Ocular toxoplasmosis; common and rare symptoms and signs

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Abstract

The common and rare symptoms and signs of congenital, childhood and adult ocular toxoplasmosis are discussed together with the differential diagnosis of the retinal lesions. A choroidal coloboma in connection with congenital toxoplasmosis is described. The occurrence of an optic pit with congenital macular toxoplasmosis, growth of subretinal new vessels as well as disappearance of arteriolar and venular sheathing is demonstrated.

Introduction

Toxoplasma gondii is endemic all over the world. In the Netherlands 60% of the population in the fourth decade has a positive antibody titre, usually after a subclinical infection [1]. Most chorioretinal scars due to toxoplasmosis have a typical appearance but there exist uncommon and even quite rare manifestations of toxoplasmosis. Since serology is inconclusive in cases of ocular toxoplasmosis, diagnosis is made mostly on clinical grounds. Therefore, it is important for ophthalmologists to be aware of the less common signs of this disorder. The purpose of this paper is to describe all known signs of ocular toxoplasmosis infection and to introduce two new ones hitherto not encountered in the literature.

Ocular manifestations of toxoplasma infection

It is assumed that ocular toxoplasmosis is usually acquired by intrauterine infection [2] and its manifestations are protean. An overview of these manifestations is given in Table 1 in which the signs present at or around birth are marked with an asterisk. The later in pregnancy the mother becomes infected the greater the chance for the offspring to be infected [3] but the smaller the risk of serious ocular malformations. Perinatal ocular abnormalities will be separated in this article from signs of toxoplasma infections manifesting themselves later in life.

Perinatal signs of ocular toxoplasmosis

Microphthalmia is a regular mentioned sign [4]. It is probably the result from infection around the fifth week of gestation. Concomitant signs may be enophthalmos and ptosis. Nystagmus is also frequently encountered and may be due to cerebral infection or to visual deprivation. Eso- or exotropia with resulting amblyopia are frequently present in congenital toxoplasmosis and once the Stilling-Türk-Duane syndrome has been described in a 15 year old patient with toxoplasmosis scars in the macula [5]. Myopia and astigmatism of more than 5
dioptres in connection with toxoplasmosis [4] could also be the result of visual deprivation. Iris hypoperaemias [4] and persistent tunica vasculosa lentis have been recorded in the newborn together with corneal haze as sequelae of uveokeratitis [6]. Iritis will be discussed later.

There is a well-known association between Fuchs' heterochromic cyclitis and ocular toxoplasmosis but the reason for this is unknown [7]. Iris translucency can be considered to be part of this heterochromia. Cataract is often seen and may be due to the intrauterine infection or secondary to the ensuing uveitis.

Encysted toxoplasma colonies in the optic nerve have been described [8] and this might one lead to the assumption that an optic coloboma or pit also could originate from intrauterine toxoplasmosis infections. Indeed recently a black man with a typical congenital macular toxoplasmosis scar and a small pit in the optic disc was seen (Fig. 1). He had on high magnification biomicroscopy an excavation or extreme thinning of the retina in the area of the macular scar. The internal limiting membrane, when examined with a 60 dioptre lens and a slit lamp, was seen to be stretched across the macular coloboma with a tiny round hole in it. Also a non-pigmented congenital choroidal coloboma has personally been observed in a 25 year old male with congenital toxoplasmosis (Fig. 2).

In the newborn, retinal folds and traction detachments have been described as well as an anastomosis between the upper and lower temporal retinal venules [4]. Granulomata in the posterior pole may look like a white mushroom in the active stage but also can have an elevated red-brown appearance. These granulomata can become so large that they may reach the crystalline lens [9] and sometimes they are accompanied by perivasculitis.