for the left eye (6/6) and 6/6 with -7,0 dsph for the right eye. Fundoscopy showed myopic fundus. There was no restriction of ocular movements, diplopia and pain. A CT scan revealed normal extraocular muscles without swollen. A diagnosis axial myopia was made.

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DISCUSSION

Unilateral proptosis, although frequently seen in connection with thyroid diseases, has a much larger differential diagnosis (3). Unilateral axial myopia may be a common cause of unilateral proptosis too. Clinically, the situation is worsened by the fact that many varieties of lesions produce similar signs and symptoms. CT scan is the procedure of choice in diagnosing unilateral exophthalmus and may yield valuable differential diagnostic information as a non invasive tool (6,7,8,9). Swollen orbital extraocular muscles may mimic an orbital apex tumor on computer tomography.

The presented cases of unilateral proptosis are described because of their clinical and radiological differential diagnosis, needing multidisciplinary management.

In **conclusion**, the accurate diagnosis of a unilateral proptosis remains a big challenge and includes the involvement of the neuroophthalmologist, endocrinologist, immunologist, neurosurgeon and radiologist.

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