BJOG: an International Journal of Obstetrics and Gynaecology
February 2005, Vol. 112, pp. 241–242
DOI: 10.1111/j.1471-0528.2004.00302.x

SHORT COMMUNICATION

Reactivation of ocular toxoplasmosis during pregnancy

Justus G. Garweg,[a] Janine Scherrer,[a] Martine Wallon,[b] Laurent Kodjikian,[c] François Peyron[b]

We wished to assess whether ocular toxoplasmosis can be reactivated during pregnancy in immunocompetent females, and whether such reactivation is confined to the eye or whether the fetus is exposed to the risk of vertical transmission. For this purpose, we retrospectively examined 18 females with ocular toxoplasmosis during the course of 35 pregnancies. Of these 18 patients, seven developed recurrences during seven pregnancies. Due to the potential risk of functional damage to the mother and the possibility of vertical disease transmission to the fetus, we suggest following such cases carefully during pregnancy until the dimensions of the problem are more fully appreciated.

Active infection with *Toxoplasma gondii* during pregnancy caries a risk of maternofetal transmission and of severe neurological and ocular disease developing later in life. Immunocompetent mothers infected with *Toxoplasma* before pregnancy do not usually transmit the parasite to their offspring even when re-exposed to it during gestation. Silveira *et al.*[1] have recently reported a case of maternofetal transmission in a preconceptionally immunised woman. This finding could be accounted for by a down-regulation of the T-cell-mediated immune response that is observed during pregnancy. This contention is supported by the findings of Ramchani *et al.*,[2] who reported a case of acquired ocular toxoplasmosis occurring during pregnancy without transmission of the disease to the child. Hence, cellular immunity may represent an essential component of a host's protection against *T. gondii.* A disturbance in the immunological balance might interfere with parasite control and thereby have an impact on the clinical course and on the risk of disease transmission to the fetus.[3] Because ocular toxoplasmic lesions tend to reactivate, we wished to ascertain whether reactivation occurs under the physiological immunotolerance conditions pertaining in immunocompetent females during pregnancy. We also wished to ascertain whether this reactivation is confined to the eye or whether—after systemic spread of the parasite—the fetus could be exposed to the risk of vertical transmission. A clarification of the latter issue is important because the extent and spread of infectious activity cannot be easily distinguished on a clinical and serological basis.

Between 1997 and 2002, female patients who were diagnosed at our teaching hospitals in Lyon and Bern as harbouring active ocular toxoplasmosis and who registered positive for anti-*Toxoplasma* antibodies were contacted retrospectively. These patients were asked whether they had experienced the recurrence for which they had been treated by us during pregnancy of their ocular toxoplasmosis.

Our study group consisted of 18 mothers and 35 pregnancies. Among these 18 individuals, seven recurrences of ocular toxoplasmosis occurred during seven pregnancies. In five of the cases, the recurrences were diagnosed 8, 18, 32, 33 and 35 weeks of amenorrhoea. In the other two instances, they were detected two and four weeks after birth. None of the children issuing from these pregnancies manifested overt signs of congenital toxoplasmosis. Serological data excluding the disease were available for four of the seven children, and fundus examination had excluded the presence of scars in three infants. None of the seven women experienced a recurrence of the disease during a subsequent and consecutive pregnancy, the events described above having occurred during a first, second or third gravidity. Two of the mothers had undergone treatment with pyrimethamine and sulphonamides; the condition of the other five had stabilised without therapy after follow up periods of 3–160 months.

Pregnancy exposes women with retinal scars due to ocular toxoplasmosis to recurrences at a rate that is still unknown, but which is conceivably higher than that in non-pregnant individuals. Unfortunately, we had no recourse to an age-matched group of control female patients, which would have permitted us to estimate the incidence of ocular toxoplasmosis recurrence in pregnant and non-pregnant

[a]*Department of Ophthalmology, University of Bern, Inselspital, Switzerland*
[b]*Service de Parasitologie, Hôpital de la Croix-Rousse, Lyon cedex, France*
[c]*Service de Ophtalmologie, Hôpital de la Croix-Rousse, Lyon cedex, France*

Correspondence: Dr J. G. Garweg, Clinic for Vitreoretinal Diseases, Section Ocular Inflammation and Immunity, Department of Ophthalmology, University of Bern, Inselspital, Switzerland.

women. And no such data are available in the literature. Indeed, only one study dealing with this topic has been published.[4] It reports on four pregnancy-associated ocular toxoplasmosis recurrences within a group of 10 women and 18 pregnancies. The recurrences were diagnosed three, five, seven and eight months after amenorrhoea. In two of these cases, the pregnancy was terminated. In none of the four offsprings was a vertical transmission of the infection established.[4] Similarly in our series of patients, vertical transmission of the disease was not revealed in any instance, although the method used to ascertain this in neonates is not sufficiently trustworthy as to permit us to rule out the possibility of its existence.

That not all of the women in our series were treated reflects the absence of a validated therapeutic effect. We recommend that pregnant women at risk are informed about the possibility of reactivation, and that all instances of pregnancy-associated recurrence are reported.[3] Pregnant women at risk could be monitored every three months by screening fundoscopy, and their offspring then followed systematically to exclude the presence of congenital infection. It is noteworthy that in five of our seven cases, recurrence occurred late in pregnancy. Although ocular toxoplasmosis recurrences during pregnancy and vertical transmission are likely to be rare events, we cannot rest on this presumption. Our knowledge on the subject must be improved, and until we are further enlightened, any conclusions respecting the dimensions of the problem must need to be speculative.

References

1. Silveira C, Ferreira R, Muccioli C, Nussenblatt R, Belfort Jr R. Toxoplasmosis transmitted to a newborn from the mother infected 20 years earlier. *Am J Ophthalmol* 2003;**136**:370–371.
2. Ramchani M, Weaver JB, Joynson DHM, Murray PI. Acquired ocular toxoplasmosis in pregnancy. *Br J Ophthalmol* 2002;**86**:938–939.
3. Kodjikian L, Hoigne I, Adam O, et al. Vertical transmission of toxoplasmosis from a chronically infected immunocompetent woman. *J Pediatr Infect Dis* 2004;**23**:272–274.
4. Oniki S. Prognosis of pregnancy in patients with toxoplasmic retinochoroiditis. *Jpn J Ophthalmol* 1983;**27**:166–174.

Accepted 10 May 2004