Case Report: Ectopic *Schistosoma mansoni* Eggs Inside a Lipoma

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Abstract. Ectopic schistosomiasis is uncommon and tends to occur when the parasite's eggs or adult forms are located far from their normal site. This report presents the first described case of ectopic *Schistosoma mansoni* eggs inside a subcutaneous lipoma far from the tissues of this worm's life cycle and with no connection to either portal veins or any other vascular system. These eggs were found inside giant cells surrounded by inflammatory cells. In conclusion, in humans, ectopic *S. mansoni* eggs can be found far from the tissues of the described life cycle of this worm, with no connection to portal veins or other blood vessels used for their migration.

INTRODUCTION

Schistosomiasis is one of the most common diseases caused by helminths.¹ Three main species are responsible for human infestation: *Schistosoma haematobium*, *Schistosoma japonicum*, and *Schistosoma mansoni*.¹ Ectopic schistosomiasis is uncommon and tends to occur when the parasite's eggs or adult forms are located far from their normal site.^{2–4} Ectopic schistosomiasis has been reported in the cecal appendix, gallbladder, pancreas, peritoneum, urogenital system, central nervous system, myocardium, skin, esophagus, stomach, thyroid, and adrenal glands.^{2–12}

Ectopic lesions, to which eggs or worms may migrate and cause granulomas on the skin and extragenital or rectal *mucosae* are rare in every form of schistosomiasis, even in regions where parasitosis is highly endemic.^{2,3,5,6} Identification of *Schistosoma* eggs at the anatomopathological examination is mandatory for diagnosis.^{1,2} Most commonly, the eggs are located in clusters, associated with a diffuse inflammatory infiltrate.^{2,5,6,10}

This report presents the first described case of ectopic *S. mansoni* eggs inside a subcutaneous lipoma far from the tissues of this worm's life cycle and with no connection to either portal veins or other blood vessels.

CASE REPORT

A 32-year-old man from an area that was nonendemic for schistosomiasis was admitted to our clinic complaining of a tumor in his left gluteofemoral region. This tumor had appeared 2 years prior, with no itching, pain, or skin rash. No other symptoms were reported.

Examination showed a 5-cm lipomatous tumor located in the subcutaneous tissue at the transition of the left gluteal and thigh regions. No other tumor or abnormal physical finding was identified.

Under local anesthesia, a light yellow tumor located in the subcutaneous tissue without a capsule was easily removed. The macroscopic aspect presented no special characteristics or abnormalities, and was thus diagnosed as a typical lipoma.

Histopathological examination showed multiple granulomas surrounded by normal fat tissue, which are characteristic of a lipoma. Inside each granuloma, *S. mansoni* eggs, with

lateral *spiculae* and some of them containing miracidium, surrounded by inflammatory cells, were identified (Figure 1).

On the basis of the diagnosis of schistosomiasis *mansoni*, the patient was submitted to eight stool tests and a rectal biopsy, which failed to show *Schistosoma* eggs or other parasites. All other hematological, biochemical, urinary, and radiological examinations were normal.

Even without the evidence of systemic schistosomiasis, the patient was treated with a single dose of 1,250 mg oral

FIGURE 1. Subcutaneous lipoma section showing granulomas containing *Schistosoma mansoni* eggs. (A) *Schistosoma* egg (white arrow heads) with lateral *spiculae* (black arrow) inside a granuloma containing plasma cells and eosinophils surrounded by adipocytes, characteristics of a lipoma (Hematoxylin and eosin stain at $\times 400$). (B) *Schistosoma* egg (black arrow) containing a miracidium inside a granuloma (white arrow), including lymphocytes and plasma cells surrounded by adipocytes (Hematoxylin and eosin stain at $\times 400$).

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oxamniquine. During the 6-month follow-up, no abnormality was identified, and the patient was included in a regular annual outpatient control.

DISCUSSION

The exact mechanism of the ectopic *Schistosoma* worm or egg migration is still unknown.¹ Some authors suggest that the parasite may migrate from the pelvic veins through the vertebral plexus and arrive at the spinal vessels, which would explain its characteristic zosteriform distribution.^{1,2,5,7} Others have proposed the embolization of *S. mansoni* eggs through arteriovenous shunts opened by portal hypertension due to the hepatosplenic form of schistosomiasis.^{3,6,8,10–12} Clinically, the lesions appear as isolated or coalescent papules, with a herpetiform arrangement or zosteriform distribution.^{1,4,5,8,10}

In this case, no form of the *S. mansoni* worm was found, and the patient presents no symptoms suggesting a disease provoked by this parasite. Though asymptomatic, this patient had been infected by the *Schistosoma*, but the worm most probably reached the rectum through the portal venous system. Considering that lipoma is not a vascularized tumor, the worms, or the parasite's eggs, most likely passed through the rectal wall and perirectal tissue, including the muscles, and penetrated nearly 10 cm inside the subcutaneous tissue. Because of the normal characteristics of this lipoma, with no fibrous tissue, evidence ran against the supposition that these eggs were responsible for the lipomagenesis. Nevertheless, it is important to emphasize that the etiopathogenesis of the lipoma is still not known.

Previously, in an experimental study with rabbits, we have incidentally found unexpected ectopic *S. mansoni* eggs inside the humeral bone tissue.¹³ This finding, coupled with those from this study, confirms that the mechanism of the *Schistosoma* migration is still not entirely understood and that the theories described in the literature do not respond to all questions related to the life cycle of this helminth.

CONCLUSION

In humans, ectopic *S. mansoni* eggs may be found far from the tissues of the described life cycle of this worm and with no connection to portal veins or other blood vessels used for the migration of this helminth.

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