Schistosomiasis mansoni: associated hepatosplenic, cardiovascular, and chronic miliary forms

Esquistossomose mansoni: formas hepatoesplênica, cardiovascular e miliar crônica associadas

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ABSTRACT

Introduction: The authors describe the main histopathological findings in a serious case of schistosomiasis. Methods: the study was based on the histological analysis of fragments from organs of a 26-year-old patient. Results: the necropsy revealed the association of forms: hepatosplenic, cardiovascular, and chronic miliary with eggs found in the glomerulus afferent arteriole and the rare association of locations in the myocardium, kidney, and pancreas.

Key words: Schistosomiasis; Schistosomiasis mansoni, Schistosoma mansoni; Liver Diseases; Heart Diseases.

RESUMO

Introdução: os autores descrevem os principais achados anatomopatológicos em um caso grave de esquistossomose. Métodos: o estudo baseou-se na análise histológica de fragmentos de órgãos de paciente de 26 anos de idade. Resultados: a necropsia revelou associação de formas: hepatoesplênica, cardiovascular e miliar crônica, com encontro de ovos na arteríola aferente do glomérulo e a rara associação de localizações no miocárdio, rim e pâncreas.

Palavras-chave: Esquistossomose; Esquistossomose mansoni; Schistosoma mansoni; Hepatopatias; Cardiopatias.

INTRODUCTION

Despite the absence of clinical data, which prevents an anatomoclinical correlation analysis, this case is worthy of record due to its singularity observed at necropsy.

CASE REPORT

This is patient with hepatosplenic schistosomiasis mansoni, of Symmers-Bogliolo, associated with the cardiopulmonary form, accompanied by the dissemination of eggs in all examined organs (miliary chronic dissemination) particularly intense in the lungs, pancreas, and large intestine. The existence of a couple of worms was observed in the lumen of the vein in the peripancreatic fat tissue, indicating likely oviposition in the pancreas of one egg in the lumen of an afferent arteriole of the glomerulus and myocardium granulomas.
The major alterations were:

- **Liver:** chronic granulomatous schistosomiasis inflammation (granuloma in the exudative phase) and moderate fibrosis in portobiliary spaces, without invading or subverting the lobular architecture (Figure 1). Lesion caused by a dead worm, showing traces of the worm surrounded by extensive necrosis and increased inflammatory exudate.

- **Pancreas:** a pair of adult worms in the lumen of a vein in the peripancreatic fat, without inflammatory reaction around the vessel. Several eggs wrapped in chronic inflammatory reaction without forming typical granulomas in the parenchyma. The inflammatory exudate infiltrated and destroyed part of the lobes and groups of cells, with a partial disorganization of lobular architecture. Interstitial and moderate intralobular fibrosis; perineuritis and discrete ductile hyperplasia (Figure 4);

- **Kidney:** eggshell in the lumen of an afferent arteriole in a glomerulus (Figure 5), thickening of the basal membrane and proliferation of mesangial

Figure 1 - Fibrosis and productive granulomas in the porta space.

Figure 2 - Lung: numerous productive granulomas and in healing through fibrosis.

Figure 3 - Granuloma in the productive phase in the myocardium.

Figure 4 - Pancreas: granulomas, anti-inflammatory infiltrate, fibrosis and destruction of part of the parenchyma.
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26-year-old man necropsied at the Santa Casa de Misericórdia de Belo Horizonte, Minas Gerais.

The unusual of these alterations consists in the anatomopathological alterations and unusual location of eggs and worms, some of them never reported.

Ectopic lesions are considered those caused by worms or eggs outside the portomesenteric system (hepato-intestinal system), habitat of adult *Schistosoma mansoni* in the human body.1-12 Faust7, however, excluded pulmonary arterioles lesions from ectopic sites. The frequency of pulmonary locations varies between the different regions of origin of patients.5,6,9,10-20 It is assumed that 20% of schistosomal patients have pulmonary lesions, however, only a small percentage of these develops cor pulmonale.5,6,9-20

The fundamental anatomic substrate responsible for hemodynamic alterations in the hypertension pulmonary circulation and cor pulmonale forms are vascular alterations in the level of small arterioles and arteries. Thus occurs in a small number of cases and is followed, almost invariably, by the hepatosplenic form as the result of embolization of eggs and worms in the pulmonary artery resulting from the portosystemic circulation.6,20 It is assumed that eggs coming from the portal vein arrive at the lungs through the collaterals that form between the porta system and systemic circulation in order to compensate for the increased portal pressure.5,18 This has been confirmed experimentally.5,14 It is understandable, therefore, that serious pulmonary lesions may occur, as in fact occur, during the development of the hepatosplenic form through the establishment of communication between the portal and systemic circulation (hepatoscaping routes) that promote direct and continuous drainage of eggs to the right atrium and, consequent-

**Figure 5** - *S. mansoni* egg in the lumen of an afferent arteriola (arrow).

**Figure 6** - Kidney: granuloma in the interstice.

**Figure 7** - Large intestine: numerous calcified eggs in the submucosa.

A case of severe schistosomiasis mansoni with association of forms is presented - hepatosplenic, in the lungs, heart, intestines, kidney, and pancreas – in

**large intestine:** large number of eggs (about 30 per microscopic field) in the submucosa and few in the mucosa lamina propria, largely calcified, without inducing the characteristic granulomatous reaction. Nonspecific inflammatory reaction, diffuse, with a predominance of eosinophils and mononuclear cells, more intense at the level of the mucosa and denudation of the coating epithelium (Figure 7).

**DISCUSSION**

A case of severe schistosomiasis mansoni with association of forms is presented - hepatosplenic, in the lungs, heart, intestines, kidney, and pancreas – in
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The intestinal location is part of the schistosomiasis infection. Large number of calcified eggs is not uncommon, especially in polyps in the large intestine. Dead worm lesions appear, observed especially in the lungs, and especially in cases treated with praziquantel or oxamniquine.

CONCLUSION

This report presents several associations of extreme rarity observed in a young adult male patient in which hepatosplenic, pulmonary, cardiac, intestinal, renal, and pancreatic alterations stand out. We alert to constant attention on schistosomiasis in endemic regions and its various possibilities of differential diagnosis, potential severity, risk of early death, and limitation in the quality of life.

REFERENCES

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