Case Report

Sudden Death due to Cardiac Toxoplasmosis

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Abstract
The recognition of cardiac toxoplasmosis has increased in patients with acquired immunodeficiency syndrome. The functional consequences of toxoplasmosis of heart vary considerably depending on the intensity of inflammatory reaction, the extent of involvement of myocardial muscle fibers by necrosis and intramyocytic presence of tachyzoites of *Toxoplasma gondii*. This report describes a case of toxoplasma myocarditis that lead to fatal cardiac arrest. To the best of our knowledge, this is the first reported case of cardiac toxoplasmosis in the Indian literature, which has manifested as sudden death. ©

INTRODUCTION

*Toxoplasma gondii* has a worldwide distribution and its seroprevalence in population of India is reported between 3.3 to 18.9%.1,2 Central nervous system toxoplasmosis is documented in 13% of patients with AIDS from Mumbai,3 and only two reports of cardiac toxoplasmosis are described in Indian literature.4,5 In our country, hunger strikes occur for religious and political reasons or against some alleged injustice. Hunger strikes against alleged injustice usually get sympathy from public, relatives and friends due to which they pay visits to persons who are on strike. The case described herein was also visiting his relative who was on hunger strike and within few hours of his visit, he developed cardiac arrest and died suddenly. In this report, we describe a rare case of toxoplasmic myocarditis that lead to fatal cardiac arrest.

CASE REPORT

A 35 year old male died suddenly due to cardiac arrest while paying visit to his relative who was on hunger strike hence a medico legal post mortem was carried out to know the cause of death. The past history suggested that the patient was chronically ill and was taking treatment for tuberculosis, and he was not a known case of HIV/AIDS. Autopsy findings showed an emaciated body with reduction in muscle mass and loss of fat depot. The right and left lung showed cavities measuring 5 x 4 x 2 cms and 3 x 2 x 2 cms respectively which were lined by calcified fibrous wall and the inner surface of the cavity showed shaggy, necrotic material. There was evidence of active tuberculosis in other parts of the lungs. Tissue bits of heart were received which comprised of the left ventricle, right ventricle and interventricular septum. Significant pathology was not identified on gross examination of heart. The brain did not reveal any necrotic lesions and the examination of all other organs showed normal features.

The microscopic examination of the heart showed necrosis of cardiac muscle fibers and dense inflammatory infiltration by neutrophils, macrophages and lymphocytes. The inflammatory process was identified in the left and right ventricle, interventricular septum and extended up to the endocardial surface of left and right ventricle (Fig. 1). Pseudocysts of *Toxoplasma gondii* were identified within the myocardial muscle fibers and endothelial cells of intramyocardial vessels. (Fig. 2 : A, B, C, D). The microscopy of cavitatory lesions in lungs showed fungal colonies of aspergillosis and the alveolar lining cells revealed cytomegalovirus infection. The pulmonary parenchyma in addition showed foci of active tuberculosis. The histology of brain revealed true cysts of toxoplasma gondii however there was no evidence of inflammatory reaction or necrosis. The histology of spleen showed lymphoid depletion in the white pulp and red pulp. Thus the present case showed toxoplasmic myocarditis, pulmonary tuberculosis, cytomegalovirus pneumonitis, aspergillosis of lung, latent toxoplasmosis of brain and lymphocytic depletion in spleen, these observations are indicative of acquired immunodeficiency syndrome.

DISCUSSION

Sudden death in young is known with both cardiac and non-cardiac etiology. However infective cardiac causes are rare. Often accidental autopsies are eye openers for learning new facets about sudden death as
Cardiac toxoplasmosis is a rare disease and literature search described 41 cases of toxoplasmosis of heart in several necropsy series. The low reporting of toxoplasmic myocarditis may be because these lesions remain localized in the myocardium of the left ventricle, hence extensive tissue sampling of heart is essential to rule out toxoplasmosis. Cardiac toxoplasmosis generally occurs during the course of multivisceral dissemination, however there are 12 reported cases of toxoplasmic myocarditis in which sudden death is described. The present case showed toxoplasmosis of heart and brain, it is likely that reactivation of toxoplasmosis has occurred. Reactivation of toxoplasmosis is the most common type of toxoplasmosis found in immunocompromised patients. The findings of this study show that the cardiac toxoplasmosis, is clinically significant and autopsy is crucial for the documentation and diagnosis of this disease. As AIDS continuous to be a prominent medical problem in our country, more cases of cardiac toxoplasmosis will be seen in future, hence further laboratory backup including cardiac biopsies are needed for diagnosing these diseases so that potentially treatable fatal complications can be avoided.

**REFERENCES**

1. Thokar MA, Malla N, Wattal C. Serological study of patients clinically suspected to have toxoplasmosis in Kashmir. ICMR 1988; 88:29-34.


