Short communication

Central retinal vein occlusion as the first symptom of ovarian cancer

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ARTICLE INFO

Article history:
Received 14 March 2011
Accepted 10 June 2012

Keywords:
Central retinal vein occlusion
Ovarian tumor
Hypercoagulability
Protein S
Trousseau syndrome

ABSTRACT

Case report: A healthy 57-year-old woman presented with decreased vision in her right eye. Dilated fundus examination revealed central retinal vein occlusion (CRVO). The laboratory test results for hypercoagulability state showed an abnormal protein S. A few months later she developed an ovarian malignancy.

Discussion: This case illustrates an association between CRVO and ovarian tumor. Coagulation disorders in cancer may be a mechanism for CRVO.

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Oclusión de vena central de la retina como primera manifestación de cáncer de ovario

RESUMEN

Caso clínico: Paciente de 57 años, sin antecedentes de interés, acudió por disminución de la agudeza visual en el ojo derecho. En el estudio del fondo de ojo apareció una oclusión de vena central de la retina (OVCR). En las pruebas de laboratorio se detectó un estado de hipocoagulación con alteración en la proteína S. Pocos meses después desarrolló un tumor maligno de ovario.

Discusión: Con este caso clínico se ilustra la asociación entre OVCR y tumor de ovario. Las alteraciones en la coagulación asociadas al cáncer pueden ser un mecanismo para la OVCR.

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Introduction

Cancer produces a hypercoagulability condition which is not very well known at the clinical level.\(^1\) The term “Trousseau syndrome” refers to a rare variant of venous thrombosis characterized by a migratory and recurring nature which primarily involves superficial veins and is frequently located in atypical areas such as chest or arms.\(^2\) Retinal venous obstruction is a thrombotic process which could be associated to cancer. Even though this association is infrequent in the literature, it is even more unusual as a first expression of a tumor. This paper presents an interesting case as it emphasizes the association of 2 entities (thrombosis and cancer) which has rarely been reported in ophthalmology and therefore it is advisable to be informed about it. Even so, the protocols of the Vitreous and Retina Society of Spain (SERV) are nowadays the gold standard for classification, risk factors, supplementary tests and treatment of retinal venous occlusions.\(^3\)

Clinical case

The case is of a female, aged 57 years, with loss of vision in the right eye (RE) with evolution for several weeks. Relevant personal history includes hypercholesterolemia in treatment with simvastatin. Corrected visual acuity in the RE was of 0.7 and in the left eye (LE) of 1. Anterior biomicroscopy was normal, with intraocular pressure through applanation of 13 mmHg in both eyes. RE fundus exhibited the presence of diffused hemorrhages in the 4 retinal quadrants with dilatation and venous tortuosity, compatible with central retinal vein occlusion (CRVO) (Fig. 1). Fluorescein angiography evidenced findings compatible with CRVO of the combined type (edema + ischemia) with macular edema (Fig. 2). Systemic exploration was normal, as were systematic blood, hematic biochemistry, proteingram, liver and kidney tests. ANCA were negative, only ANA were positive at 1:800. Coagulation study was negative for antiphospholipid antibodies, protein C and Leiden factor V, with protein S deficit (62%). Homocysteine levels were normal. Six months after the first visit, the patient exhibited diffuse abdominal pain in both iliac fossa and hypogastrum together with general discomfort. The abdomen was distended. An abdominal puncture was made with results suggesting carcinomatosis. The analysis revealed a significant increase in transaminases and CA-125 (ovarian cancer tumor marker) of 177.6 (0–35 U/ml), with low protein S (58%). An exploratory laparotomy revealed peritoneal carcinomatosis, whereupon dual anexectomy (primitive tumor) was performed. The patient died within a few months after several chemotherapy cycles.

Discussion

CRVO is a vasculopathy that is frequently the consequence of systemic or local causes.\(^4\) For the latter, intraocular pressure increases must always be discarded. Systemic causes can be divided into 4 groups: (1) atherosclerosis, (2) central venous pressure increase, (3) hyper coagulation conditions (paraproteinemia, coagulation alteration and tumors) and (4) collagenopathies. In 1869, Trousseau\(^4\) described the syndrome which since bears his name, relating venous thrombosis refractory to treatment and occasionally with atypical location being exhibited by some patients with documented neoplastic disease. The degree of thromboembolic complications varies greatly according to the type of tumor. This degree is high in gastrointestinal tumors, particularly mucine-producing tumors. Other tumors with high incidence of thromboembolism are lung, chest and primary brain tumors.\(^1\) However, it must be taken into account that any patient who carries a tumor disease can exhibit at some point thromboembolism as an intercurrence.\(^1\) Coagulation alter-

Fig. 1 – Right eye: diffused hemorrhages throughout the retina with dilated and tortuous vessels.

Fig. 2 – (A and B) Right eye fluorescein angiography: circulation delay with increased capillary patency.
ations are common in these patients even though the etiology thereof is yet undefined. Over 15% of cancer patients develop hemorrhage and/or thrombosis. After metastases, hemorrhage is the second cause of death in these patients. Several factors such as acute phase reactants, protein metabolism alteration, necrosis and hemodynamic alterations can contribute to the activation of coagulation in cancer patients. However, mechanisms associated to the tumor are attributed to play a crucial role. Malign cells can interact with coagulation in many different manners, i.e. (1) producing and releasing pro-coagulation factors into the bloodstream, and (2) directly interacting with other cells such as platelets, endothelium and monocytes. CRVO has not been described in the reviewed literature, as a first expression of an ovarian tumor. In the patient of this case, a hypercoagulability cause was found which predisposed to ocular disease, such as protein S deficit, known as a pre-thrombotic condition. However, one case does not make a rule. A number of published studies and reviews such as the clinical practice guide of SERV (Retina Venous Occlusion Management) discuss the protocols to be followed by ophthalmologists for systemic studies in retinal venous occlusions. Even so, through this clinical case the authors aimed at emphasizing the association between tumors and thrombosis, which is not very well known in ophthalmology.

Conflict of interests

No conflict of interests has been declared by the authors.

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