

SHORT COMMUNICATIONS

DETECTION OF *GIARDIA INTESTINALIS* IN DUODENAL ASPIRATE AND IN THE STOOL

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Abstract. Compared was the detection of *Giardia intestinalis* in duodenal contents and in the stool. During endoscopic examination duodenal contents were recovered by means of a tube attached to the mucosa and by aspiration from the region of pars verticalis. In 102 persons, duodenal and stool examinations revealed four and five cases of *Giardia* infection, respectively. The results showed that both diagnostic methods are equivalent and demonstrated that parasitologic examinations of patients suffering from dyspeptic disorders are very useful.

Giardiasis, a disease induced by a protozoan parasite *Giardia intestinalis*, can objectively be diagnosed only by a direct finding of a parasite in biological material. The following detection methods are used:

- stool examination for the presence of *Giardia* cysts
- examination of duodenal contents obtained during endoscopic examination, or examination of duodenal fluid recovered by duodenal tubal aspiration, examination by means of the "Enterotest", a gelatine capsule etc., followed by examination of fresh or Giemsa stained smears
- examination of biopsies of duodenal mucosa

Each of the above diagnostic methods has its advocates (Gliński 1965, Wolfe 1978, Wurbs and Classen 1979, Jokipii and Jokipii 1980, Judd et al. 1980, Villalonga et al. 1980). Differences in opinion on the value of the above diagnostic methods gave us an impetus to compare the detection of *Giardia* cysts in the stool and in duodenal contents recovered by duodenal tubal aspiration during fibroscopic examination.

MATERIAL AND METHODS

In the Department for Endoscopy, Medical Faculty Hospital, Košice, the following diagnoses were made in examining 102 patients suffering from gastroduodenal diseases:

1. duodenal ulcer	31
2. peptic ulcer in stomach	16
3. operated stomach (various types of resection)	4
4. pains in epigastrium, chronic gastritis	49
5. gastric carcinoma	2

Examinations were performed with the aid of an esophagogastroboloscope GIF-D (firm Olympus). In duodenoscopy, duodenal contents were recovered by duodenal tubal aspiration from the region of pars verticalis (D 2). The orifice of a tube inserted via a fibroscope was attached to duodenal mucosa. Aspirate from patients recovering from stomach resection was obtained from stump of the stomach or from the duodenum (following resection Bilroth II). Subsequently, samples of stool were taken from each patient and examined for the presence of *Giardia* cysts after the MIFC method.

RESULTS

Results of examinations are presented in Table 1. According to group diagnoses, one, one and three patients were positive for giardiasis in groups 1, 2 and 4, respectively.

Despite the fact that immediate microscopic examinations were performed no manifest motility of *Giardia* was observed. The parasites were very often attached to the cells of mucosa or to erythrocytes, and first they could be revealed according to the waving movements of ventral flagella which continued to be in motion for several hours even at complete stillness of the parasite's body.

Table 1. *Giardia* cysts in duodenal aspirates of endoscopically examined patients.

	Cysts in duodenal aspirate and in the stool of endoscopically examined patients
No. of persons examined	102
No. positive for giardiasis	5
% positive	4.8
<i>Giardia</i> in duodenal aspirate	4
<i>Giardia</i> in the stool	5

DISCUSSION

It is very difficult to take an unambiguous view to the selection of biological material for laboratory diagnosis of *Giardia* cysts. Some clinical conditions affecting the biology of a parasite make the detection of *Giardia* cysts possible only by examining duodenal contents (Villalonga et al. 1980). Examination of duodenal contents is the method to be applied in acute stage of the infection — in the first three weeks after infection when clinical manifestations are most pronounced and the parasites are still absent in the stool (Jokipii and Jokipii 1977). It is very difficult to explain the findings of Wurbs and Classen (1979) who in three times as many stool examinations detected only 1/4 of infections diagnosed from duodenal contents. Danniger and Lopez (1975) reported that a negative phase lasting 1–2 weeks may occur when low and moderate numbers of cysts are discharged with the stool. During that phase the cysts are lacking in the stool but can appear later again. Coinciding with these findings is the report by Wolfe (1979) who recorded 76 % of positive cases in the first, 90 % in the second and up to 97 % in the third stool sample examination. The author stated that stools can be positive even when duodenal aspirates and biopsies are negative.

Our findings correspond to those reported by Jokipii and Jokipii (1980) who detected 28 infected persons in three stool examinations, while only 14 patients were detected by examination of duodenal fluid. The single stool examination detected 77 % and the duodenal examination alone 64 % of patients. The aspirate was negative if only few cysts were found in the stool. That corresponds with the results of Owen et al. (1979) who during the research on mice found a close correlation between the density of trophozoites on mucosa and the number of the expelled cysts. These papers suggest that great differences in detecting *Giardia* parasites in stool examination and

examination of duodenal contents really do not exist. As duodenal tubal aspiration and intestinal biopsy are rather difficult and time-consuming procedures three stool examinations performed in three weeks are preferred.

ОБНАРУЖЕНИЕ *GIARDIA INTESTINALIS* В ДУОДЕНАЛЬНОМ АСПИРАТЕ И В ФЕКАЛИЯХ БОЛЬНЫХ

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Резюме. Авторы сравнивали обнаружение *Giardia intestinalis* в содержании двенадцатиперстной кишки и в фекалиях больных. Содержание дуоденума получили при эндоскопическом исследовании с помощью зонда, соприкасающегося с мукозой с последующей аспирацией в области pars verticalis. У 102 лиц исследования дуоденума обнаружили 4 и исследования фекалий 5 случаев гиардиоза. Результаты показали, что оба диагностических метода равноценны и что исследования больных, страдающих диспептическими расстройствами, очень полезны.

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