Universidad Autónoma de San Luis Potosí
Facultad de Ciencias Químicas
Laboratorio de microbiología

Parasitology: Description of a case of amebiasis in the colon by *Entamoeba histolytica.*

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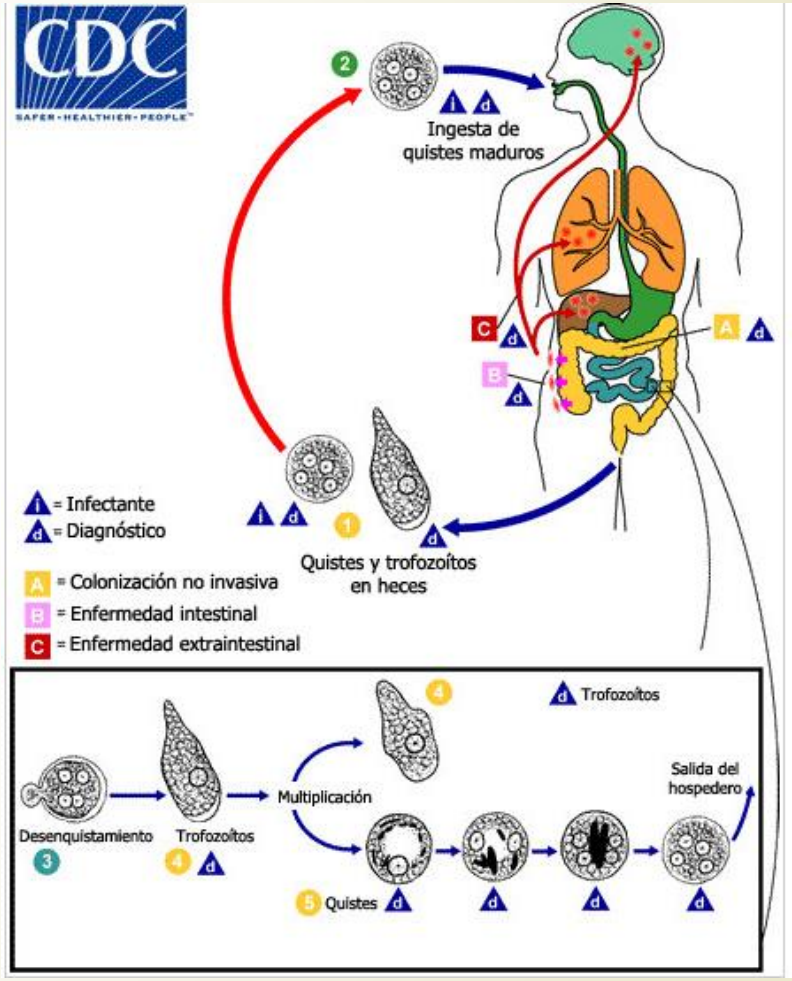
Group 8:00-9:00.

INTRODUCTION

Among the infectious agents common in humans are intestinal parasites.
According to the OMS, there are 3,500 million parasitized people in the world and about 450 million suffer from parasitic disease.
Endemicity levels depend on factors such as health conditions and sociocultural elements.



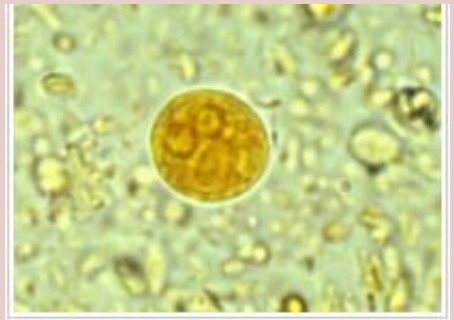
OBJECTIVES.

- To know and to identify the parasites present in samples of earth, taken from different zone.
- To associate the theoretical knowledge with the practice for the identification of parasitic forms and to know the application in the labor field through a clinical case and through the review of articles.

ENTAMOEBA HISTOLYTICA

*Entamoeba histolytica is a protozoan parasite that invades the intestine and causes amebiasis.

* It belongs to the edge Sarcomastigophora, class Lobosea and family Entamoebidae.



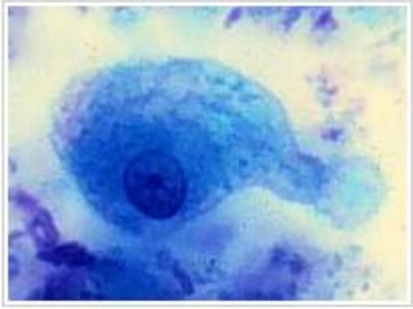
Quiste inmaduro con vacuola de glucógeno
Imagen: CDC/Dr. M. Melvin

*The invasive vegetative ameboid form is known as trofozoite and reaches a measurement of 12-40 µm, its caryoma is punctiform and its chromatin attached to the nuclear membrane.

* Cysts are resistance and infective form, are spherical or oval with a resistant wall of chitin, measuring 10-12 µm and have 4 nucleus.

*E. Hystolitica can contaminate soils, surviving for long periods on land and polluting vegetable crops.

* Its reservoir is the human intestine, moist soil, sewage, food and fomites.



Trofozoíto. Emisión de seudópodo (lobópodo).
Imagen: Chiang Mai University, Thailand

* The incubation period varies from 1 to 4 weeks with symptoms from intestinal inflammation, infection, fulminant colitis, peritonitis to extraintestinal amebiasis such as hepatic, cerebral, pericardial and genitourinary abcsesos.

* The diagnosis is made by means of light microscopy and the ELISA test.

ARTICLE #1

A 42-year-old male patient visits the San Rafael Hospital in Alajuela, Costa Rica, for a mucosanguinolytic diarrhea with a three-week history of onset, showing that the stools were black, often 10 times Per day, also refers to diffuse abdominal pain that is relieved when defecating, progressive loss of weight of 4 kilos in 3 months, associated with asthenia, adynamia, loss of appetite and tenesmus.

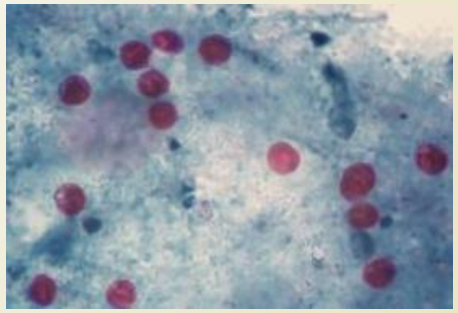
METHODOLOGY

Serial coproparasitoscopic examination (8 days).

Observation with lugol solution (fresh) and 0.9% saline solution

Additional tests

Stains for treponema, Campylobacter and Cryptosporidium.



HIV Testing

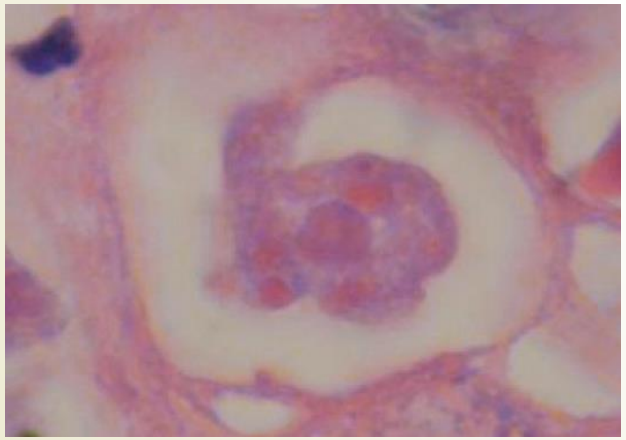
Gastroscopy and colonoscopy

Biopsy.

RESULTS

Quiste de E.histolytica teñida con lugol.

- In the microbiology laboratory, the presence of binucleate and tetranuclear cysts, with spherical and oval form, was observed before the microscope, however it was demonstrated the absence of Entamoeba histolytica in its trophozoite form.



Trofozoíto de E.histolytica con eritrocitos fagocitados.(Rev. Costarriciense de ciencias médicas.

Fresh coproparasitoscopic examination: cysts 9-11 microns in diameter, uninucleate and binucleate were found, as well as trophozoites of 15-20 µm.

Ferric hematoxylin staining: presence of binucleate and tetranuclear cysts of 10 µm diameter, with fine granular appearance.

HIV test: negative
Tinctures for Treponema, Campylobacter and Cryptosporidium negatives.

Biopsy: identification of rounded structures with vacuoles and nucleus, covering the whole mucosa of the colon.

Article # 2 Intestinal parasites in Argentina: main causative agents found in the population and in the environment

The objective of this work was to carry out a bibliographic review of the parasitic agents causing enteric diseases found in the Argentine Republic, both in the fecal matter of people and in the environment, since the parasitic contamination of the latter constitutes a direct indicator of the risk of Infection by intestinal parasites.

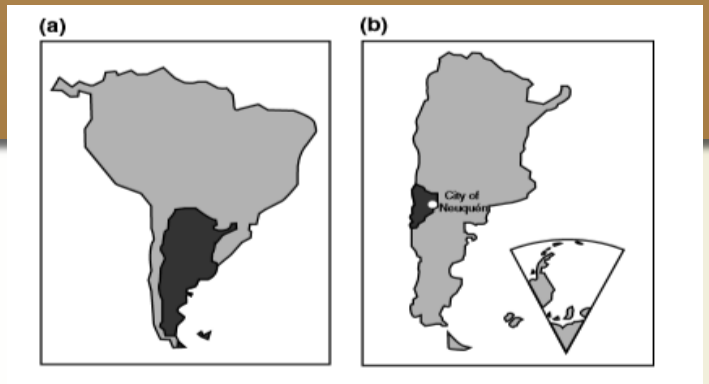
Tabla 1 Protozoos intestinales encontrados en muestras ambientales de la República Argentina

Protozoos	Encontrado en	Provincia
Amebas	Agua de consumo	Buenos Aires[26]
	Agua de río	Salta[59]
	Suelo	Buenos Aires[13]
Amebas comensales*	Agua de consumo y suelo	Buenos Aires[7]
Balantidium coli	Agua de río	Salta[59]
Chilomastix mesnili	Suelo	Buenos Aires[13]
Coccidios	Agua de consumo	Buenos Aires[7]
	Aguas recreacionales	Buenos Aires[14]
	suelo	Buenos Aires[7,13]
Cryptosporidium spp.	Agua de consumo	Buenos Aires[6], Santa Fe[40]
	Agua de consumo subterránea	Santa Fe[2]
	Agua de río, de arroyo y canal	Salta[59], Buenos Aires[14]
	Aguas recreacionales	Buenos Aires[14]
	Agua superficial	Santa Fe[1]
	Materia fecal de terneros	Córdoba[68], Santa Fe[19,52]
Cyclospora sp.	Agua de río	Salta[59]
	Efluentes agroindustriales	Mendoza[22]
Dientamoeba fragilis	Agua de río	Salta[59]
Endolimax nana	Agua de río	Salta[59]
	Suelo	Neuquén[62]
Endolimax sp.	Agua de arroyo y canal	Buenos Aires[14]
Entamoeba coli	Agua de consumo	Buenos Aires[7,26], Santa Fe[40]
	Agua de río	Salta[59]
	Suelo	Neuquén[62]
Entamoeba histolytica/E. dispar	Agua de río	Salta[59]
	Agua de consumo	Santa Fe[40]
Entamoeba spp.	Agua de arroyo y canal	Buenos Aires[14]
	Heces de perro	Neuquén[84]
Enteromonas hominis	Suelo	Neuquén[62]
Giardia lamblia	Agua de consumo	Buenos Aires[7], Santa Fe[40]
	Agua de río	Salta[59]
	Agua superficial	Santa Fe[1]
	Materia fecal de terneros	Córdoba[68]
	Materia fecal de perros y vacas	Buenos Aires[50]
	Suelo	Buenos Aires[7]
Giardia sp.	Aguas recreacionales	Buenos Aires[14]
	Aguas de arroyo y canal	Buenos Aires[14]
	Heces de perro	Neuquén[84]
	Efluentes domiciliarios	Río Negro[75]
	Suelo	Buenos Aires[13], Neuquén[75,82]
Isospora belli	Efluentes agroindustriales	Mendoza[22]
Isospora spp.	Efluentes agroindustriales	Mendoza[22]
	Heces de perro	Neuquén[84]
Microsporidium spp.	Agua de río	Salta[59]
Sarcocystis spp.	Heces de perro	Neuquén[84]
	Suelo	Neuquén[62]
Trichomonas spp.	Agua de río	Salta[59]

Tabla 2 Helmintos entéricos encontrados en muestras ambientales en Argentina

Helmintos	Encontrado en	Provincia
Ancilostomídeos	Heces de perro	Buenos Aires y Misiones[24]
	Suelo	Buenos Aires[13,24], Misiones[24]
Ancylostoma duodenale	Efluentes domiciliarios	Neuquén y Río Negro[75]
Ancylostoma sp.	Heces de perro	Neuquén[84]
Ascaris lumbricoides	Agua de río	Salta[59]
	Efluentes domiciliarios	Neuquén y Río Negro[75]
	Heces de perro	Buenos Aires[26]
	Suelo	Buenos Aires[13,24,26], Misiones[24]
Ascaris spp.	Aguas de arroyo y canal	Buenos Aires[14]
	Aguas recreacionales	Buenos Aires[14]
	Heces de perro	Buenos Aires y Misiones[24]
Capillaria spp.	Heces de perro	Neuquén[84]
	Suelo	Buenos Aires[13]
Diphyllobothrium spp.	Heces de perro	Neuquén[84], Chubut[68]
Dipylidium caninum	Agua de río	Salta[59]
	Heces de perro	Neuquén[84]
	Suelo	Buenos Aires[13]
Dipylidium sp.	Heces de perro	Chubut[68]
Enterobius vermicularis	Agua de río	Salta[59]
	Aguas recreacionales	Buenos Aires[14]
	Efluentes domiciliarios	Neuquén y Río Negro[75]
	Suelo	Buenos Aires[13]
Echinococcus granulosus	Aguas recreacionales	Buenos Aires[14]
Fasciola hepatica	Heces de cabra	Mendoza[16]
	Agua de río	Salta[59]
	Cabras, ovejas, bovinos, caracoles	Neuquén[67]
Hymenolepis diminuta	Aguas de arroyo y canal	Buenos Aires[14]
	Efluentes domiciliarios	Neuquén y Río Negro[75]
Hymenolepis nana	Agua de río	Salta[59]
	Suelo	Buenos Aires[13,24], Misiones[24]
Larvas de la familia *Oxyuridae*	Aguas de arroyo y canal	Buenos Aires[14]
Larvas de nematodes	Aguas de arroyo y canal	Buenos Aires[14]
	Suelo y agua de consumo	Buenos Aires[26]
	Heces de perro	Buenos Aires y Misiones[24]
	Suelo	Buenos Aires[13], Misiones[24]
Necator americanus	Agua de río	Salta[59]
Strongyloides sp.	Heces de perro	Chubut[68]
Strongyloides stercoralis	Agua de río	Salta[59]
Taenia spp.	Suelo	Buenos Aires[13,24]
Taenia spp./*Echinococcus* spp.	Suelo	Buenos Aires[26]
	Heces de perro	Neuquén[84]
Trichostrongylus spp.	Aguas de arroyo y canal	Buenos Aires[14]
	Agua de río	Salta[59]
Trichuris sp.	Aguas recreacionales	Buenos Aires[14]
	Suelo	Buenos Aires[13]
	Heces de perro	Chubut[68]
Trichuris trichiura	Agua de río	Salta[59]
	Efluentes domiciliarios	Neuquén y Río Negro[75]
Trichuris vulpis	Heces de perro	Buenos Aires[24,26], Misiones[24], Neuquén[84]

A total of 107 soil samples were collected over the four seasons of the year during 2000-2001. There were 37 samples in winter, 30 in spring, 20 in summer and 20 in autumn.
The relative frequencies of the different parasitic species found per station were calculated.



Analysis of the 107 soil samples determined 28.9% of samples positive for at least one parasite form (31/107). During the year of study six species of protozoa could be recovered from the soil. The presence of cysts of Entamoeba sp., Enteromonas sp., Endolimax sp., Giardia sp., Iodamoeba sp. And coccidios oocysts.

32.4% of winter samples indicated intestinal protozoa as well as 35% of autumn, 33.3% of spring and only 10% of summer.

In Argentina the available data of recent years on intestinal parasites found in the environment are abundant.

- The findings of these parasites are limited by several factors, such as the presence of research groups, the lack of sensitivity when performing techniques for finding parasites and the low concentration in samples collected.

- It is important to keep in mind that the parasites are found anywhere in the world and if you do not have the necessary measures we can present some parasitosis.

METHODOLOGY (Laboratory microbiology)

Collection of 4 soil samples (gardens of homes and FCQ).

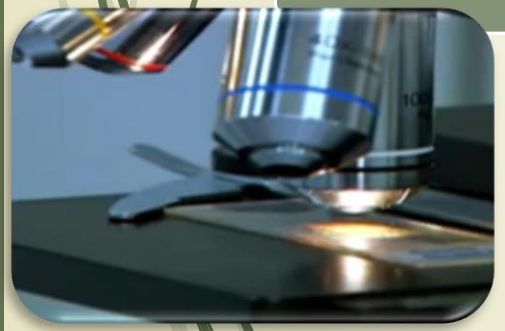
50 g of each sample were weighed and suspended in 50 ml of sol. Saline (0.9%).

Rest / 24 hours

Coproparasitoscopic method of concentration by sedimentation of Brij-35 to 30%

Preparation of sample on slides with a drop of lugol

Observation under the microscope.



RESULTS.

- By means of the collection of soil samples by the UASLP FCQ parasitology laboratory, the presence of Hymenolepsis nana eggs could be found in the sample referring to land taken from the community of Villa de Pozos. In the sample taken from the sleep of the area of Abastos in Gálvez could be found the presence of Áscaris lumbricoides. In the remaining samples no apparent presence of Parasites was found, however, for better detection it is important to do the sampling in triplicate, so that the results are of higher quality.

CONCLUSIONS

- By means of the practice we can verify the existence of intestinal parasites around us, which indicates the exposure to which we submit to not having the adequate conditions of hygiene and sanitation of food, water and soil.

- Also, we can demonstrate that the study of microbiology is of great clinical importance for the diagnosis of parasitic diseases and collaboration with the physician for its subsequent treatment.

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