DIAGNOSIS OF TENIASIS DURING A CONVENCIONAL GASTROPLASTY: CASE REPORT

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ABSTRACT

Teniasis is one of the most prevalent parasitic diseases in Latin America, with man as the definitive host. The parasite is mainly lodged in the small intestine and is capable of causing variable symptoms or leading to no clinical change. The report presents the case of a 26 year old patient with morbid obesity, who underwent gastroplasty with Roux-en-Y gastric bypass. During the surgical procedure, an incision was made in the small intestine and a foreign body was identified inside the intestinal lumen. After the removal of the foreign body, it has been identified as an adult worm of a *Taenia spp* and in a later parasitological study, the *Taenia* classified as a *T. saginata*. If the worm had not been identified, the diagnosis would be delayed, causing complications such as perforations and obstructions in the intestine and or anastomotic leakage.

KEYWORDS: Taeniasis, diagnosis of taniasis, gastroplasty.

1. INTRODUCTION

The gastrointestinal tract is commonly the primary site of parasites during their life cycle. Parasitic diseases are more endemic in underdeveloped or developing countries due to poor sanitation, especially in inner cities, and the low rate of population education in health¹. The cestode *Taenia solium* and *Taenia saginata* are responsible for human teniasis, one of the most common parasitoses in Latin America, reaching a prevalence of up to 5% of the total population ². The definitive host of both tapeworms is the man, who acquires it by eating pork or undercooked beef infected with cysticerci³. These, upon reaching the small intestine, are lodged therein by binding strongly to the mucosa⁴.

The clinical symptomatology of teniase is variable, and depends on the age and degree of organic hygiene of the host. There are symptoms such as irritability, insomnia, anorexia or excessive appetite, weight loss, abdominal pain, digestive disorders, nausea, vomiting, diarrhea alternating with constipation, nervous disorders, muscle weakness and pain. However, many of the patients may present asymptomatic⁵.

In the following report, there is a clear depiction of parasitic contamination with nonspecific symptoms that could have been diagnosed later.

2. CASE REPORT

This is a female patient, 26 years old, living in the interior region. Height of 1.55 m, weight of 138.5 kg, BMI = 57.23 kg / m², with grade III obesity, chronic anovulation, insulin resistance and signs of hyperandrogenism.



Figure 1. Worm of *Taenia saginata* found in the jejunal loop at the time of Gastroplasty.

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After an attempt to lose weight by clinical treatment for two years, surgical treatment was chosen, the procedure of choice being Roux-en-Y gastric bypass gastroplasty. During surgical procedure, in the preparation of the Roux Y, when a bowel incision was made for the first band ligation, a worm of *Taenia* spp. was found in the jejunal loop.

The worm was pinched and removed at a size of about 20 centimeters in length, without the shield being viewed. The material was used for parasitological study, with the identification of the species, with the identification of the species, with the identification of the species, is not present. Although asymptomatic, with a proven diagnosis, treatment was instituted with Albendazole at a therapeutic dose - 400 mg once daily dose for 3 consecutive days. The therapeutic regimen was repeated after 21 days and a parasitological examination of the feces was performed without any signs of parasitosis. Patient in outpatient follow-up evolving without complaints.

3. DISCUSSION

Morbid obesity is associated with the development of various metabolic disorders and associated diseases, such as type 2 diabetes mellitus, hypertension, dyslipidemia. Given this fact, bariatric surgery emerged as the most effective treatment for patients with surgical indication⁶. The main guidelines for carrying out the procedure are: patients with a BMI greater than 35 kg/ m² with serious comorbidity related to obesity and those with a BMI greater than 40 kg / m² with or without comorbidity⁷.

Although laboratory propaedeutics is extensive, parasitological examination of feces is not routinely required, and no parasite investigation is performed. In this way, the surgeon may be surprised with the presence of worms during surgical procedures.

It is estimated that more than 70 million people are infected with *T. saginata* and that up to 2.5 million may be infected by *T. solium* in world⁸. The adult worm, already widely described in literature, is large, flat, shape of ribbon and white color, which caused it to be readily recognized when viewed in the patient's intestinal lumen during a surgical procedure.

Taenia solium and *T. saginata* are widely distributed parasites, and are most commonly found in areas where there is a habit of ingesting raw or undercooked beef and/ or pork. When tapeworm eggs are ingested by the swine and cattle, the embryos release from the egg in the small intestine, penetrate the intestinal wall and diffuse into the body through the bloodstream. Cysticercus formation occurs in the skeletal and cardiac muscles. The man acquires the tapeworm when eating meat of these animals contaminated raw or undercooked containing cysticercus. The cysticerci are released during the digestion of the meat and the scolex develops under the action of bile, being fixed in the human small intestine³. The laboratory diagnosis of teniasis can be performed by parasitological examination of feces (EPF) with proglottes and eggs of the parasite ⁹.

The detection of these parasites in hospital procedures is rare, but more frequent reports of the presence of *T. saginata* are performed as endoscopies and colonoscopies¹⁰ when compared to laparotomies, and no reports on the visualization of *T. saginata* were found in asymptomatic patients.

Migration of the progeny from Tinea to the intestinal lumen can lead to rare severe acute surgical conditions such as acute appendicitis, Meckel diverticulitis, pancreatitis, cholecystitis, hepatic abscess, bowel obstruction and perforation, and anastomotic fistula¹¹.

The main therapeutic options for treatment of teniases are praziquantel, albendazole, mebendazole and niclosamide¹². Albendazole has the advantage of being given in a single dose for only three days and is independent of the patient's weight. Its mechanism of action is to prevent the absorption of glucose by the parasites, causing their destruction¹³. Parasitological cure has been reported in the range of 70% to 80%⁸.

4. CONCLUSION

Visualization of adult worm *T. saginata* with the naked eye during gastroplasty stresses that the diagnosis of teniasis can be made unexpectedly, without using the usual laboratory tests. These cases occur mainly when the disease is asymptomatic, which can delay the diagnosis, and thus cause complications. In order for this and its respective treatment to be performed adequately, it is advisable to evaluate the implementation of parasitological examination of the feces in the routine of preoperative examinations for gastroplasty, even in those asymptomatic patients.

REFERENCES

- [01] Park MS, et al. Intestinal parasitic infection. Abdom Imaging 2008; 33:166–171.
- [02] Hall RL, *et al.* Survey of Obstetrician-Gynecologists in the United States about Taeniasis and Cysticercosis. Am. J. Trop. Med. Hyg. 2017; 96: 233–242.
- [03] Pfuetzenreiter MR, Ávila-Pires FD. Epidemiology of teniasis/Cysticercosis by Taenia solium and Taenia saginata. Ciência Rural 2000; 30.
- [04] Venkat B, Aggarwal N, Makhaik S, Sood R. A comprehensive review of imaging findings in human Cysticercosis. Jpn J Radiol 2016; 34:241–257.
- [05] Ribeiro NAS, Telles EO, Balian SC. The Complex Human Taeniasis-Cysticercosis. Journal of Continuing Education in Animal Science of CRMV-SP 2012; 10: 20–25.
- [06] Santos TD, Burgos MGPA, Lemos MCC, Cabral PC. Clinical and nutritional aspects in obese women during the first year after roux-en-y gastric bypass. Arq Bras Cir Dig 2015; 28(1): 56-60.

- [07] Yen YC1, Huang CK, Tai CM. Psychiatric aspects of bariatric surgery. Curr Opin Psychiatry 2014; 27(5): 374– 379.
- [08] Gomes AP, Ester R, Felippe KC, Santos SS, Carneiro MC. Teniasis and cysticercosis: review and general aspects. Pediatr. mod 2008; 44(4):151-156.
- [09] Gomes AP, Medeiros LB, Huggins DW. Teníase. In: Siqueira-Batista R, Gomes AP, Igreja RP, Huggins DW. Medicina Tropical. Abordagem Atual das Doenças Infecciosas e Parasitárias. Rio de Janeiro, Editora Cultura Médica, 2001.
- [10] Mercky P, Gonzalez JM, Ah-Soune P. An unusual gastric encounter: a beef tapeworm diagnosed by gastroscopy. Endoscopy 2014; 46: 36 -37.
- [11] Sozutek A, Colak T, Dag A, Turkmenoglu O. Colonic anastomosis leakage related to *Taenia saginata* infestation 2011; 66(2):363-364.
- [12] Arwin SM, Maldonado YA. Protozooan and helminth infections. In: Remington JS, Klein JO. Infectious Diseases of the Fetus & Newborn Infant. 4a edição. Philadelphia, W.B. Saunders Company, 1995.
- [13] Botero D, Tanowtiz HB, Weiss LM, Wittner M. Taeniasis and cysticercosis. Infect Dis Clin North America 1993; 7:683-697.