



# Amebiasis



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# Amebiasis

## Aspectos Históricos

**Fedor Lösch (1875)**



Primera identificación de *E. histolytica* (*Trofozoitos*)

**Kartulis (1887)**



Demostró por primera vez su papel como patógeno.

**Fritz Schaudinn (1903)**



Primera descripción taxonómica formal de *E. histolytica*. (tinción)



**Dobell (1919)**



Omnipatogenicidad (monos, simios, bovinos, porcinos, caninos, felinos y roedores)

**Emile Brumpt (1925)**



Existencia de dos especies similares morfológicamente pero diferentes desde el punto de vista clínico:

*E. histolytica*, capaz de ocasionar enfermedad en seres humanos, y *E. dispar*, sin capacidad patógena

**Hoare (1961)**



Afirmó la existencia de dos tipos diferentes de amiba histolytica

**Sargeaunt (1978)**



Empezó a analizar el patrón electroforético de las isoenzimas de la hexoquinasa de *E. histolytica*, Logró determinar dos tipos de patrones electroforéticos ("zimodemos parásitos" y "zimodemos no parásitos")

# Amebiasis

## Taxonomía

- Eukaryota (super reino);
  - Amoebozoa (ph);
    - Archamoebae (c);
      - Entamoebidae (f);
        - » *Entamoeba histolytica*



Fig. 1. *Entamoeba histolytica* trophozoites, showing nucleus and karyosome (arrow) (MF).

Isea MC, Escudero-Sepulveda A, Rodriguez-Morales AJ. Amebic Colitis. In: Fukata M. (Editor). Colitis. ISBN 978-953-307-799-4.

InTech, Croatia, 2012: Chapter 3: 49-64. Available at:  
<http://www.intechopen.com/articles/show/title/amebic-colitis>

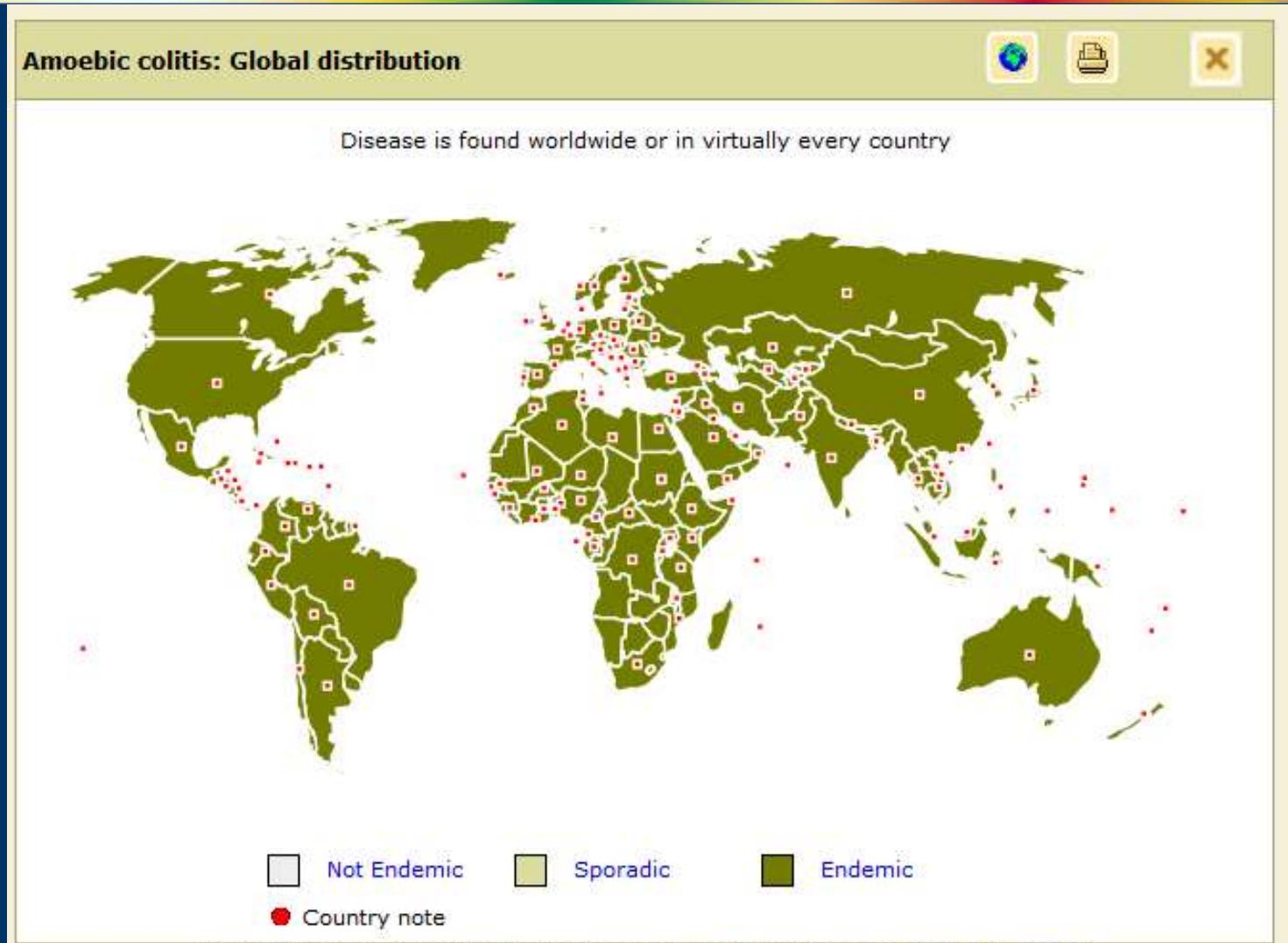
# ENTEROPARASITOSIS

## Prevalencia Mundial

<i>Ascaris lumbricoides</i>	<i>1,300 millardos</i>
<i>Trichuris trichiura</i>	<i>1,049 millardos</i>
<i>Anquilostomideos</i>	<i>1 millardo</i>
<i>Complejo E. histolytica/dispar</i>	<i>500 millones</i>
<i>Enterobius vermicularis</i>	<i>400 millones</i>
<i>Schistosoma mansoni</i>	<i>200 millones</i>
<i>Giardia lamblia</i>	<i>200 millones</i>
<i>Strongyloides stercoralis</i>	<i>100 millones</i>
<i>Taenia sp</i>	<i>70 millones</i>

# Amebiasis

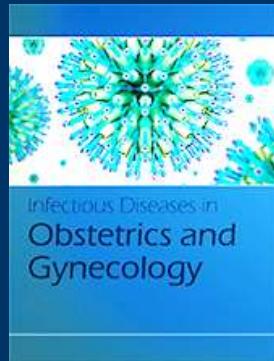
## Prevalencia Mundial



**Table 2.** Estimated Prevalence of Neglected Infections of Poverty in the US.

Neglected Disease Category	Disease	Estimated Number of Cases	Major Regions or Populations at Risk	References
Soil-transmitted helminth infections	Ascariasis	<4 million	Appalachia, American South	[29]
	Toxocariasis	1.3–2.8 million	Inner cities, American South, Appalachia	[14,79,84]
	Strongyloidiasis	68,000–100,000	Appalachia, African refugees	[14,19,25,35]
	Trichinellosis	16 (insufficient data)	Arctic Alaska	[149]
Platyhelminth Infections	Cysticercosis	41,400–169,000	US–Mexico borderlands	[19,96,113]
	Schistosomiasis	8,000	African refugees	[89,90]
	Echinococcosis	Insufficient data	Tribal Lands and Arctic Alaska	—
Protozoan Infections	Giardiasis	2.0–2.5 million	All regions	[123,147]
	Trichomoniasis	880,000 (black women)	American South, inner cities	[14,66]
	Cryptosporidiosis	300,000	All regions	[123]
	Chagas disease	3,000 to >1 million	US–Mexico borderlands, American South	[11,102,103,105,109]
	Cyclosporiasis	16,624	All regions	[123]
	Congenital toxoplasmosis	≤4,000 annually	American South, inner cities, US–Mexico borderlands, Arctic Alaska	[65]
	Leishmaniasis	Insufficient data	US–Mexico borderlands	—
Bacterial Infections	Amebiasis	Insufficient data	US–Mexico borderlands	—
	Congenital syphilis	1,528 between 2000 and 2002	American South, inner cities	[62]
	Brucellosis	1,554	US–Mexico borderlands	[122,123]
	Bovine tuberculosis	129 cases between 1994 and 2000	US–Mexico borderlands	[124]
	Leprosy	166	US–Mexico borderlands	[148]
	Trench fever	Insufficient data	Inner cities	—
	Leptospirosis	Insufficient data	Inner cities	—

# ¿Nuevos efectos de las protozoosis?



Rodríguez-Morales AJ, Barbella RA, Case C, Arria M, Ravelo M, Perez H, Urdaneta O, Gervasio G, Rubio N, Maldonado A, Aguilera Y, Viloria A, Blanco JJ, Colina M, Hernández E, Araujo E, Cabaniel G, Benitez J, Rifakis P. **Intestinal parasitic infections among pregnant women in Venezuela.** *Infect Dis Obstet Gynecol.* 2006;2006:23125.

TABLE 1: Parasite positivity in stool specimens examined from pregnant women studied.

	Number	(%)	Helminths		
Protozoans					
Nonpathogenic					
<i>Entamoeba coli</i>	44	5.7	<i>Ascaris lumbricoides</i>	437	57.0
<i>Endolimax nana</i>	30	3.9	<i>Trichuris trichiura</i>	276	36.0
Pathogenic			<i>Necator americanus</i>	62	8.1
<i>Giardia lamblia</i>	108	14.1	<i>Enterobius vermicularis</i>	48	6.3
<i>Entamoeba histolytica/dispar</i>	92	12.0	<i>Strongyloides stercoralis</i>	25	3.3
<i>Cryptosporidium spp</i>	2	0.3			

TABLE 2: Relative risk for anemia at pregnancy according to the presence of intestinal parasitosis.

Variable (risk for anemia)	Anemia	Normal			$\chi^2$ Yates	P
		Hb	RR			
Intestinal parasitosis at pregnancy						
Present	594	173	2.56	194.24	< .0001	
Absent	82	189	—	—	—	
Helminth infection at pregnancy						
Present	322	61	1.56	94.63	< .0001	
Absent	354	301	—	—	—	
Protozoan infection at pregnancy						
Present	179	23	1.49	59.65	< .0001	
Absent	497	339	—	—	—	

# Enteropatógenos Crónicos en Viajeros

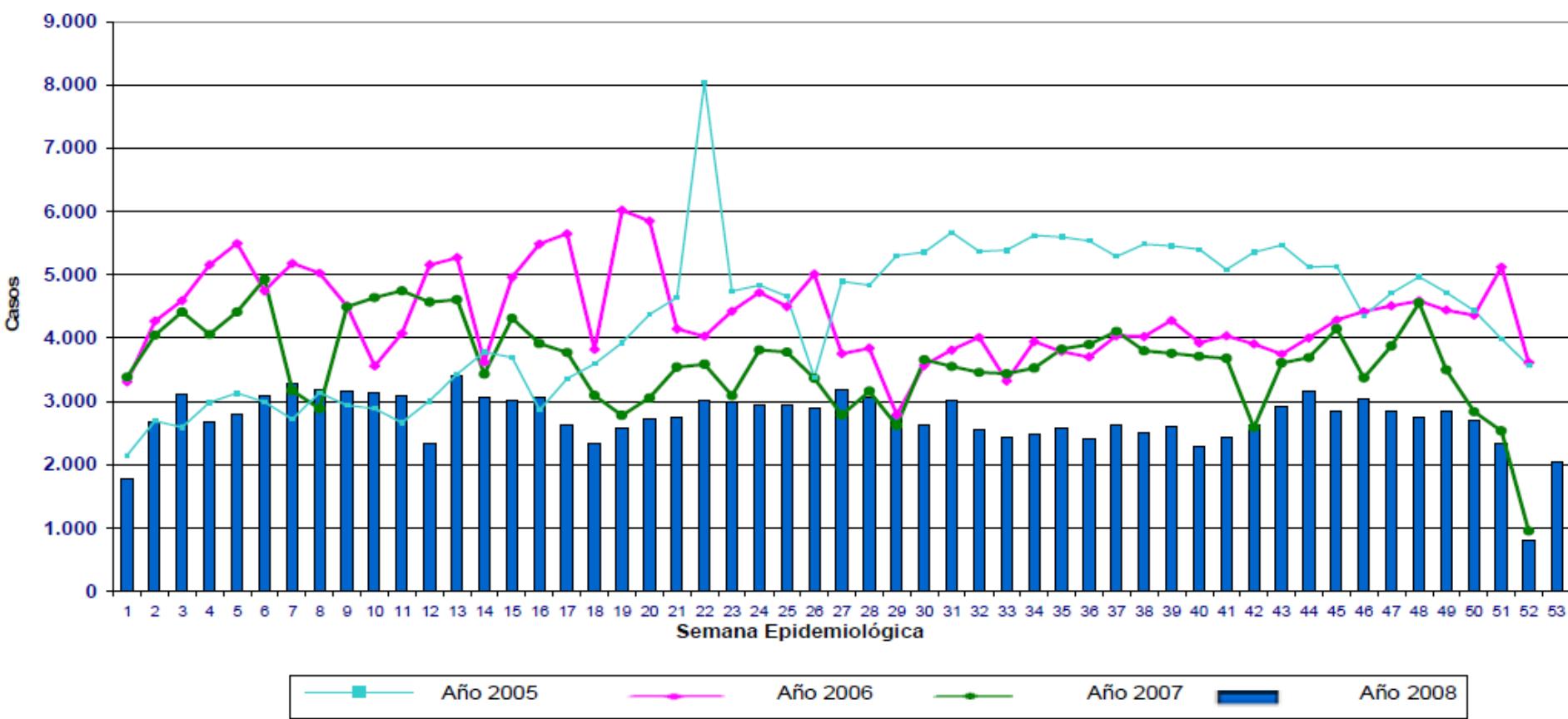


**Table 1. Enteropathogens Causing Chronic Illness in the Returning Traveler.\***

Enteropathogen	Areas of High Risk	Mode of Transmission	Amount of Inoculum Required for Infection		Incubation Period	Common Symptoms	Diagnostic Method	Adult Treatment	Pediatric Treatment
			CFU/ml)						
Giardia	South Asia, Middle East, South America	Drinking water, human contact	Low (<100 CFU/ml)	7–10 Days	Abdominal pain, nausea, persistent watery diarrhea	Stool microscopical examination and stool giardia antigen assay	Metronidazole, 250 mg, 3 times/day for 7–10 days or 500 mg twice a day for 5–7 days	Metronidazole, 5 mg/kg of body weight, 3 times/day for 7–10 days (maximum of 250 mg/dose)	
<i>Entamoeba histolytica</i>	South Asia, Southeast Asia, Middle East, South America	Human contact, drinking water	Low (<100 CFU/ml)	11–21 Days	Abdominal pain, fever, persistent watery diarrhea	Stool <i>E. histolytica</i> antigen assay	Metronidazole, 500–750 mg, 3 times/day for 7–10 days; plus paromomycin, 500 mg, 3 times/day for 7 days	Metronidazole, 50 mg/kg, in 3 divided doses/day for 7–10 days (maximum of 750 mg/dose)	
Strongyloides	Caribbean, Latin America, South America, Africa, Asia, Oceania	Contaminated soil	Low (third-stage larvae)	11–21 Days	Larva currens, abdominal pain, persistent diarrhea	Stool microscopical examination	Ivermectin, 200 µg/kg of body weight/day for 2 days	Ivermectin, 200 µg/kg/day for 2 days (for weight >15 kg)	
Schistosoma	Africa, Asia, South America	Fresh-water contact where schistosoma is endemic	Low (few cercariae)	14–84 Days	Katayama syndrome, abdominal pain, persistent diarrhea, hematuria	Kato–Katz stool examination, urine microscopical examination	Praziquantel, 40 mg/kg twice a day for 1 day for <i>S. hematobium</i> and <i>S. mansoni</i> , and 60 mg/kg 3 times/day for 1 day for <i>S. japonicum</i>	Praziquantel (for patients ≥4 yr of age), 40 mg/kg twice a day for 1 day for <i>S. hematobium</i> and <i>S. mansoni</i> , and 60 mg/kg 3 times a day for 1 day for <i>S. japonicum</i>	

# Vigilancia Epidemiológica en Amebiasis

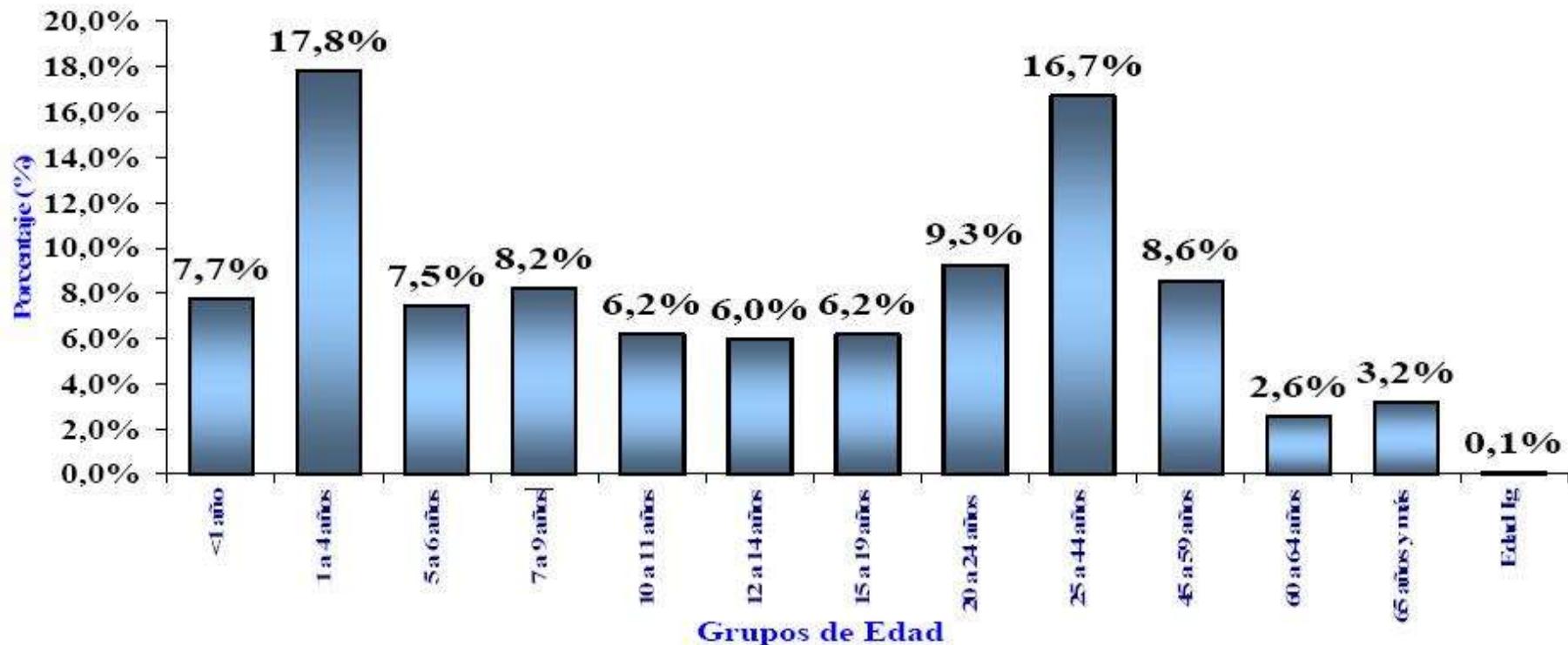
**Amebiasis**  
**Número de Casos Según Semanas Epidemiológicas**  
**Venezuela, comparativo 2005 - 2006 - 2007 - 2008**



Fuente: Dirección de Vigilancia Epidemiológica

# Vigilancia Epidemiológica en Amebiasis

Amibiasis. Porcentajes por Grupo de Edad.  
Venezuela, Semana Epidemiológica 53 de 2008.



Fuente: Dirección de Vigilancia Epidemiológica

# Amebiasis

## Epidemiología

Country	Prevalence of <i>Entamoeba species</i>	Reference
Cuba	1.5% ( <i>E. histolytica/dispar</i> )	Escobedo, A. A. 1999
Bogota, Colombia	13% ( <i>E. histolytica</i> )	Florez et al., 2003
San Pedro Sula, Honduras	5.8% ( <i>E. histolytica</i> )	Lindo et al., 1998
Venezuela (Zulia state)	10.8% ( <i>E. histolytica</i> )	Rivero et al., 2009
Brazil	3.3% and 1% ( <i>E. histolytica/dispar</i> before and after HAART)	Bachur et al., 2008
Mexico	25.3% in HIV+ and 18.5% in HIV- contacts ( <i>E. histolytica</i> )	Moran et al., 2005
Tajikistan	25.9% ( <i>E. histolytica/dispar</i> non HIV)	Matthys et al., 2011
Northern India	7.7% ( <i>E. histolytica</i> )	Prasad et al., 2000
Taiwan	5.8% ( <i>E. histolytica</i> in HIV patients)	Hung et al., 2008
Bangladesh	2.1% vs. 1.4% in diarrhea and control ( <i>E. histolytica</i> )	Haque et al., 2009
India (Kolkata)	3.6% ( <i>E. histolytica</i> )	Mukherjee et al., 2010
Sydney, Australia	3.2% ( <i>E. histolytica/E. dispar</i> )	Stark et al., 2007
Mazandaran province, Iran	1.6% ( <i>E. histolytica</i> )	Daryani et al., 2009
Uganda	1.4% ( <i>E. histolytica</i> )	Brink et al., 2002
Ethiopia	10.3% ( <i>E. histolytica</i> )	Hailemariam et al., 2004
Dakar, Senegal	5.1% ( <i>E. histolytica</i> )	Gassama et al., 2001
South Africa	12.4% ( <i>E. histolytica</i> )	Samie et al., 2006

Table 1. Global prevalence of *E. histolytica* in HIV-infected and non-infected persons.

Samie A, Elbakri A, AbuOdeh R. Amoebiasis in the Tropics: Epidemiology and Pathogenesis. In: Rodriguez-Morales AJ. (Editor). Current Topics in Tropical Medicine. ISBN 978-953-51-0274-8. InTech, Croatia, March 2012. Chapter 14: 201-226. <http://www.intechopen.com/books/current-topics-in-tropical-medicine>



# Amebiasis

## Epidemiología

**Table 1**

Prevalence of intestinal helminths and protozoa in individuals from North Central Venezuela (May 2007 to December 2008)

Parasite	n <sup>a</sup>	% (95% CI)
Helminths	209 845	4.49 (4.47–4.51)
<i>Ascaris lumbricoides</i>	174 257	3.73 (3.71–3.74)
<i>Trichuris trichiura</i>	53 031	1.13 (1.12–1.14)
<i>Enterobius vermicularis</i>	18 177	0.39 (0.38–0.40)
<i>Strongyloides stercoralis</i>	15 743	0.34 (0.33–0.35)
Hookworms	7 817	0.17 (0.16–0.18)
<i>Hymenolepis nana</i>	2 979	0.06 (0.05–0.07)
Protozoa	2 675 384	57.22 (57.18–57.27)
<i>Blastocystis hominis</i>	2 176 703	46.56 (46.51–46.60)
<i>Giardia duodenalis</i>	358 538	7.67 (7.64–7.69)
<i>Iodamoeba bütschlii</i>	150 032	3.21 (3.19–3.23)
<i>Dientamoeba fragilis</i>	76 086	1.63 (1.62–1.64)
<i>Entamoeba histolytica/dispar</i>	42 396	0.91 (0.90–0.92)
<i>Trichomonas hominis</i>	8 416	0.18 (0.17–0.19)
<i>Chilomastix mesnili</i>	4 675	0.10 (0.09–0.11)

<sup>a</sup> n = number of positives in the population.

# Amebiasis

## Epidemiología

Figure 1. Map of Venezuela showing areas of study (2007-2009) where individuals were sampled (coloured).



### Epidemiology of intestinal parasitosis in eleven states of Venezuela: partial results of an ongoing national survey (N=7.120.744)

Parasite	Prevalence (%)	95%CI	Parasite	Prevalence (%)	95%CI
<i>B. hominis</i>	45.632	45.596-45.669	<i>T. trichiura</i>	1.569	1.560-1.578
<i>E. nana</i>	12.573	12.548-12.597	<i>Hookworms</i>	0.664	0.658-0.670
<i>E. coli</i>	11.745	11.722-11.769	<i>S. stercoralis</i>	0.381	0.376-0.385
<i>G. intestinalis</i>	7.426	7.406-7.445	<i>E. vermicularis</i>	0.264	0.260-0.268
<i>A. lumbricoides</i>	3.974	3.959-3.988	<i>H. nana</i>	0.257	0.253-0.261
<i>I. bütschlii</i>	3.211	3.198-3.224	<i>C. mesnili</i>	0.246	0.242-0.249
<i>E. histolytica</i>	1.632	1.623-1.642	<i>T. hominis</i>	0.118	0.116-0.121

# Amebiasis

## Epidemiología en Pacientes con VIH+

**Table 2.** Prevalence of intestinal parasitic infections (%)

Agent	Acute diarrhoea (n=104)	Chronic diarrhoea (n=113)	Control group (n=87)	Total population (n=304)
<i>Blastocystis hominis</i>	25	26	31	27
<i>C. parvum</i>	16	19	7	15
<i>E. histolytica/E. dispar</i>	16	15	5	13
<i>I. belli</i>	12	17	1	11
<i>S. stercoralis</i>	10	17	3	11
<i>G. intestinalis</i> ( <i>lamblia</i> )	2	4	2	3

Arenas-Pinto A. et al.  
International Journal of STD & AIDS 2003; 14: 487– 492

**Table 3.** Parasitic agents associated with acute and chronic diarrhoea

Associate factor	Univariate analysis			Multivariate analysis		
	OR	P	95% CI	OR	P	95% CI
<b>Acute diarrhoea</b>						
<i>I. belli</i>	11.22	0.022	1.43–88.1	10.2	0.035	1.17–88.79
<i>E. histolytica/E. dispar</i>	4.05	0.015	1.31–12.55	11.48	0.023	1.4–94.06
<i>C. parvum</i>	2.64	0.052*	0.99–7.02	2.6	0.07	0.93–7.26
<b>Chronic diarrhoea</b>						
<i>I. belli</i>	17.38	0.0003	2.1–143.24	16.43	0.01	1.95–138.42
<i>S. stercoralis</i>	5.66	0.003	1.57–20.46	4.29	0.043	1.04–17.66
<i>E. histolytica/E. dispar</i>	3.67	0.017	1.17–11.57	8.6	0.001	2.55–29.07
<i>C. parvum</i>	3.08	0.017	1.17–8.14	3.39	0.029	1.13–10.19

\*Marginally associated: P value slightly over the significance level

# Amebiasis

## Epidemiología en Pacientes con VIH+

Hung C-C, Ji D-D, Sun H-Y, Lee Y-T, Hsu S-Y, et al. (2008)  
Increased Risk for *Entamoeba histolytica* Infection and Invasive  
Amebiasis in HIV Seropositive  
Men Who Have Sex with Men in Taiwan. PLoS Negl Trop Dis  
2(2): e175.

**Table 2.** Characteristics of non-hemophiliac patients aged 15 years or greater who had baseline and follow-up indirect hemagglutination (IHA) assays.

Variable	MSM	Heterosexuals and Other	All	Statistics, p =
Patients, N	433	237	670	
Sex, M/F	433/0	184/53	617/53	<0.0001
Age when first IHA was determined, median (IQR), y	32 (27, 38)	40 (32.5, 51)	35 (29, 42)	<0.0001
Age when second IHA was determined, median (IQR), y	36 (31, 42)	44 (38, 55)	39 (33, 46)	<0.0001
CD4 when first IHA was determined, median (IQR), cells/L	183 (45, 413)	135 (24, 323)	173 (37, 389)	0.02
CD4<200 cells/L, N (%)	195 (51.7)	102 (56.4)	297 (53.2)	0.30
CD4 when second IHA was determined, median (IQR), cells/L	400.5 (258, 593)	353 (223, 541)	385.5 (247.5, 574.5)	0.069
CD4<200 cells/L (%)	74 (18.4)	48 (21.6)	122 (19.6)	0.33
Interval between two IHA tests, median (IQR), days	958 (592,1700)	1184 (660, 2108)	1054 (606,1857)	0.002
HAART initiated, N (%)	401 (92.6)	228 (96.2)	629 (93.9)	0.07
Geometric mean IHA titer at baseline	134.19	48.11	100.83	0.16
IHA ≥ 128, N (%)	31 (7.2)	5 (2.1)	36 (5.4)	0.006
Geometric mean IHA titer of the second test	108.89	33.90	89.64	0.0002
IHA ≥ 128, N (%)	46 (10.6)	3 (1.3)	49 (7.3)	<0.0001
Total observation duration, PY	1458	963	2421	
*Seroconversion, N (%)	21 (4.9)	0 (0)	21 (3.1)	<0.0001
Incidence rate, per 100 PY (95% CI)	1.44 (0.89, 2.20)	0 (0, 0.38)	0.87 (0.54, 1.33)	<0.0001
**Seroconversion, N (%)	24 (5.5)	0 (0)	24 (3.6)	<0.0001
Incidence rate, per 100 PY (95% CI)	1.65 (1.05, 2.45)	0 (0, 0.38)	0.99 (0.64, 1.47)	<0.0001

# Amebiasis

## Epidemiología en Colombia

**Tabla 1.** Prevalencia de parásitos intestinales en población general del corregimiento de Loma Arena Santa Catalina. 2004

Especie parasitaria	Nº	%
<i>Entamoeba coli</i>	210	60
<i>Entamoeba histolytica/dispar</i>	191	54
<i>Endolimax nana</i>	125	36
<i>Blastocystis hominis</i>	103	29
<i>Iodamoeba butschlii</i>	72	21
<i>Giardia duodenalis</i>	61	17
<i>Trichomonas hominis</i>	3	0,9
<i>Cyclospora sp</i>	2	0,6
<i>Ascaris lumbricoides</i>	196	56
<i>Trichuris trichiura</i>	185	53
<i>Uncinaria</i>	21	6
<i>Hymenolepis nana</i>	14	4
<i>Strongyloides stercoralis</i>	11	3
<i>Taenia sp</i>	3	0,9
<i>Enterobius vermicularis</i>	2	0,6

# Amebiasis

## Epidemiología en Colombia

**Tabla 3.** Prevalencia de agentes etiológicos por edad

		<6 meses	6-12 meses	12-36 meses	>36 meses	Total
<i>Rotavirus</i>	No.	36	18	6	2	62
	Prev	0,73	0,54	0,22	0,1	0,48
<i>Shigella</i>	No.	0	0	0	1	1
	Prev	-	-	-	0	0
<i>E. Coli</i>	No.	1	4	5	8	18
	Prev	0,02	0,12	0,18	0,4	0,14
<i>Campylobacter</i>	No.	2	0	1	0	3
	Prev	0,04	0	0,03	0	0,02
<i>Giardia</i>	No.	1	3	5	7	16
	Prev	0,02	0,09	0,18	0,35	0,12
<i>E. Histolytica</i>	No.	0	3	4	2	9
	Prev	0	0,09	0,14	0,1	0,07
Desconocido	No.	9	5	6	0	20
	Prev	0,18	0,15	0,22	0	0,15

Manrique-Abril FG, Tigne y Diane B, Bello SE, Ospina JM.  
Agentes causantes de Diarrea en Niños Menores de 5 Años en  
Tunja, Colombia.  
Rev Salud Publica (Bogota). 2006 Jan-Apr;8(1):88-97.

# Amebiasis

## Epidemiología en Colombia

**Tabla 1**  
Protozoos intestinales patógenos identificados según regiones.  
Encuesta Nacional de Morbilidad, 1980

Protozoos patógenos	*Región del Atlántico	*Región Central	*Región del Pacífico	*Región Oriental	Santa fé de Bogotá
<i>Entamoeba histolytica</i>	16,4%	10,4%	14,3%	10%	10%
<i>Giardia lamblia</i>	15,7%	13,3%	13,3%	15%	10,8%
<i>Balantidium coli</i>	0,2%	-	0,2%	-	-
<i>Tricomonas intestinalis</i>	0,2-1%	0,2-1%	-	-	0,2-1%

\* Departamentos en: *Región del Atlántico* (Atlántico, Bolívar, Cesar, Córdoba, Guajira, Magdalena, Sucre). *Región Central* (Antioquia, Caldas, Huila, Tolima, Armenia, Quindío, Risaralda). *Región Pacífica* (Chocó, Cauca, Valle del Cauca, Nariño). *Región Oriental* (Boyacá, Norte de Santander, Santander, Casanare, Cundinamarca y Meta).

- No se mostró la prevalencia de estos parásitos en estas regiones, pues donde se obtuvo no fue significativa.

**Fuente:** Elaboración propia de los autores con datos de Parasitismo Intestinal. Bogotá: Instituto Nacional de Salud, 2000.

# Amebiasis

## Prevalencia en Colombia



Amoebic colitis in Colombia



### Prevalence surveys:

13% of HIV-positive patients in Bogota (2001) <sup>1</sup>

10.0% of infants and children with diarrhea in Sincelejo and Cartagena (1998 to 2000) <sup>2</sup>

30% of Indians in the Amazon (1978 publication) <sup>3</sup>

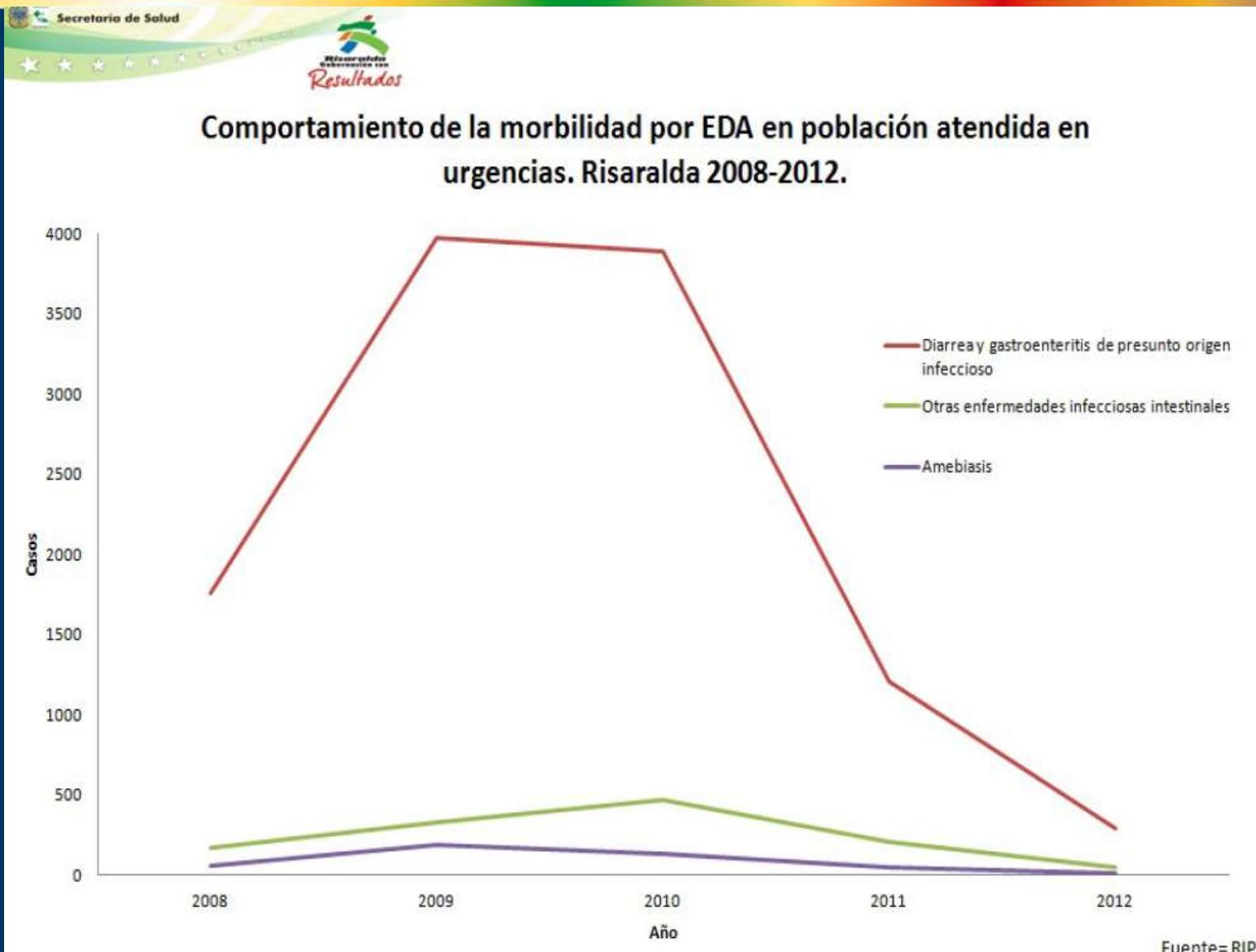
54% of individuals in Loma Arena village, Santa Catalina (2004) <sup>4</sup>

### List of all references

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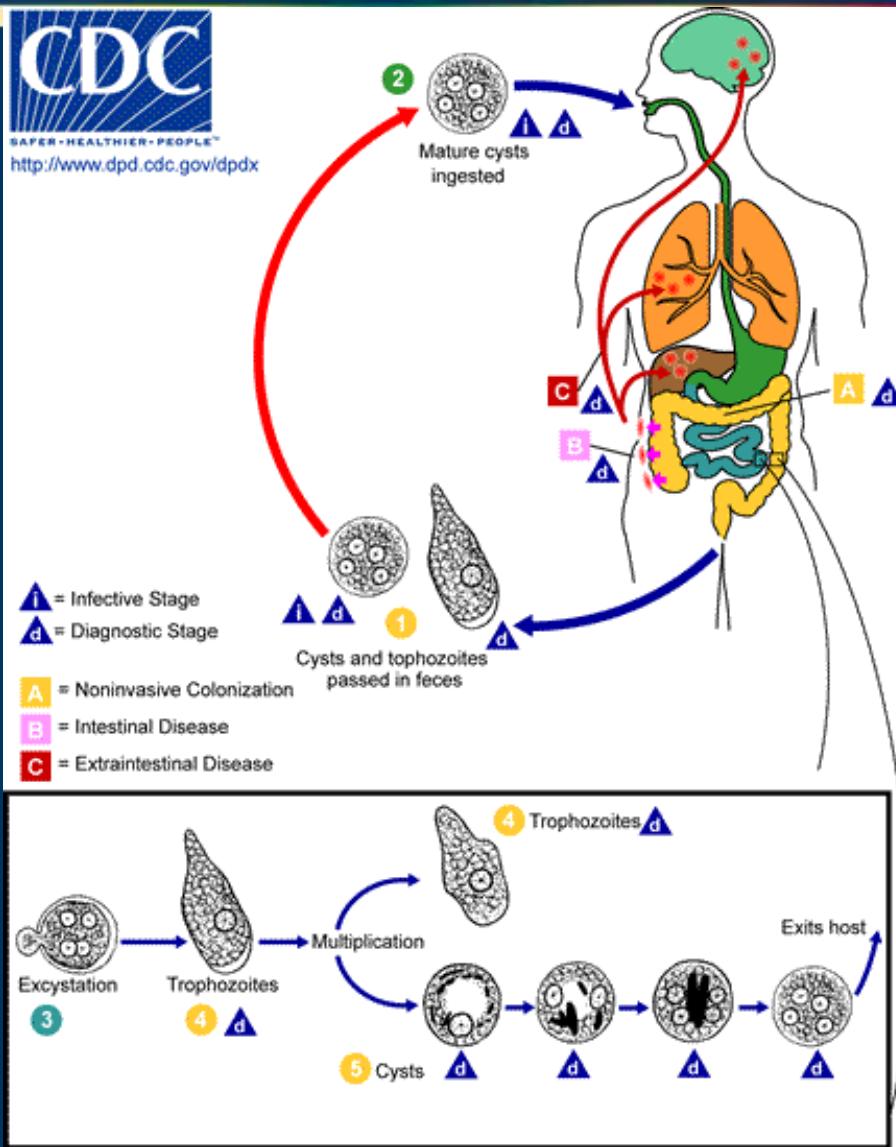
# Amebiasis

## Epidemiología en Risaralda



# Amebiasis

## Ciclo de Vida



# Amebiasis

## Ciclo de Vida

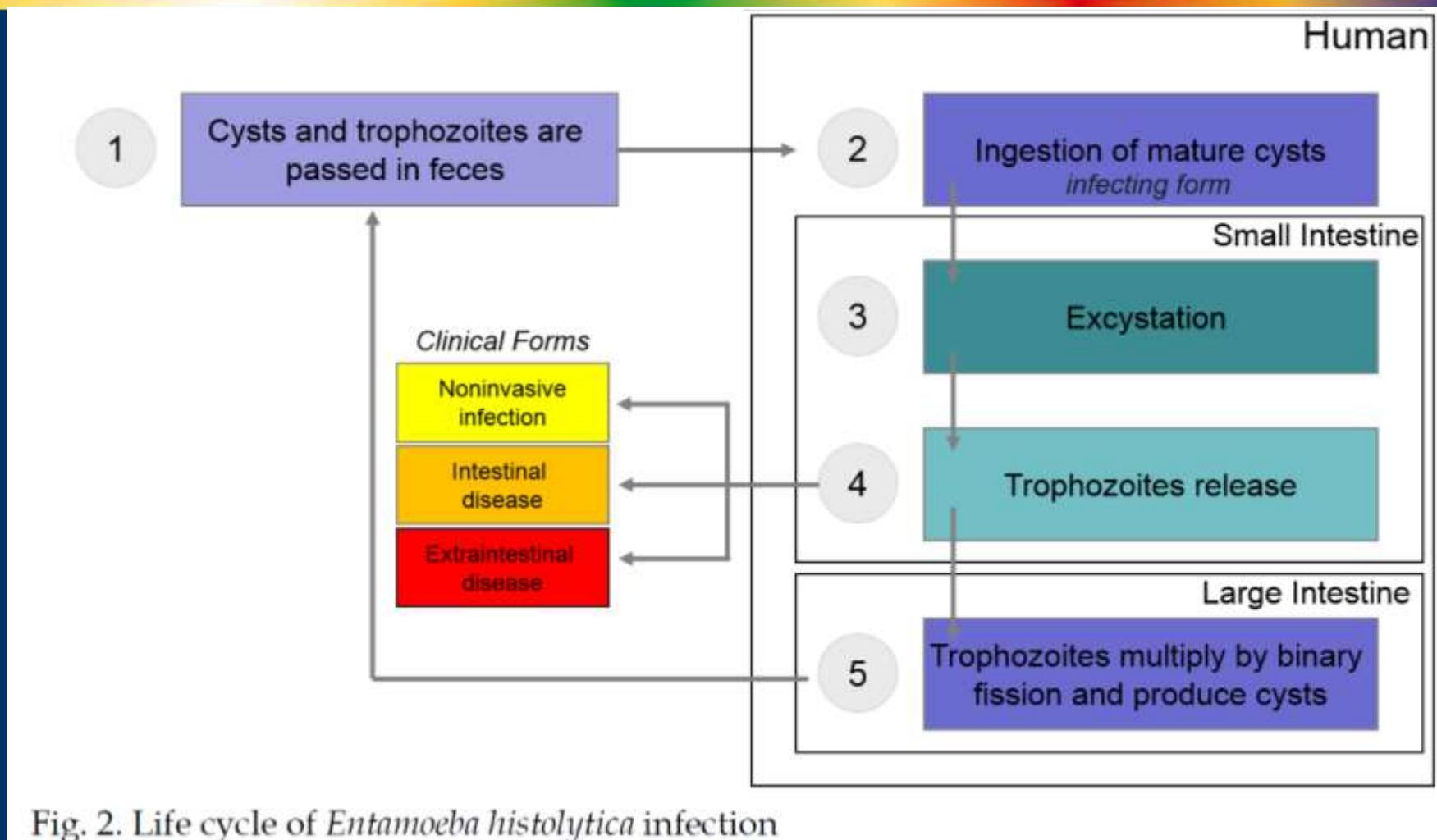


Fig. 2. Life cycle of *Entamoeba histolytica* infection

# Amebiasis

## Ciclo de Vida y Transformación

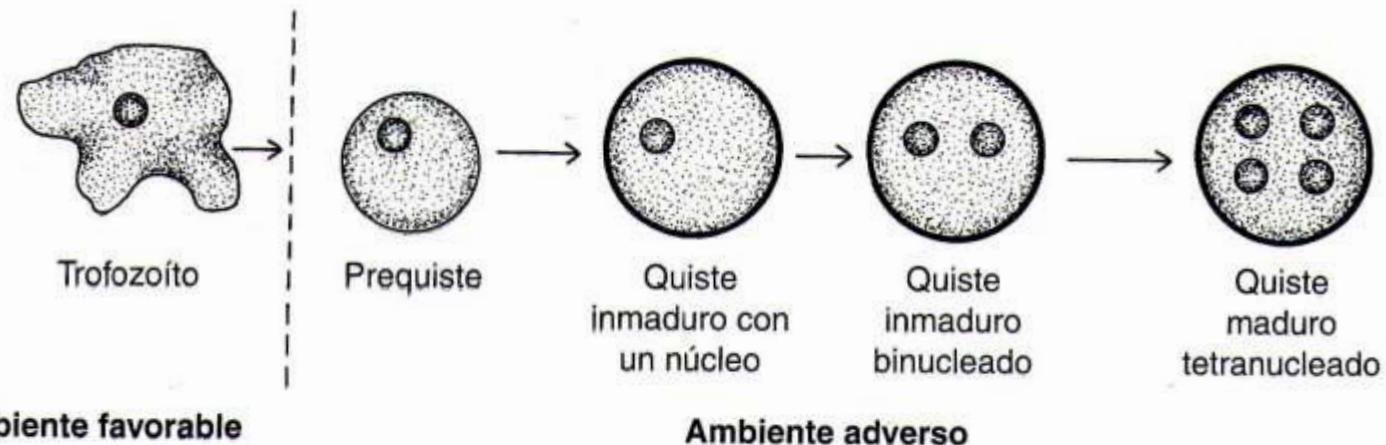
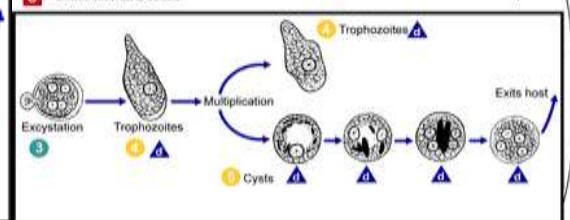
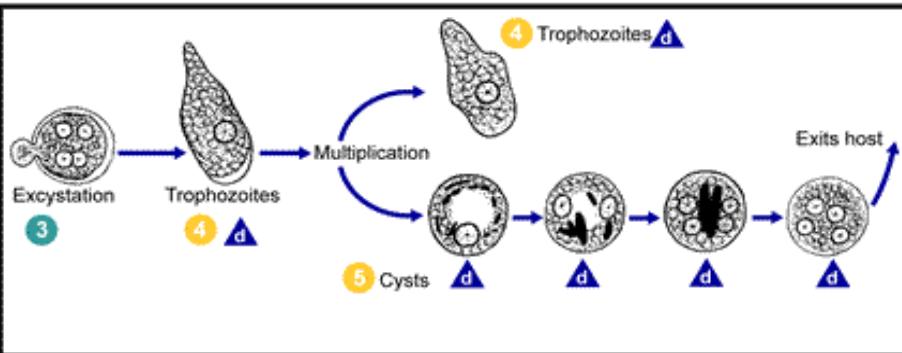
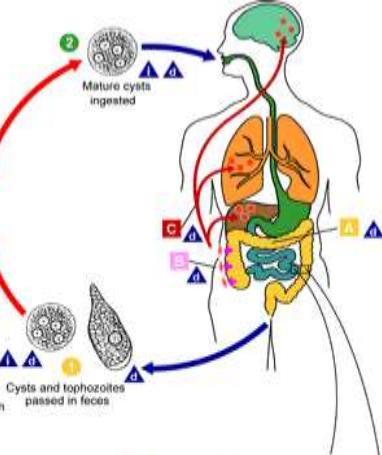


Fig. 4-2. Transformación de trofozoíto en quiste.

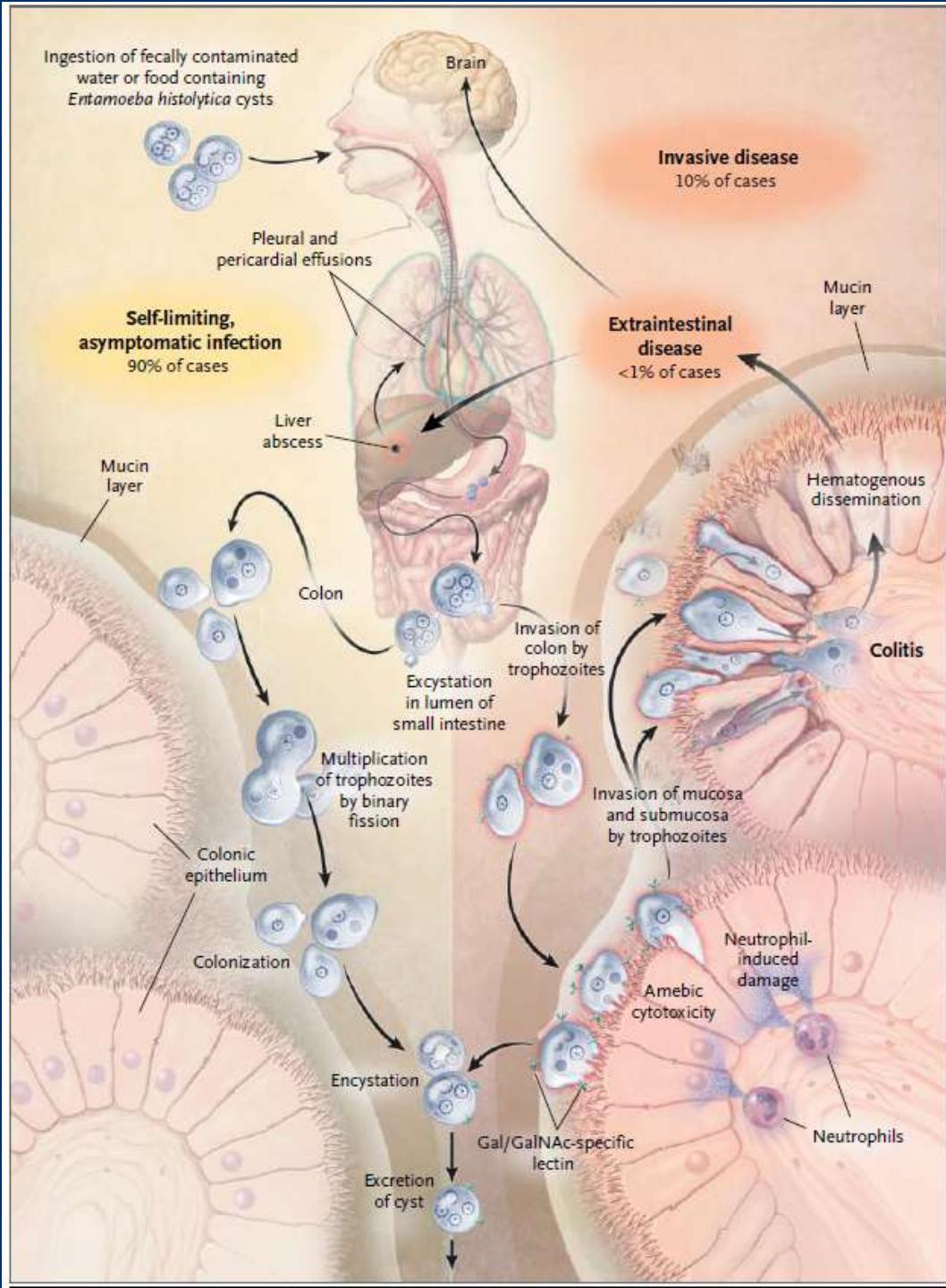


Figure 1 (facing page). Life Cycle of *Entamoeba histolytica*.

Infection is normally initiated by the ingestion of fecally contaminated water or food containing *E. histolytica* cysts. The infective cyst form of the parasite survives passage through the stomach and small intestine. Excystation occurs in the bowel lumen, where motile and potentially invasive trophozoites are formed. In most infections the trophozoites aggregate in the intestinal mucin layer and form new cysts, resulting in a self-limited and asymptomatic infection. In some cases, however, adherence to and lysis of the colonic epithelium, mediated by the galactose and *N*-acetyl-*D*-galactosamine (Gal/GalNAc)-specific lectin, initiates invasion of the colon by trophozoites. Neutrophils responding to the invasion contribute to cellular damage at the site of invasion. Once the intestinal epithelium is invaded, extraintestinal spread to the peritoneum, liver, and other sites may follow. Factors controlling invasion, as opposed to encystation, most likely include parasite "quorum sensing" signaled by the Gal/GalNAc-specific lectin, interactions of amebae with the bacterial flora of the intestine, and innate and acquired immune responses of the host.

# Amebiasis

## Enfermedad Intestinal (Invasiva)

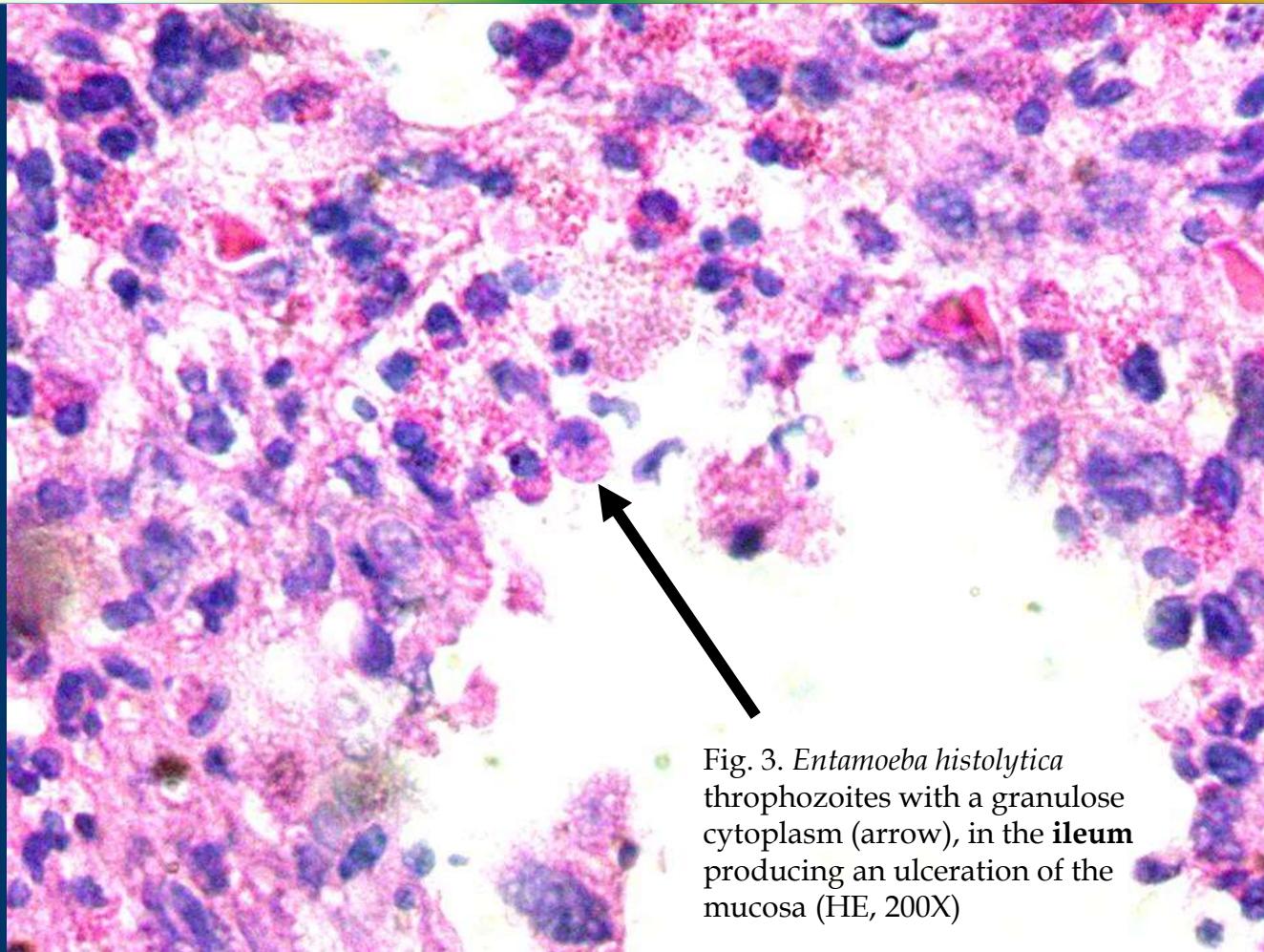


Fig. 3. *Entamoeba histolytica* trophozoites with a granulose cytoplasm (arrow), in the **ileum** producing an ulceration of the mucosa (HE, 200X)

# Amebiasis

## Trofozoitos, Prequistes y Quistes según especie

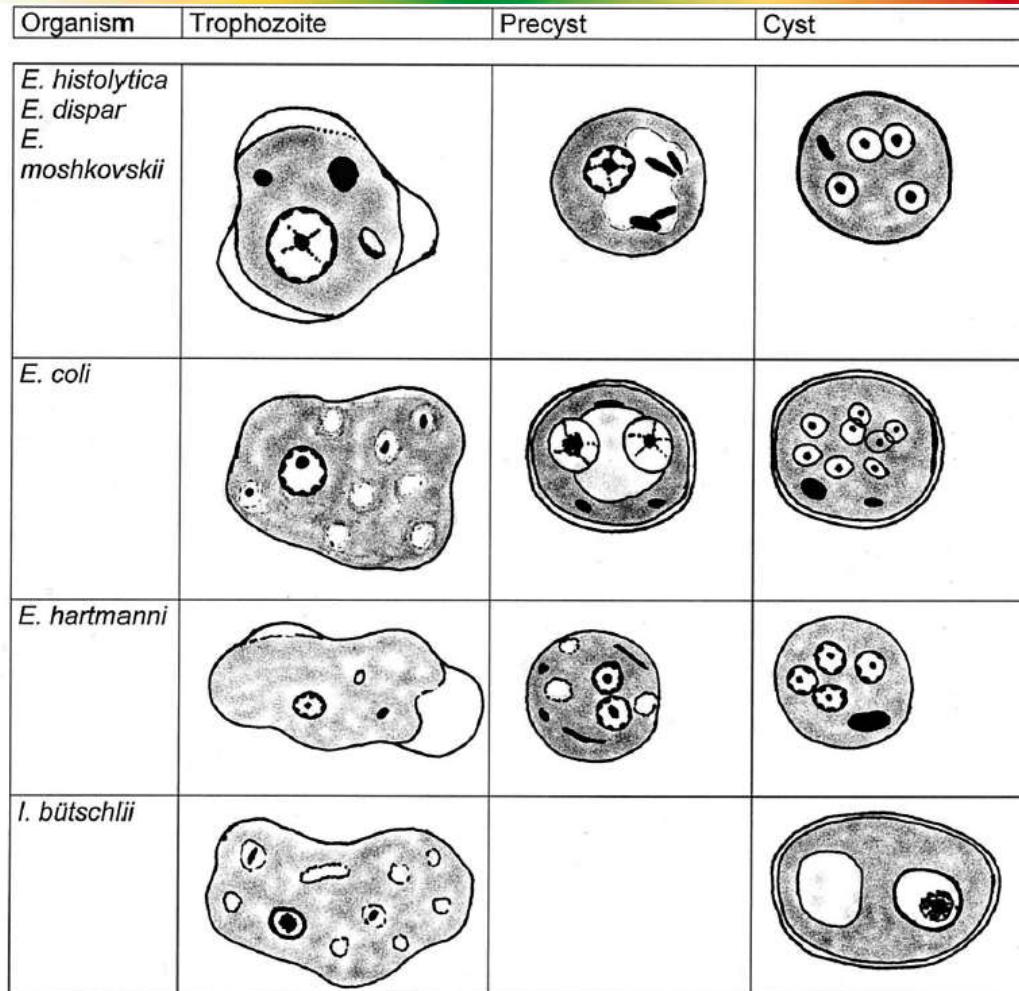
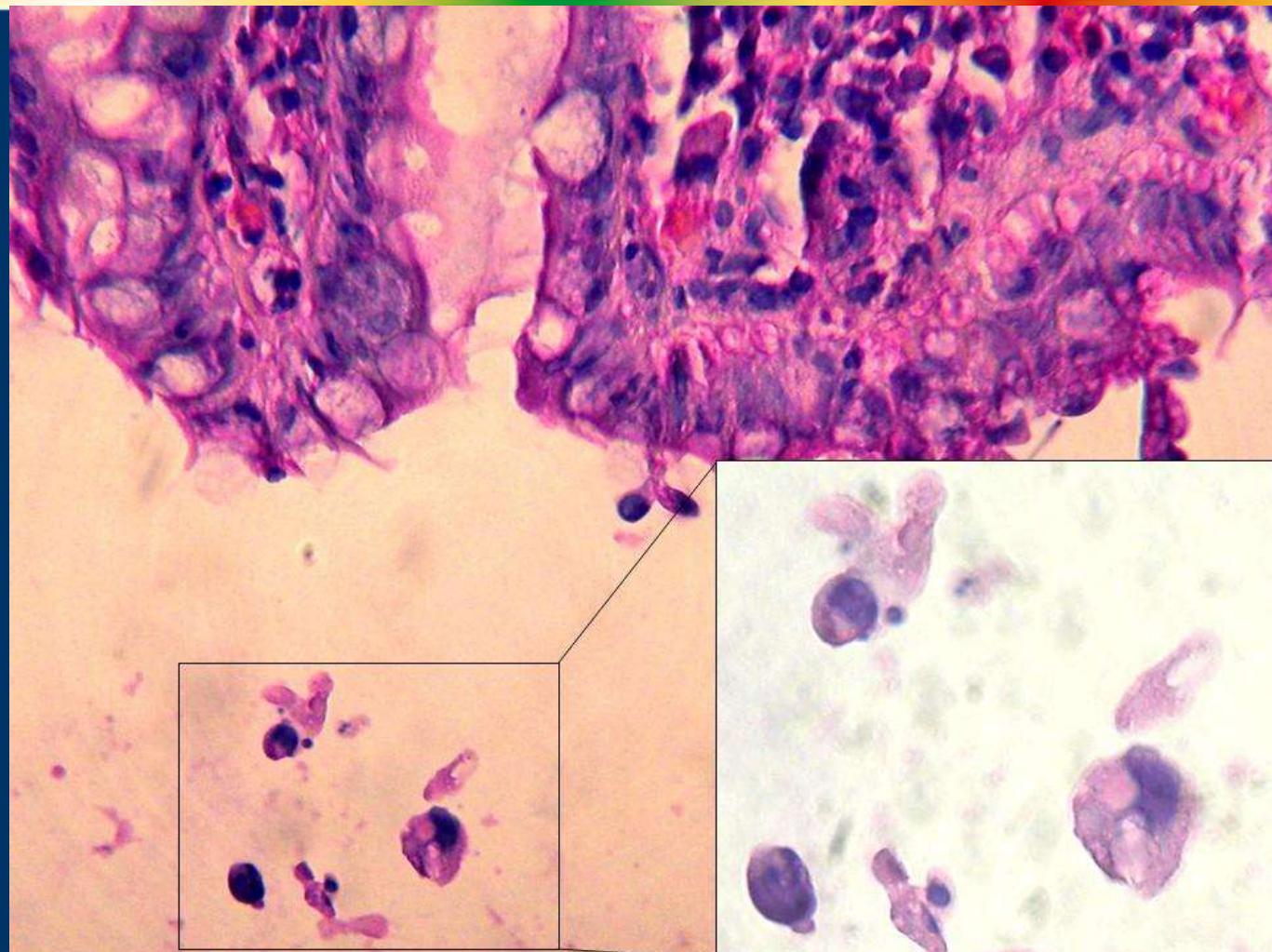


FIG. 1. Drawing of intestinal *Entamoeba* spp. showing morphological features. All illustrations are adapted from various sources.

# Amebiasis

## Enfermedad Intestinal (Invasiva)

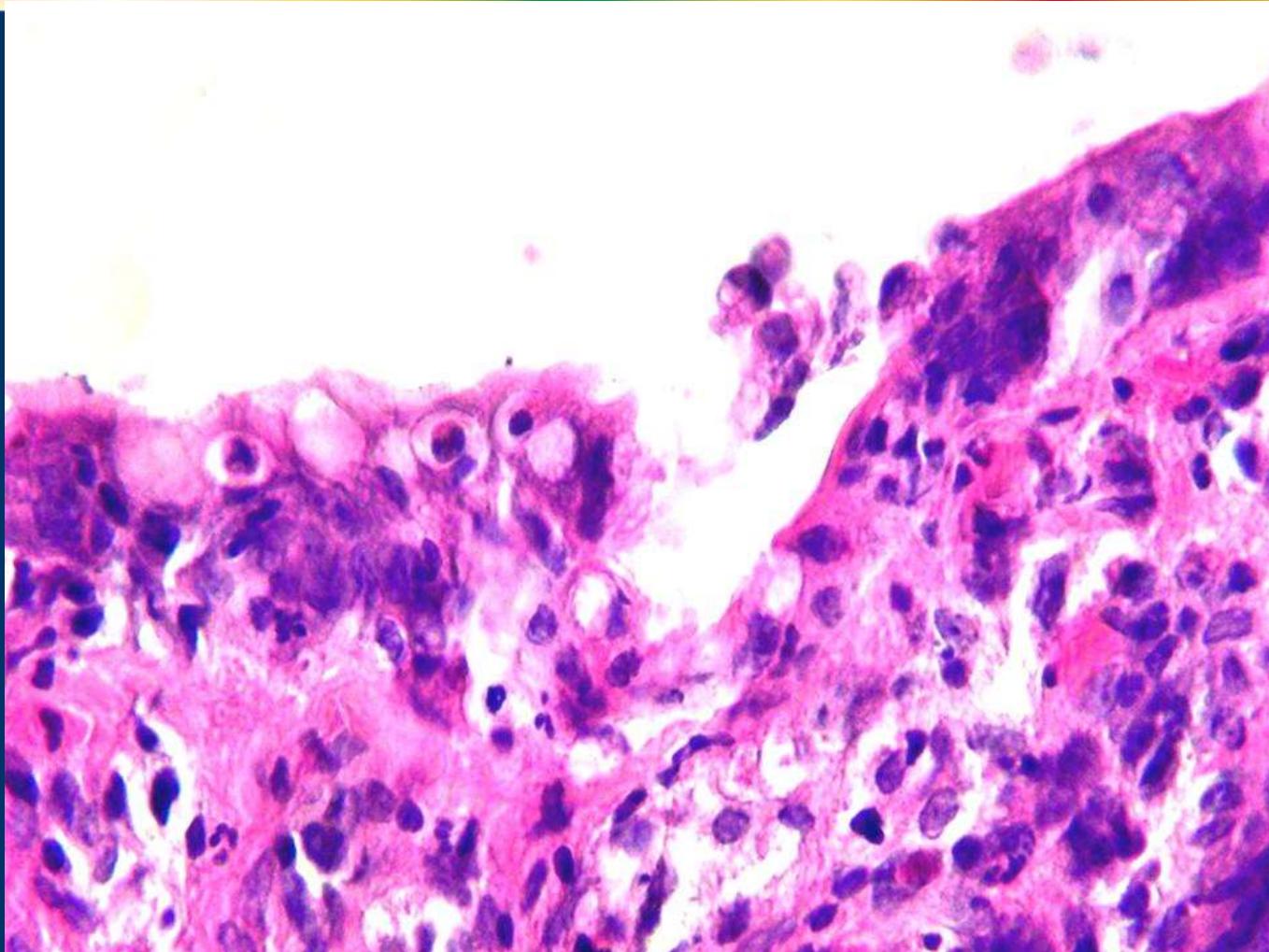
Fig. 5. Colon mucosa with mixed inflammatory infiltrate and congestion with presence of *E. histolytica* (HE, 400X, in the zooming, 1000X) (Dickson-Gonzalez et al., 2009)



# Amebiasis

## Enfermedad Intestinal (Invasiva)

Fig. 6. Inflammatory infiltrate in the superficial epithelium of the **colon**, absorptive cells are denuded (HE, 1000X) (Dickson-Gonzalez et al., 2009)



# Amebiasis

## Eritrofagia

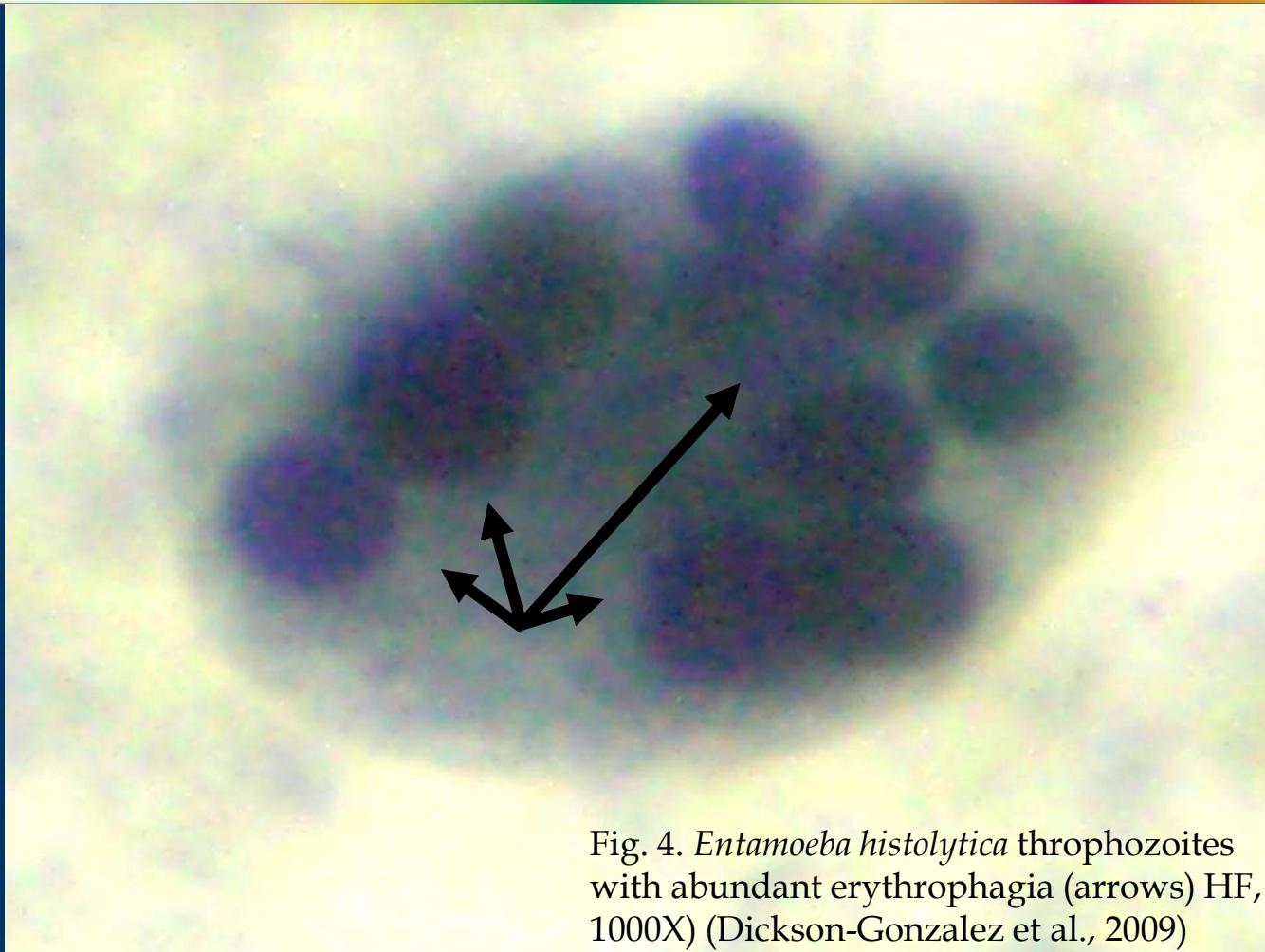
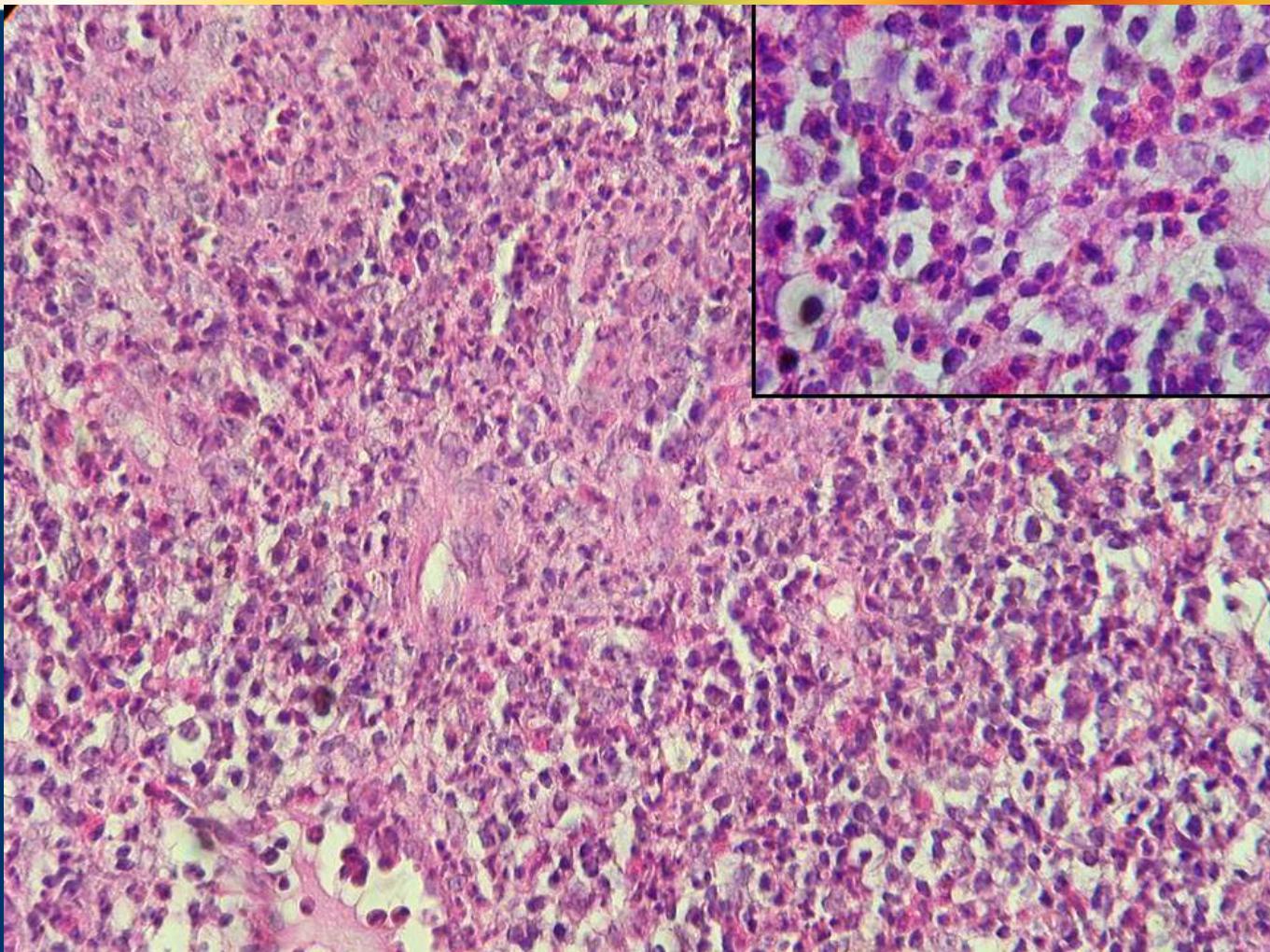


Fig. 4. *Entamoeba histolytica* trophozoites with abundant erythrophagia (arrows) HF, 1000X) (Dickson-Gonzalez et al., 2009)

# Amebiasis

## Enfermedad Intestinal (Invasiva)

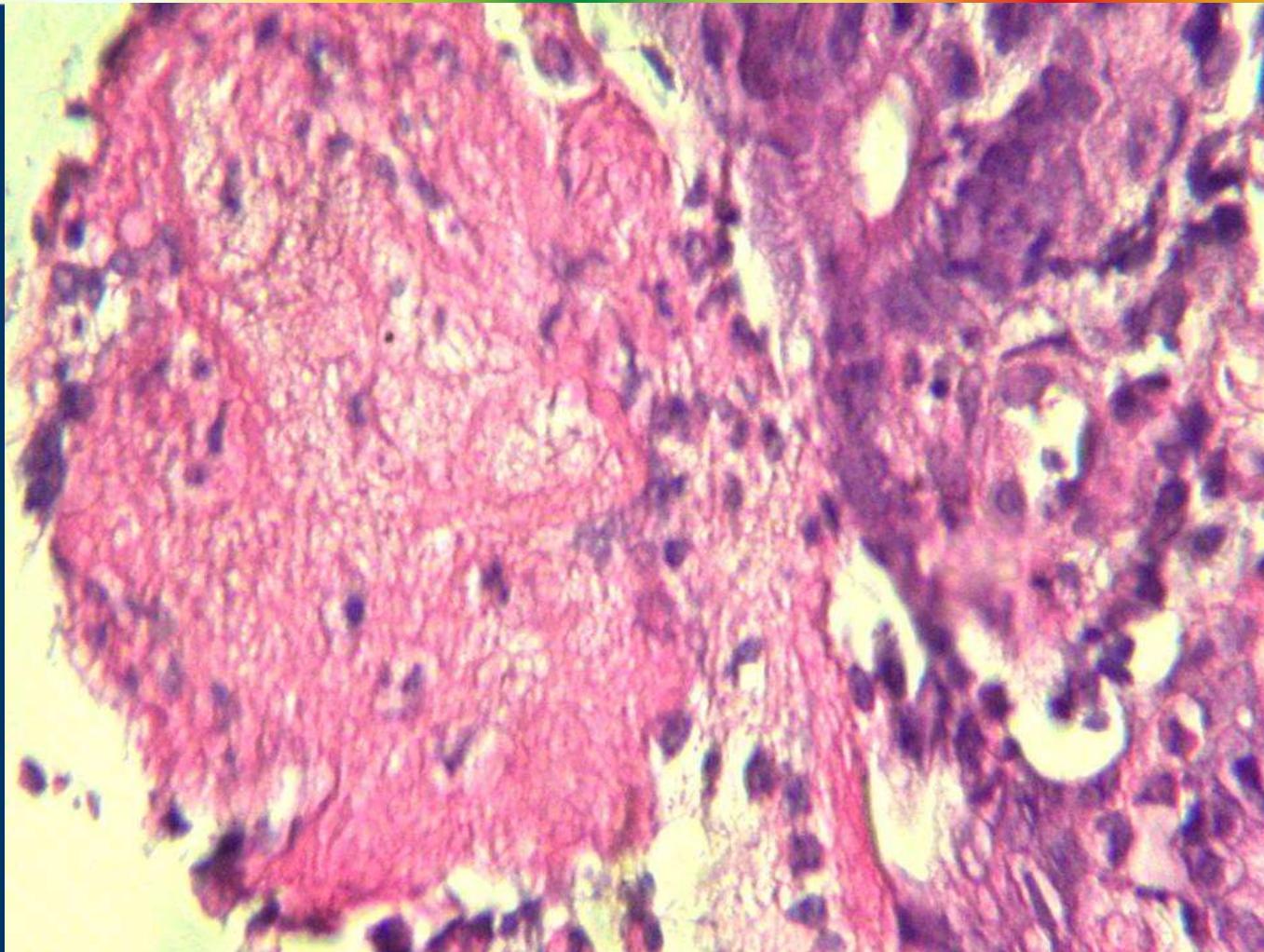
Fig. 7. Interglandular corion with abundant **inflammatory infiltrate rich in PMN and eosinophils** (HE, 400X, in the zooming 1000X) (Dickson-Gonzalez et al., 2009)



# Amebiasis

## Enfermedad Intestinal (Invasiva)

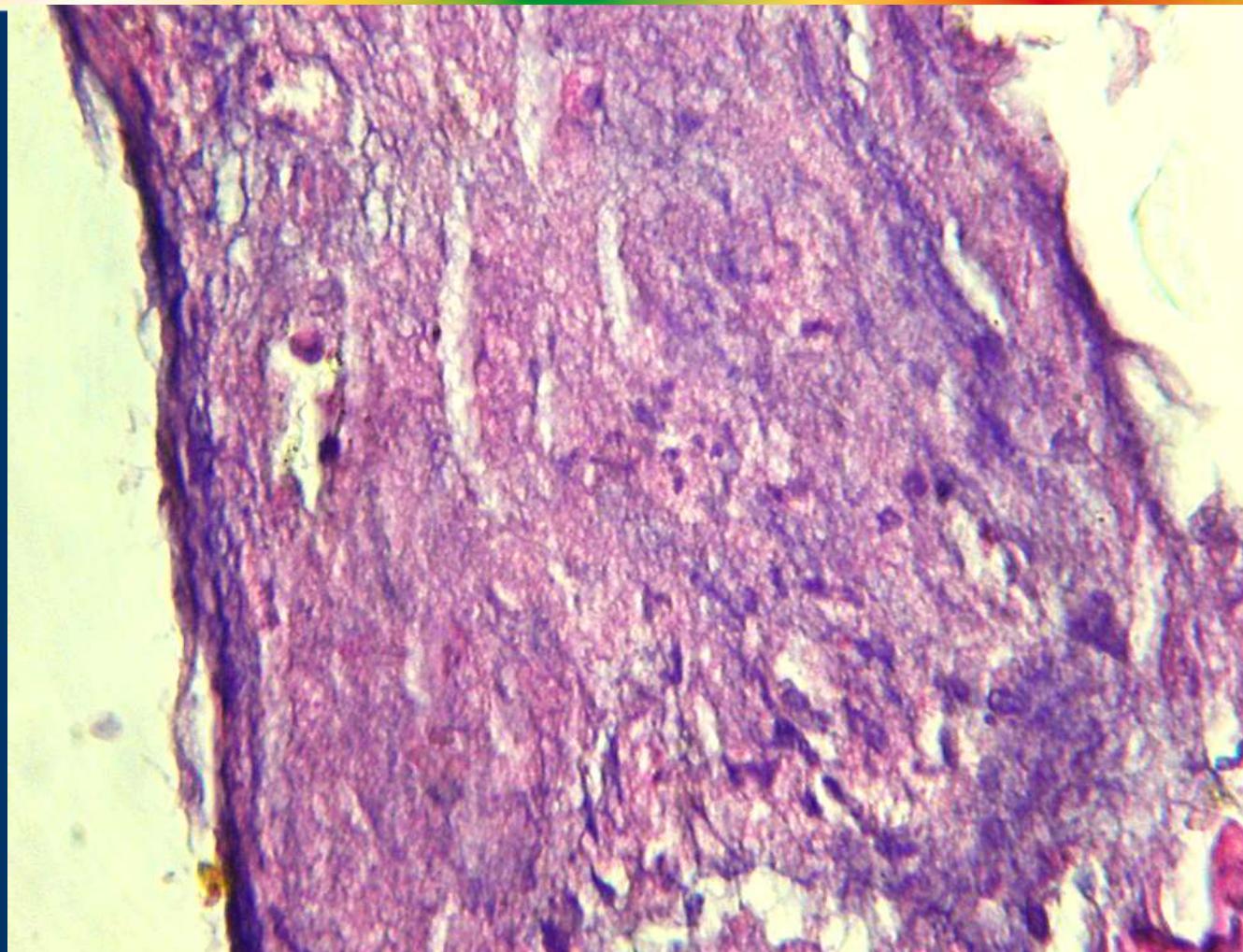
Fig. 8. Erosions of **colonic mucosa** with fibrinousleucocitary exudate in the surface (HE, 400X) (Dickson-Gonzalez et al., 2009)



# Amebiasis

## Enfermedad Intestinal (Invasiva)

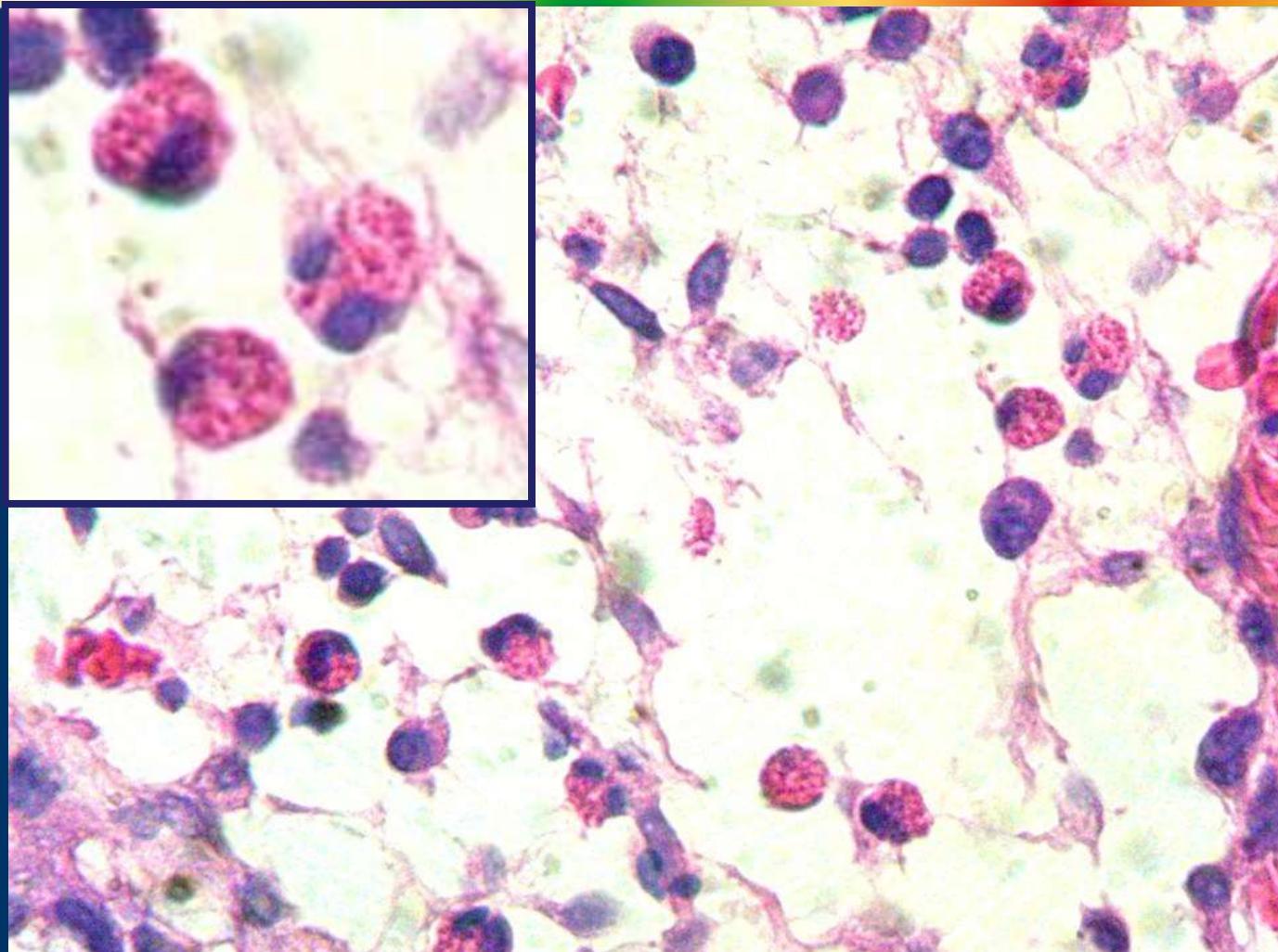
Fig. 9. **Necrotic** material and fibrinousleucocitary exudate (HE, 200X)  
(Dickson-Gonzalez et al., 2009)



# Amebiasis

## Enfermedad Intestinal (Invasiva)

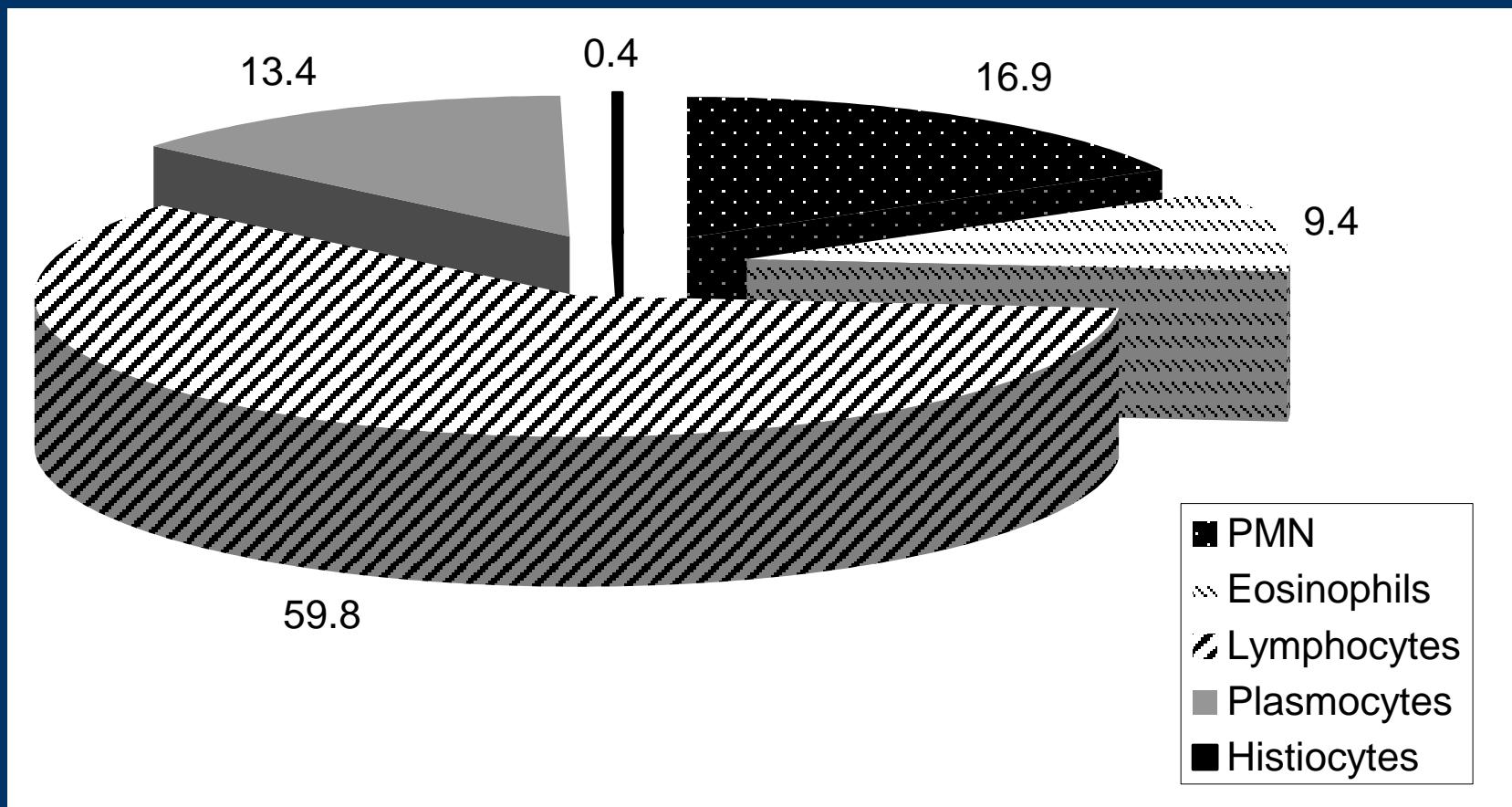
Fig. 10. **Abundant eosinophils and edema** in the interglandular corion (HE, 1000X) (Dickson-Gonzalez et al., 2009)



# Amebiasis

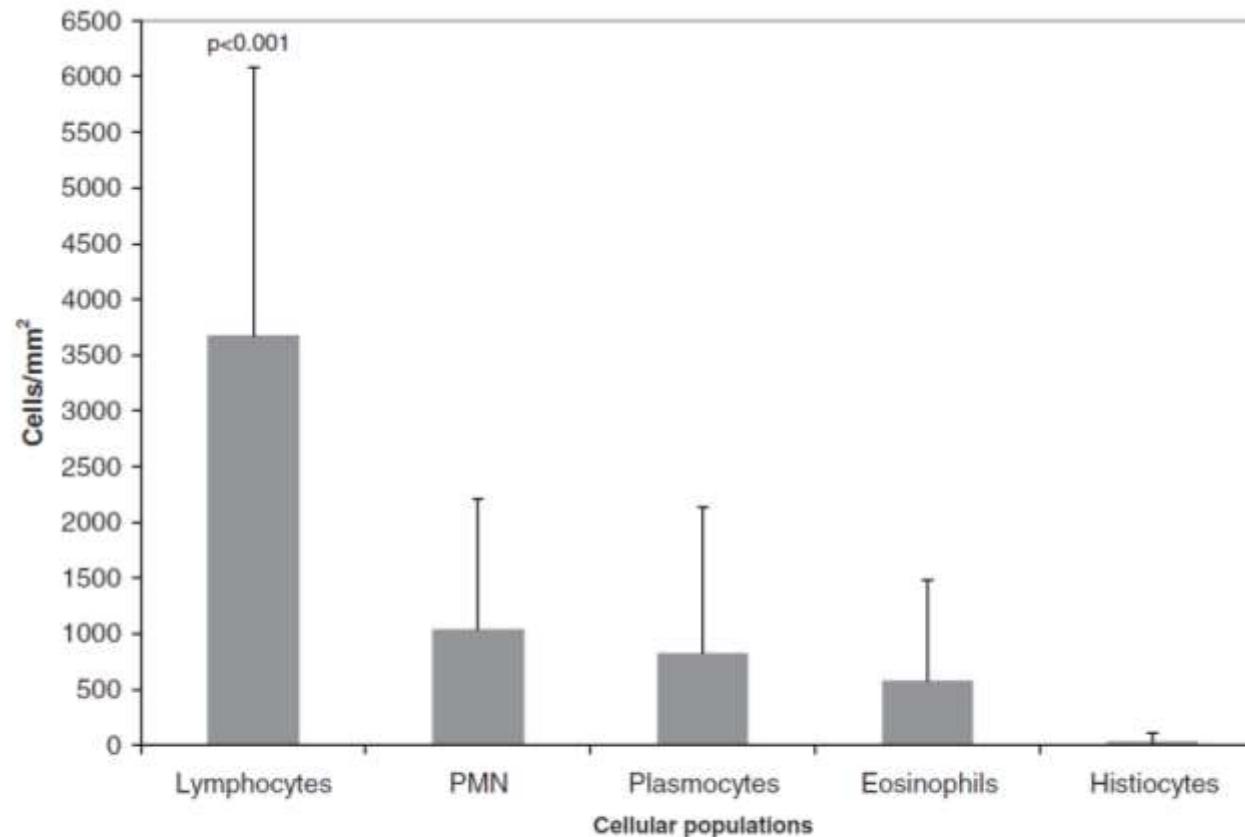
## Enfermedad Intestinal (Invasiva)

**FIG. 3.** Cellular population distribution (%) in intestinal lesions from patients with amebic colitis.



# Amebiasis

## Enfermedad Intestinal (Invasiva)

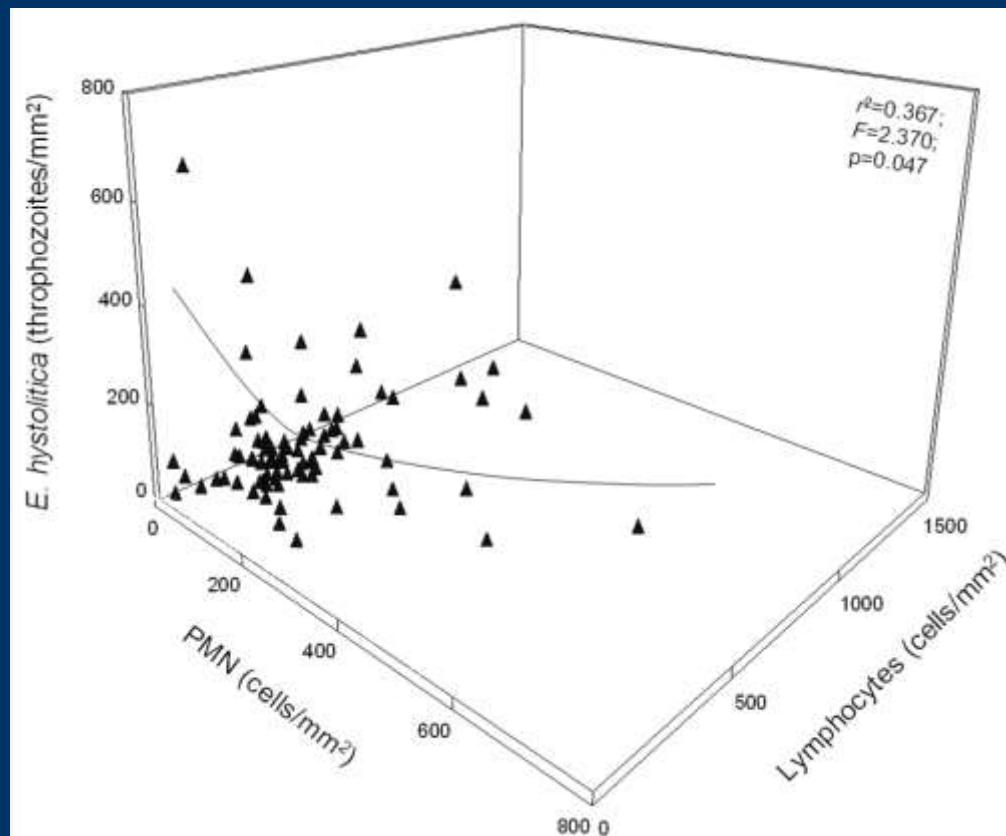


**FIG. 4.** Mean counts ( $\pm$  SD) of cellular populations in intestinal lesions from patients with amebic colitis.

# Amebiasis

## Enfermedad Intestinal (Invasiva)

**FIG. 5.** Relation between PMN counts (cells/mm<sup>2</sup>), lymphocyte counts (cells/mm<sup>2</sup>) and *Entamoeba histolytica* (throphozoites/mm<sup>2</sup>).



# Amebiasis

## Enfermedad Intestinal (Invasiva)

PMN AND TROPHOZOITES IN AMEBIC COLITIS

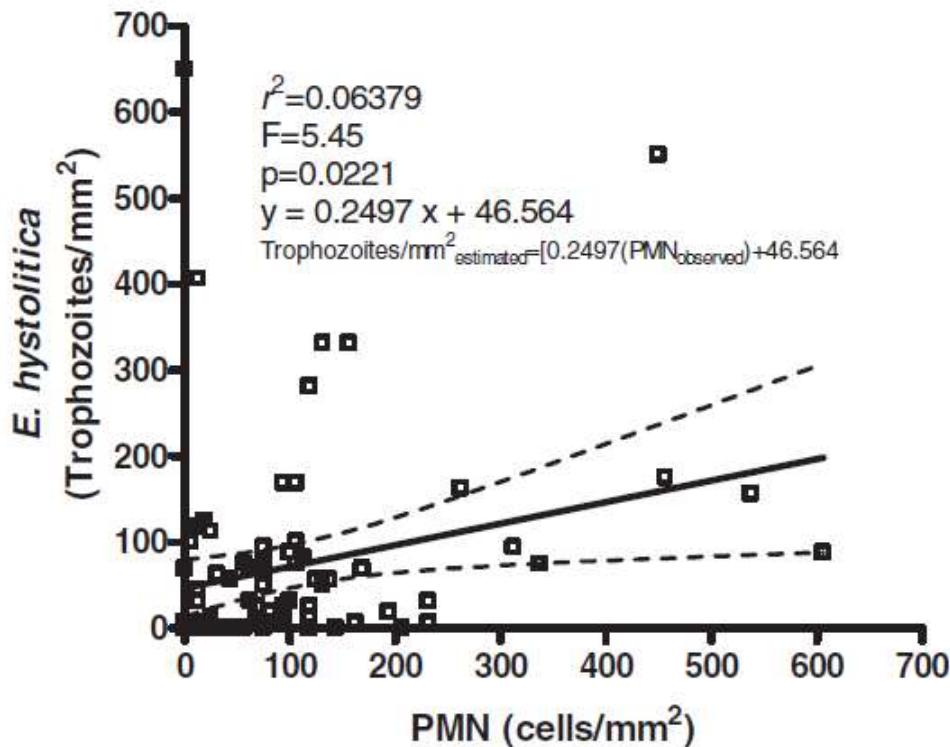
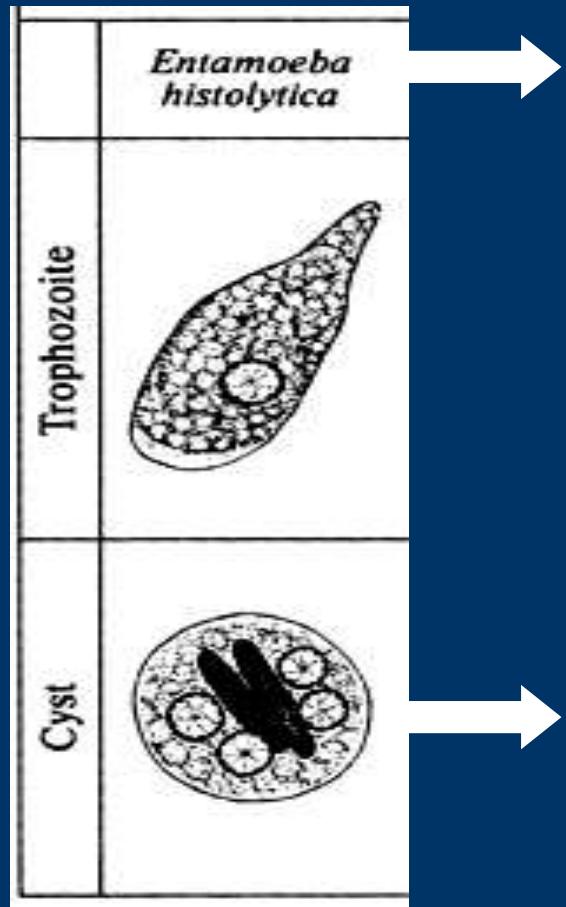


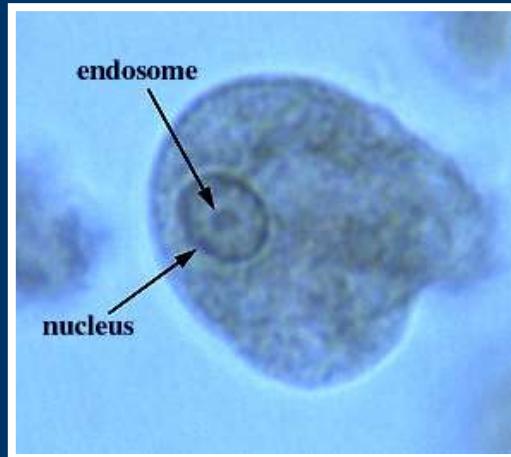
FIG. 6. Linear regression analysis of PMN counts (cells/mm<sup>2</sup>) and *E. histolytica* (trophozoites/mm<sup>2</sup>) in amebic colitis.

# Amebiasis

## Morfología



### Forma Proliferativa



Amorfo, 15- 50  $\mu\text{m}$ , fisión binaria, citoplasma: ectoplasma y endoplasma, pseudópodos, nucleo vesiculoso, cromatina periférica (ARN) + endosoma (ADN), conexiones fibrilares endosoma-cromatina periférica, cariosoma central, inclusiones intracelulares

### Forma Infectante



De 10  $\mu\text{m}$  a 20  $\mu\text{m}$ , forma redondeada, inmóvil, pared gruesa resistente (0,5  $\mu\text{m}$ )

# Trofozoitos de Amebas

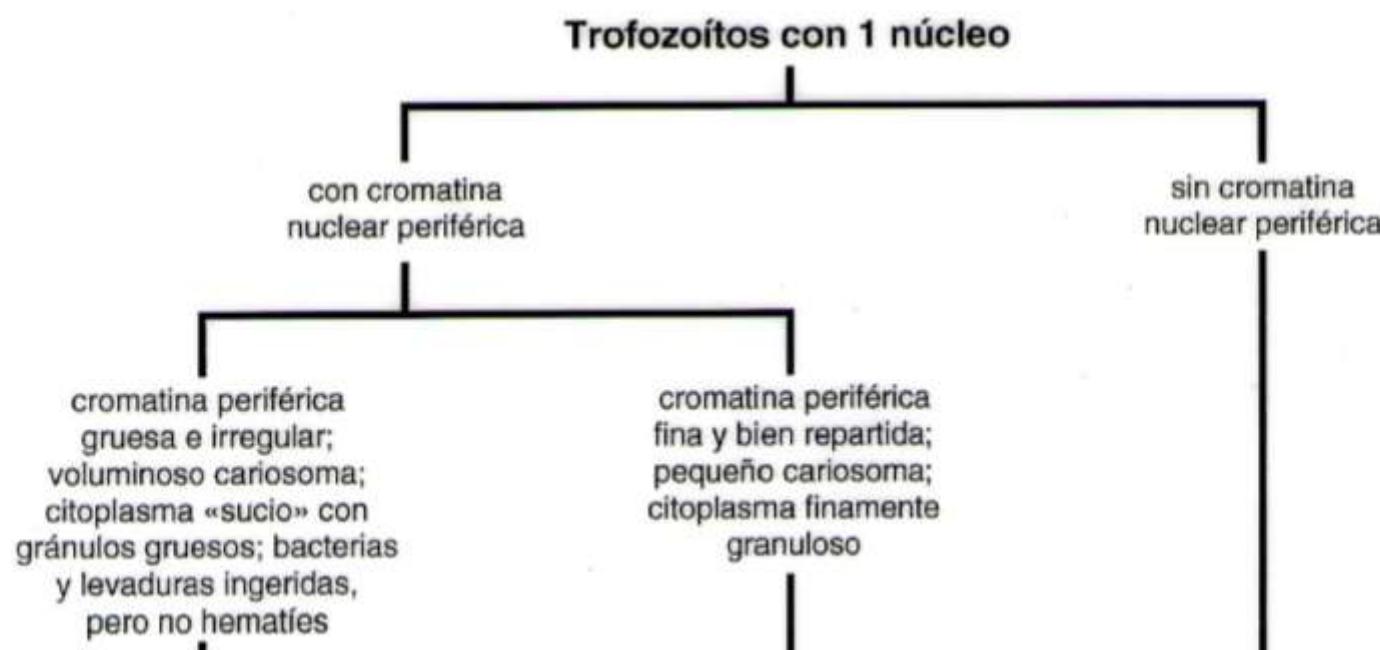
## Medios auxiliares para el diagnóstico de las parasitosis intestinales

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Lámina 6

### Clave para la identificación de trofozoitos amebianos en preparaciones teñidas



# Trofozoitos de Amebas

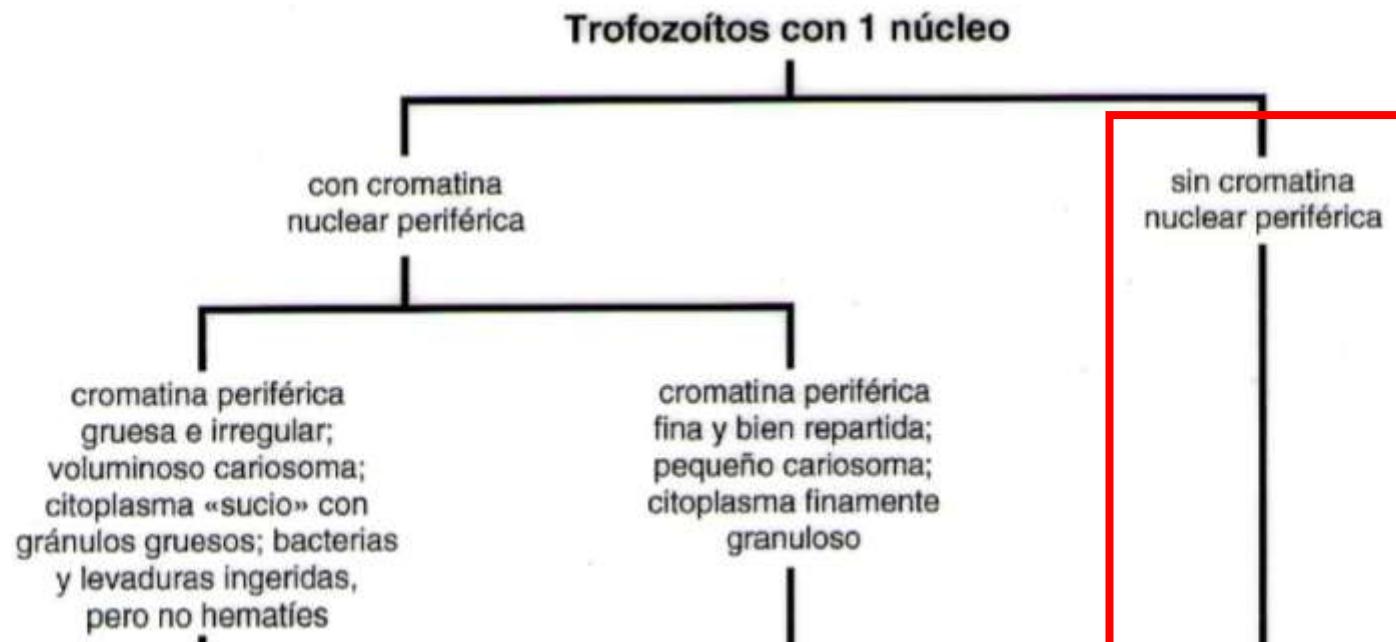
## Medios auxiliares para el diagnóstico de las parasitosis intestinales

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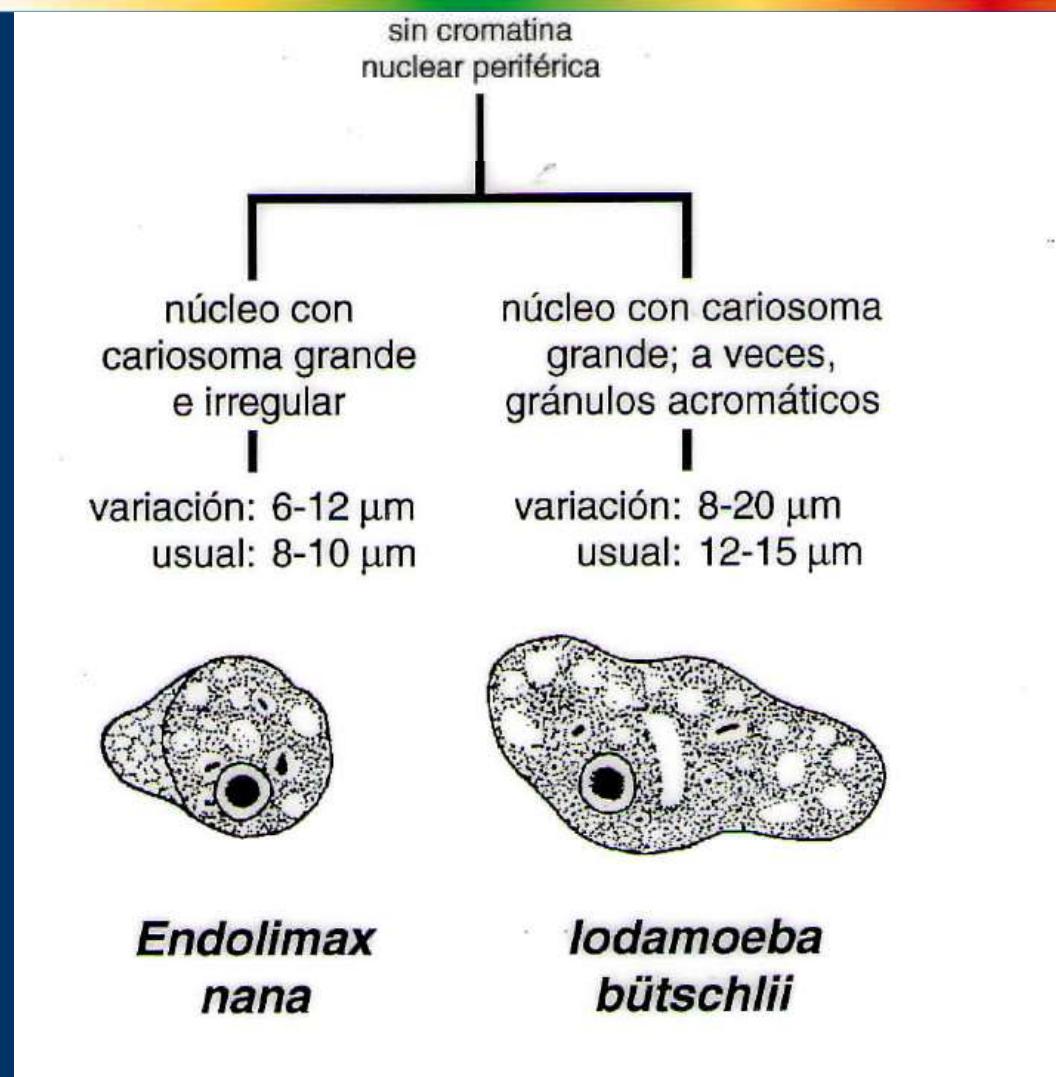


Lámina 6

### Clave para la identificación de trofozoitos amebianos en preparaciones teñidas



# Trofozoitos de Amebas



# Trofozoitos de Amebas

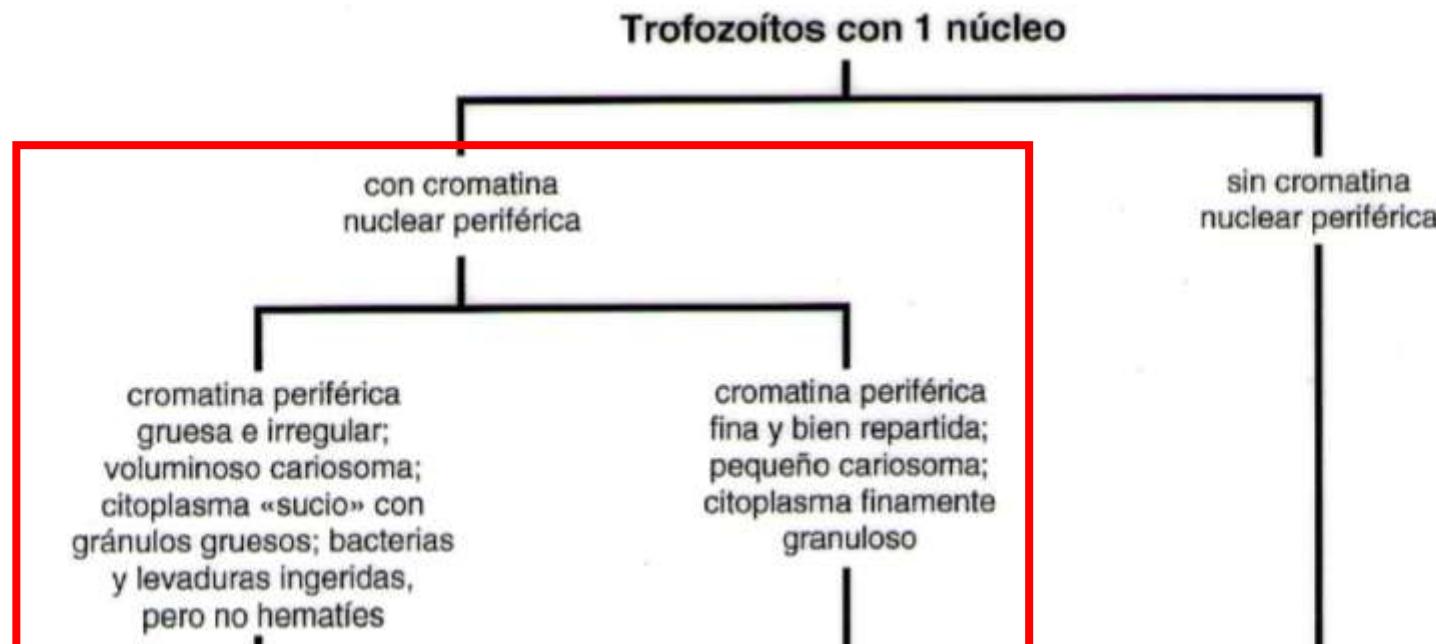
## Medios auxiliares para el diagnóstico de las parasitosis intestinales

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Lámina 6

### Clave para la identificación de trofozoitos amebianos en preparaciones teñidas



# Trofozoitos de Amebas

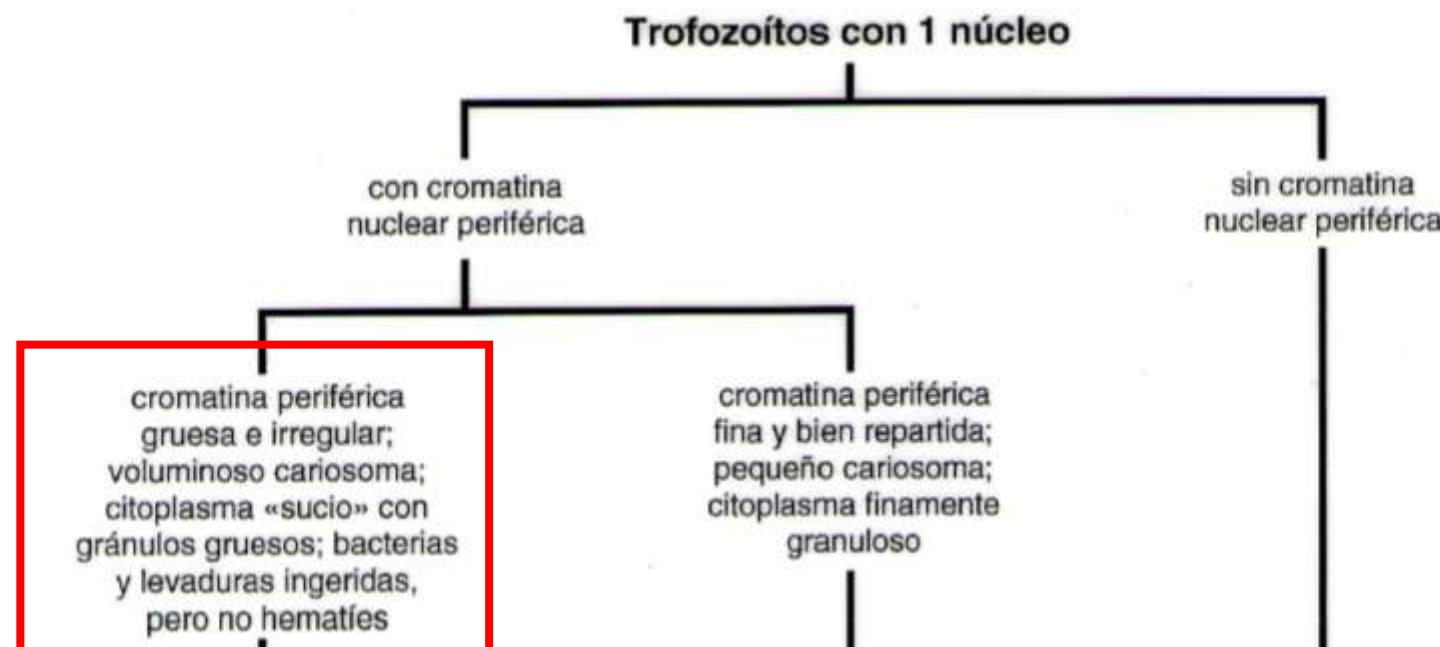
## Medios auxiliares para el diagnóstico de las parasitosis intestinales

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Lámina 6

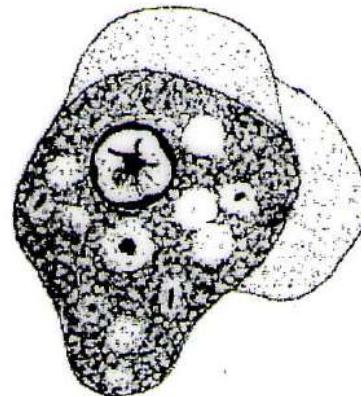
### Clave para la identificación de trofozoitos amebianos en preparaciones teñidas



# Trofozoitos de Amebas

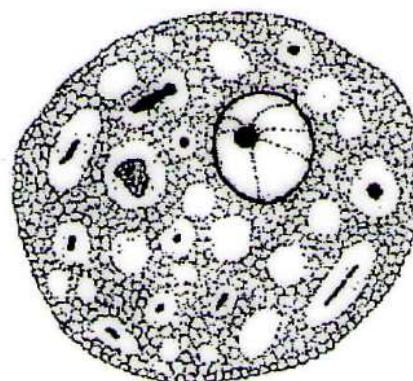
cromatina periférica  
gruesa e irregular;  
voluminoso cariosoma;  
citoplasma «sucio» con  
gránulos gruesos; bacterias  
y levaduras ingeridas,  
pero no hematíes

variación: 10-25 µm  
usual: 15-20 µm



*Entamoeba  
polecki*

variación: 15-50 µm  
usual: 20-25 µm



*Entamoeba  
coli*

# Trofozoitos de Amebas

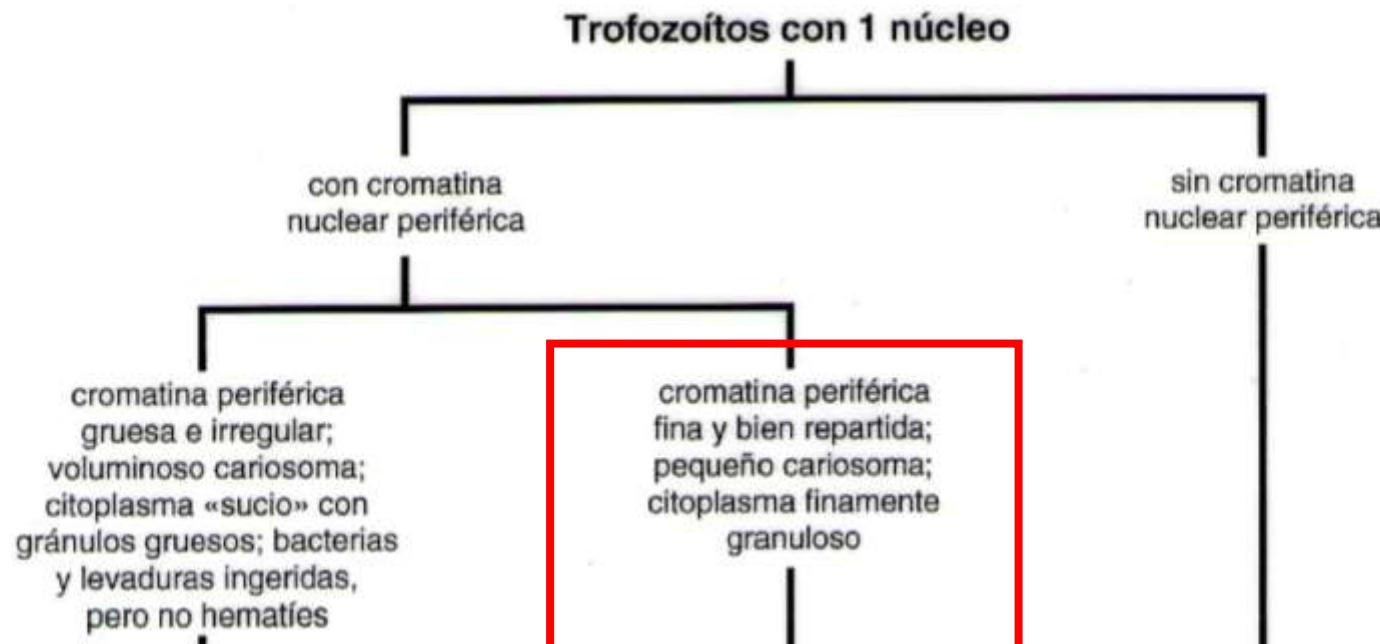
## Medios auxiliares para el diagnóstico de las parasitosis intestinales

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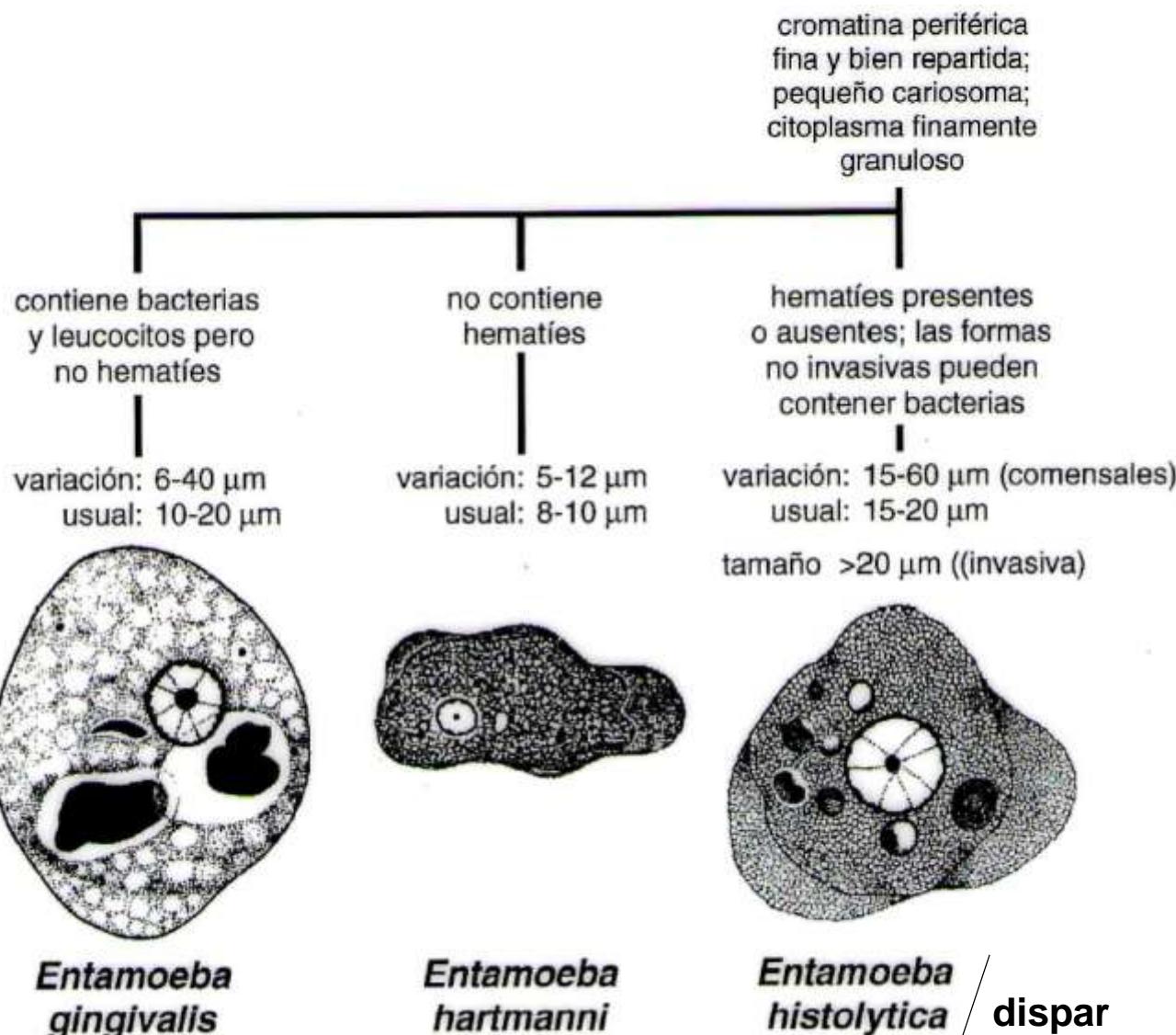


Lámina 6

### Clave para la identificación de trofozoitos amebianos en preparaciones teñidas



# Trofozoitos de Amebas



# Quistes y Trofozoitos de Amebas

## Medios auxiliares para el diagnóstico de las parasitosis intestinales

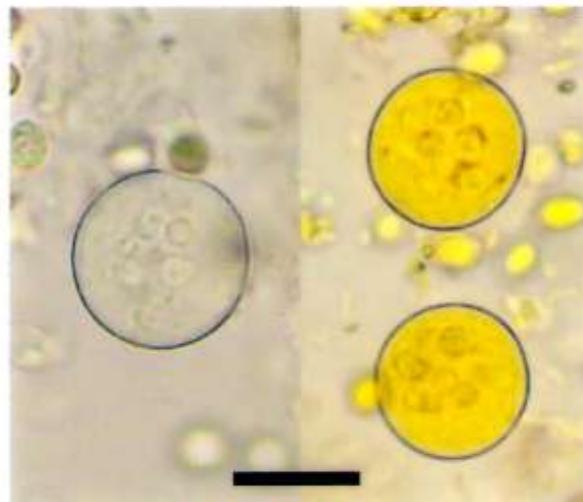
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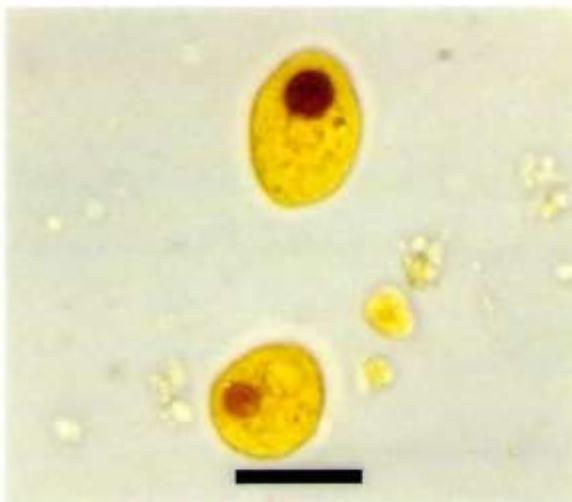
Lámina 6 – Protozoos

**Nota:** Todas las indicaciones de escala = 10 µm

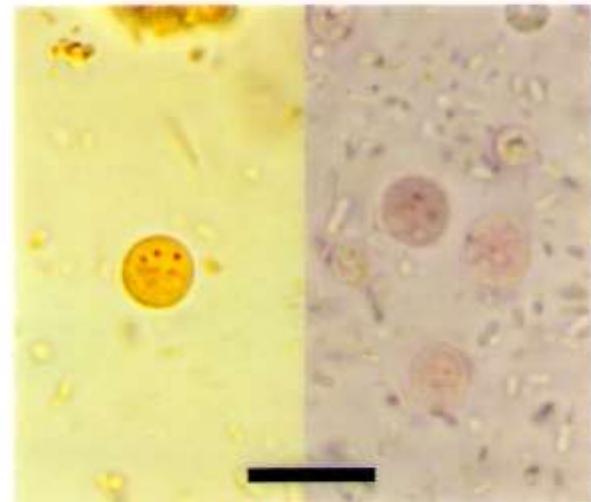
### Amebas comensales



Quistes maduros de *Entamoeba coli*. Izquierda: preparación en fresco con formol y sin teñir. Derecha: preparación en fresco teñida con yodo.

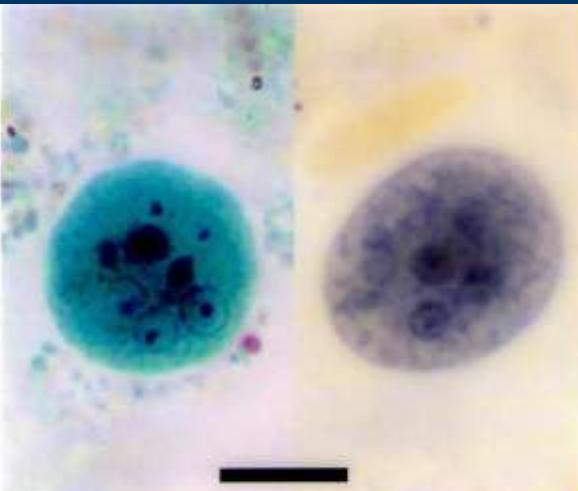


Quistes de *Iodamoeba butschilli* en una preparación en fresco yodada. Obsérvese en ambos la presencia de vacuolas de glucógeno teñidas de pardo; el núcleo no es visible, como es típico en estas preparaciones.

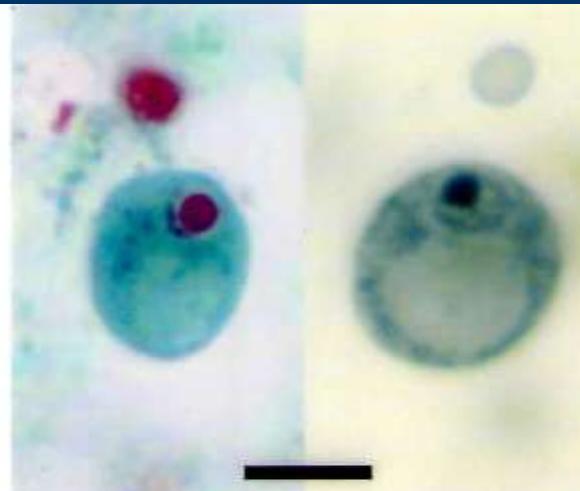


Quistes de *Endolimax nana* en preparaciones en fresco. Izquierda: quiste teñido con yodo en el que pueden verse tres de los cuatro núcleos. Derecha: tres quistes en MIF; obsérvense tres de los cuatro núcleos en el situado más arriba.

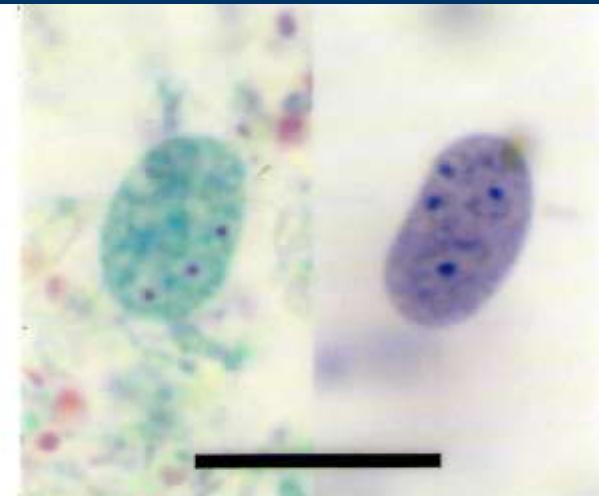
# Quistes y Trofozoitos de Amebas



Quistes maduros de *E. coli* con tinción tricrómica (izquierda) y con hematoxilina-hierro (derecha).

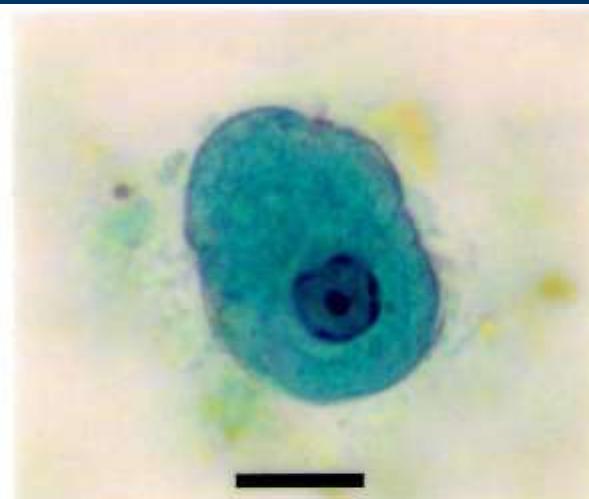


Quistes de *I. butschlii*. En el de la izquierda, teñido con tricrómica, la vacuola no se ve tan bien como en el de la derecha, teñido con hematoxilina-hierro; con estas técnicas de tinción se ve claramente el núcleo único con el voluminoso cariosoma.

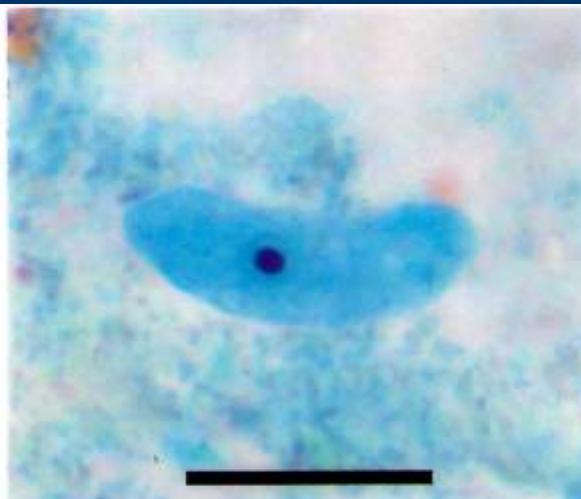


Quistes de *E. nana*. Izquierda: se ven tres de los cuatro núcleos; tinción tricrómica. Derecha: se ven los cuatro núcleos; hematoxilina-hierro.

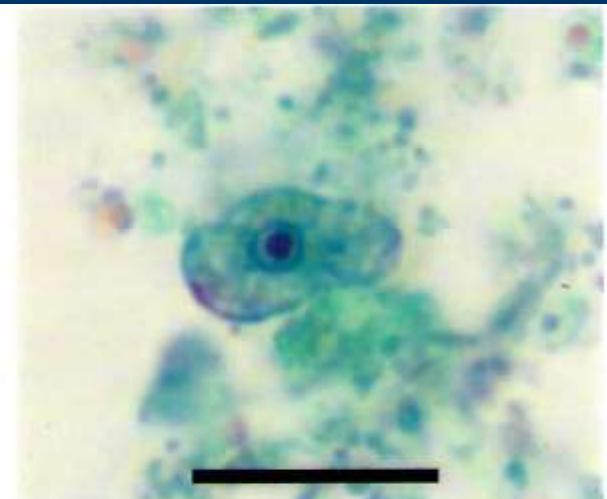
# Quistes y Trofozoitos de Amebas



Trofozoito de *E. coli*; tinción tricrómica. Obsérvese la irregularidad de la cromatina periférica en la membrana nuclear.

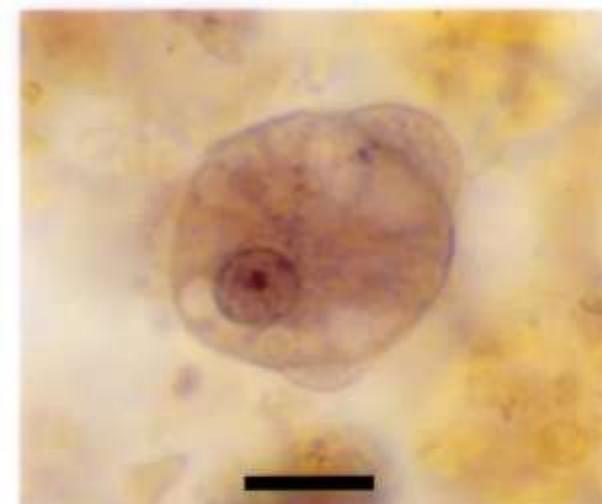


Trofozoito de *I. butschlii*; tinción tricrómica.

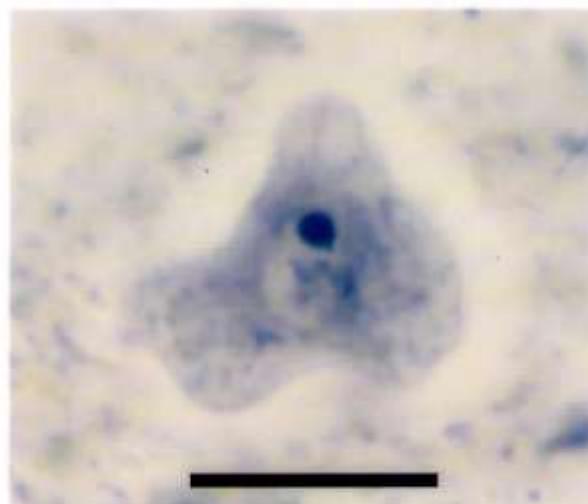


Trofozoito de *E. nana*; tinción tricrómica. El pequeño tamaño del microorganismo y el voluminoso cariosoma que casi rellena el núcleo (carente de cromatina periférica) permiten establecer el diagnóstico.

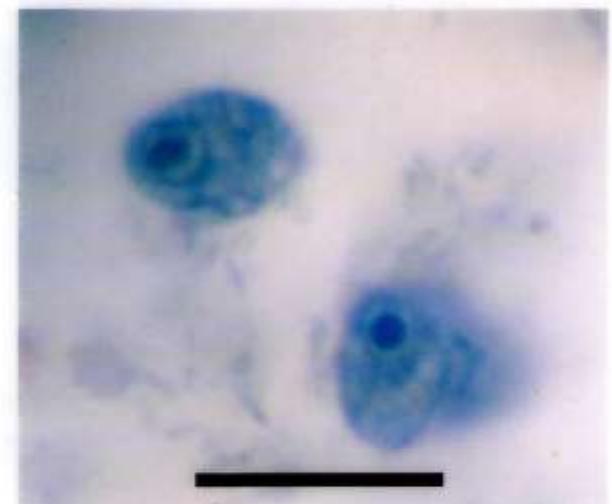
# Quistes y Trofozoitos de Amebas



Trofozoito de *E. coli*; hematoxilina-hierro. Obsérvese el voluminoso cariosoma excéntrico en el núcleo.



Trofozoito de *I. butschilli*; hematoxilina-hierro.



Trofozoito de *E. nana*; hematoxilina-hierro.

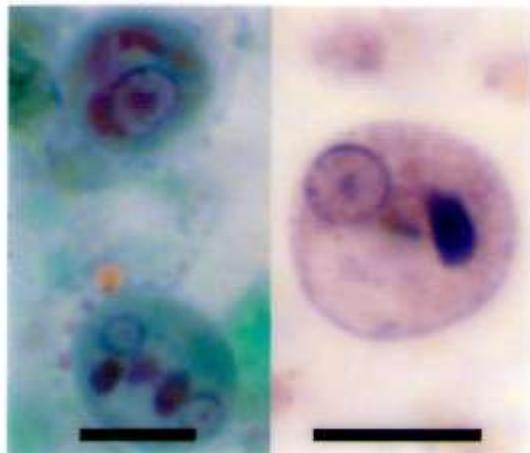
# Quistes y Trofozoitos de *E. histolytica*



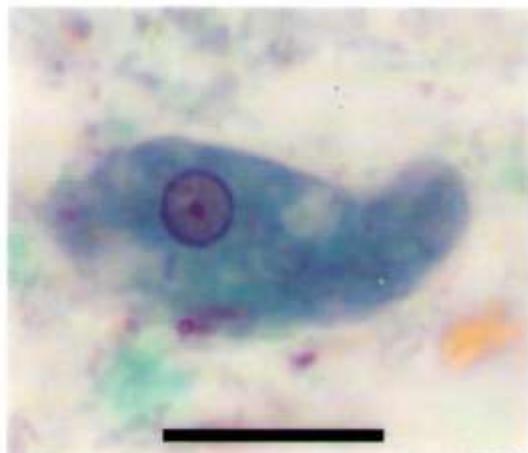
Izquierda: quiste binucleado de *E. histolytica* en una preparación de MIF en fresco; entre los núcleos se observa una gran vacuola de glucógeno. Derecha: quiste maduro de *E. histolytica* en una preparación en fresco yodada; se observan tres de los cuatro núcleos.



Trofozoito vivo de *E. histolytica* con numerosos hematies en su interior; preparación en fresco sin tefir.



Izquierda: quiste mononucleado (arriba) y quiste binucleado de *E. histolytica*, cada uno de ellos con vacuola de glucógeno y corpúsculos cromatoides; tinción tricrómica. Derecha: quiste mononucleado de *E. histolytica* con corpúsculos cromatoides; hematoxilina-hierro.



Trofozoito de *E. histolytica*; tinción tricrómica.

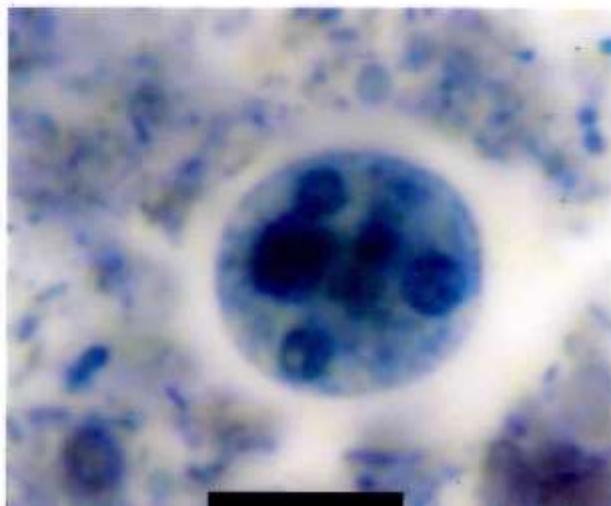
# Quistes y Trofozoitos de *E. histolytica*



Quiste maduro de *E. histolytica* con cuatro núcleos y corpúsculos cromatoideos; tinción tricrómica.

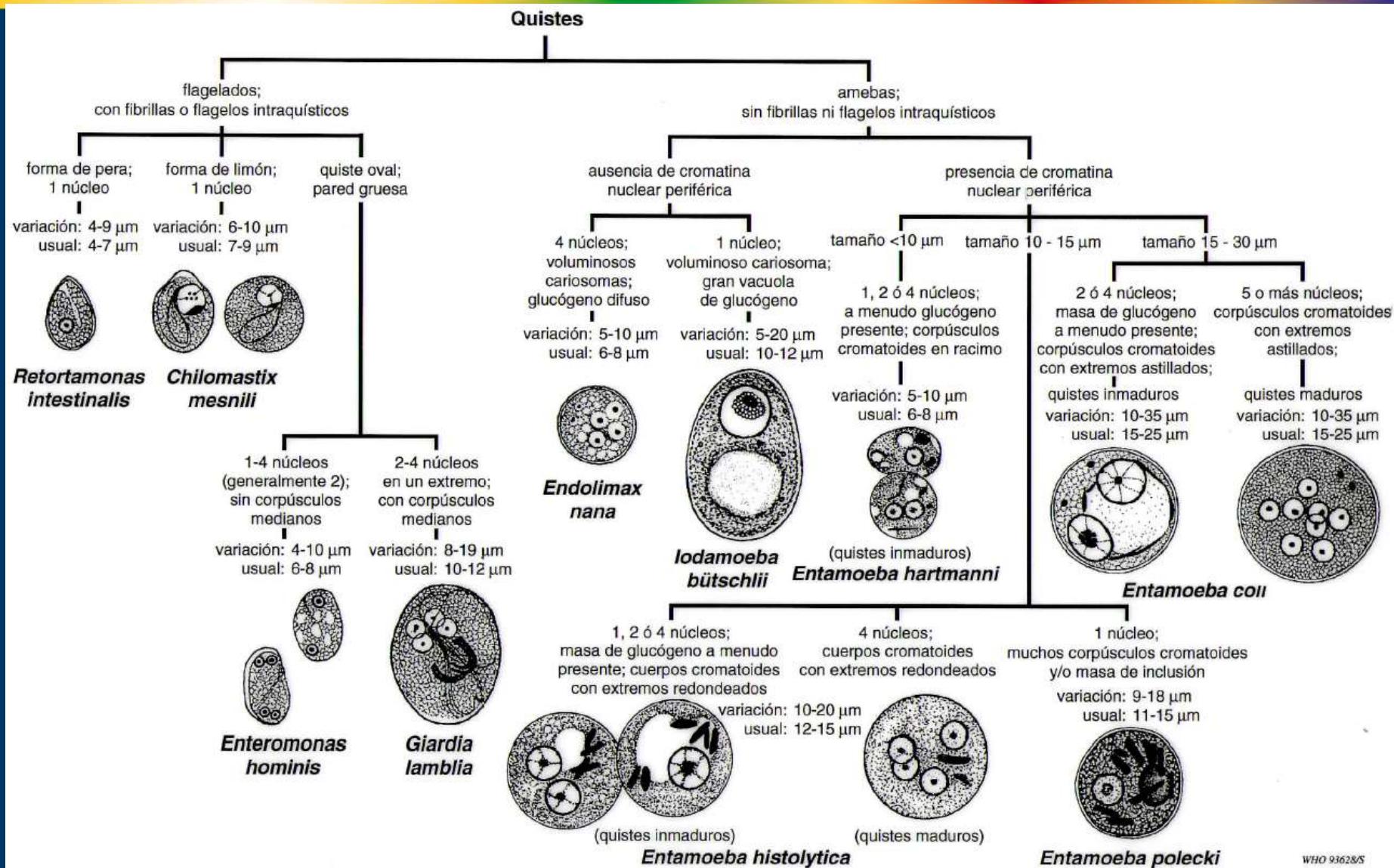


Trofozoito de *E. histolytica* con hematíes ingeridos teñidos de rojo; núcleo visible en el borde inferior; tinción tricrómica.



# Quistes de Amebas

OMS 1994



# Amebiasis

## Comparación de morfología y otros aspectos

TABLE 1. Morphologic features and pathogenicity of intestinal amebae<sup>a</sup>

Characteristics	<i>E. histolytica</i> , <i>E. dispar</i> and <i>E. moshkovskii</i> <sup>b</sup>	<i>E. hartmanni</i>	<i>E. coli</i>	<i>E. polecki</i>	<i>D. fragilis</i> <sup>c</sup>	<i>E. nana</i>	<i>L. bütschlii</i>
Trophozoites (size, nucleus, and move- ment)	15–20 µm; 1 nucleus; actively motile cytoplas- mic protrusions, quickly finger shaped pseudopo- dium	8–10 µm; 1 nucleus; nonsuccessive	20–25 µm; 1 nucleus; slow movement, short and blunt pseudo- podium	15–20 µm; 1 nu- cleus; motility resembles <i>E. coli</i>	7–12 µm; mono- and binucleate; pseudo- poodium hyaline broad leaflike ser- rated margins suc- cessive motility	7–9 µm; 1 nucleus, blunt and hyaline pseudoodium, slow movements	9–14 µm; 1 nucleus, slow movement, nonsuccessive, hyaline pseudo- podium
Cysts (size, nucleus)	12–15 µm; mature cyst has 4 nuclei, immature cyst has 1 or 2 nuclei	6–8 µm; mature cyst has 4 nuclei; immatu- re cyst has 1 or 2 nuclei; 2 nucleated cysts very common	15–25 µm; mature cyst has 8 nuclei, rarely 16 or more nuclei	10–15 µm; 1 nu- cleus, very rarely binucleate or quadrinucleate	No cyst stage	6–8 µm; 4 nuclei	10–12 µm; 1 nucleus
Appearance of trophozoites	Stained trophozoites fine, uniform granules of pe- ripheral chromatin, and small central karyosome in nucleus; ingested RBC ( <i>E. dispar</i> and <i>E. mosh- kovskii</i> are similar to <i>E. histolytica</i> trophozoites, sometimes ingested RBCs)	Nuclear structure similar to <i>E. histo- lytica</i> ; ingested bac- teria; cytoplasm finely granular	Nuclear with irreg- ular cluster of peripheral chro- matin; large, irregular, eccen- tric karyosome	Nucleus with minute central karyosome, with fine granules of peripheral chro- matin, finely granular cyto- plasm; ingested bacteria	High percentage of binucleate tropho- zoites; nuclei without peripheral chromatin	Nucleus with large karyosome; no peripheral chro- matin	Large central karyosome, gran- ular cytoplasm
Appearance of cysts	Uniform size in having both karyosome and peripheral chromatin, typical nuclear structure, chromatodial bars with squared or rounded ends	Typical nuclear struc- ture, chromatodial bars with rounded or squared ends	Typical nuclear structure, sliver- shaped or irregu- lar chromatoids	Mononucleate; large central karyosome; in- clusion masses, chromatoid bars with pointed or angular ends	No cyst stage	Chromatin, 4 nuclei with large karyo- somes and no peripheral chro- matin	Large karyosome, eccentric refrac- tile granules (basket nucleus), large compact glycogen, no peripheral chro- matin
Pathogenicity	Pathogen ( <i>E. dispar</i> and <i>E. moshkovskii</i> are non- pathogens)	Nonpathogen	Nonpathogen	Nonpathogen	Nonpathogen	Nonpathogen	Nonpathogen

<sup>a</sup> Data from references 40, 64, 65, 80, and 116.

<sup>b</sup> *E. moshkovskii* is present in free-living protozoa.

<sup>c</sup> *D. fragilis* is a flagellate but resembles organisms within the amebae.

# Amebiasis

Infección por *Entamoeba histolytica* (CIE-10 A06, A061-A069)

## A06

### Amibiasis

**Incluye:** Infecciones debido a *Entamoeba histolytica*

**Excluye:** otras enfermedades intestinales por protozoarios ( [A07.-](#) )

#### A06.0

### Disentería amebiana aguda

Amibiasis aguda

Amebiasis intestinal (NOS)

#### A06.1

### Amibiasis intestinal crónica

#### A06.2

### Colitis amebiana no disentérica

#### A06.3

### Ameboma de intestino

Ameboma (NOS)

#### A06.4

### Absceso amebiano hepático

Amibiasis hepática

#### A06.5+

### Absceso amebiano pulmonar ( [J99.8\\*](#) )

Absceso amebiano pulmonar (e hígado)

#### A06.6+

### Absceso amebiano cerebral ( [G07\\*](#) )

Absceso amebiano cerebral (e hígado)(y pulmón)

#### A06.7

### Amebiasis cutánea

#### A06.8

### Infección amebiana en otros sitios

- apendicitis

- balanitis+ ( [N51.2\\*](#) )

#### A06.9

### Amibiasis, inespecífica.

# Amebiasis

Infección por *Entamoeba histolytica* (CIE-10 A06)

- Aspectos generales de la amebiasis

- La amebiasis es una enfermedad que puede cursar desde formas asintomáticas hasta formas severas invasivas con compromiso de órganos y sistemáticas que pueden comprometer la vida del paciente
- Amebiasis hepática – absceso hepático amebiano
- Amebiasis pulmonar
- Amebiasis cerebral o encefálica (SNC)
- Amebiasis cutánea
- Amebiasis anal/peneana (HSH con o sin VIH+)
- Quiste es infeccioso (resistente al medio)
- Trofozoito, frágil, es patógeno
- Amebiasis intestinal
  - Disentería aguda o fulminante (disentería amebiana)
  - Fiebre, escalofríos y diarrea sanguinolenta o mucoide
  - Ligero malestar abdominal con diarrea con sangre y moco
  - Estreñimiento o constipación alternante
- Respuesta inmune
  - Granulomas amebianos (amebomas)
- Diagnóstico diferencial de las colitis amebianas



AJRM



AJRM

# Amebiasis

## Diagnósticos Diferenciales

Differential diagnoses of amebiasis

Infectious	Non-infectious
Abdominal Abscess	Arteriovenous Malformations
<i>Campylobacter</i> Infections	Diverticulitis
Cholecystitis	Hepatocellular Adenoma
Echinococcosis	Inflammatory Bowel Disease
<i>Escherichia coli</i> Infections	Ischemic Colitis
Hepatitis A	Perforated abdominal viscus
Other Viral Hepatitis	
Pericarditis	
Peritonitis	
Pyogenic Hepatic Abscesses	
Right lower lobe pneumonia	
Salmonellosis	
Shigellosis	

Table 1. Differential diagnoses of amebiasis

# Amebiasis

Infección por *Entamoeba histolytica* (CIE-10 A06)

- Patología la amebiasis intestinal (lesiones en cuello de botella o en botón de camisa)

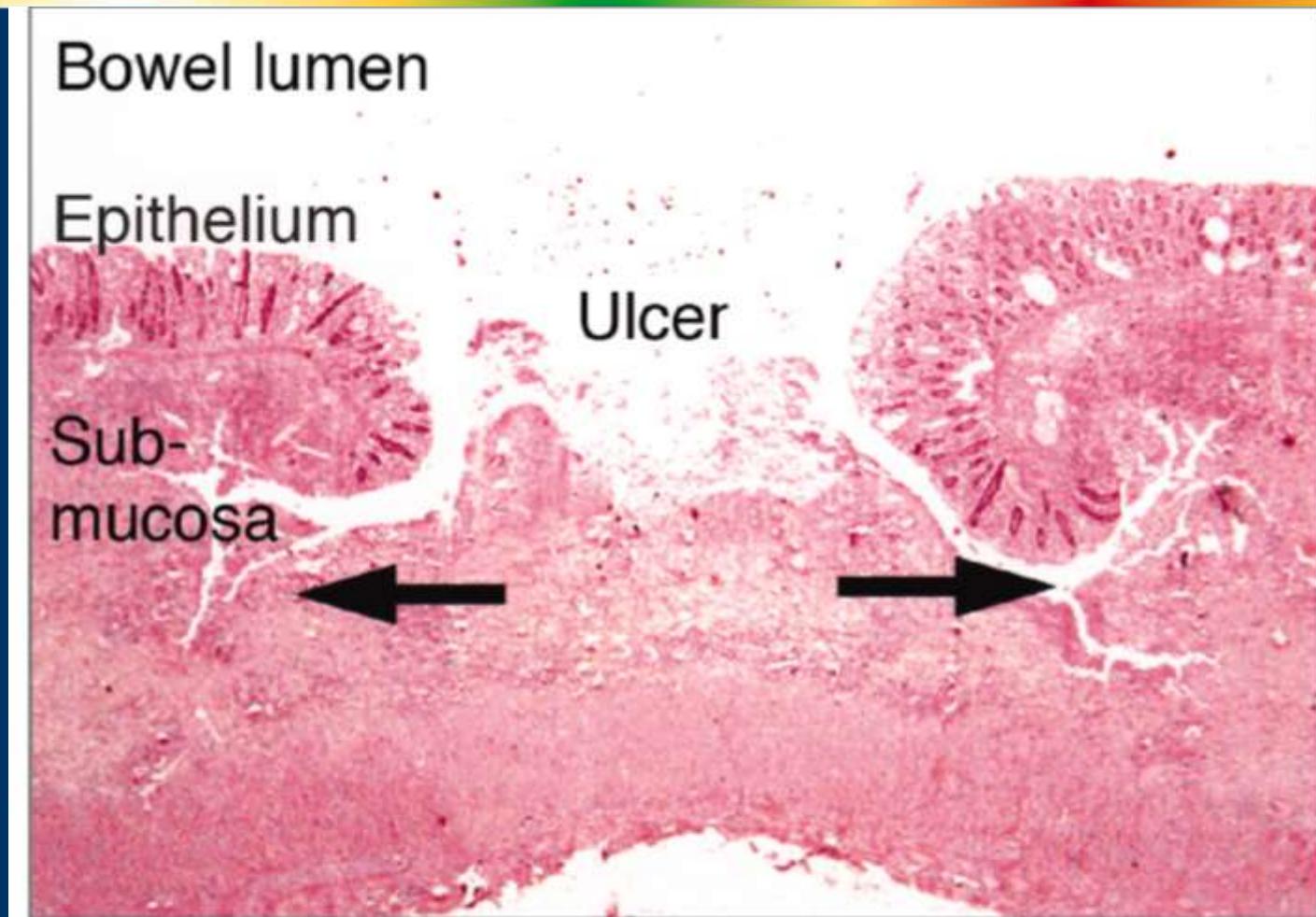


Fig. 3. "Flask-shaped" ulcer of invasive intestinal amebiasis (hematoxylin-eosin, original magnification  $\times 50$ ). Source: Pritt B S , Clark C G Mayo Clin Proc. 2008;83:1154-1160: Mayo Clinic Proceedings

# Amebiasis

Infección por *Entamoeba histolytica* (CIE-10 A06)

- Aspectos generales de la amebiasis

- En la amebiasis hepática puede haber compromiso de la función hepática
- Alteración de la bilirrubina (con o sin ictericia)
- Alteración de las transaminasas (TGO y TGP) y FA
- Formación de abscesos

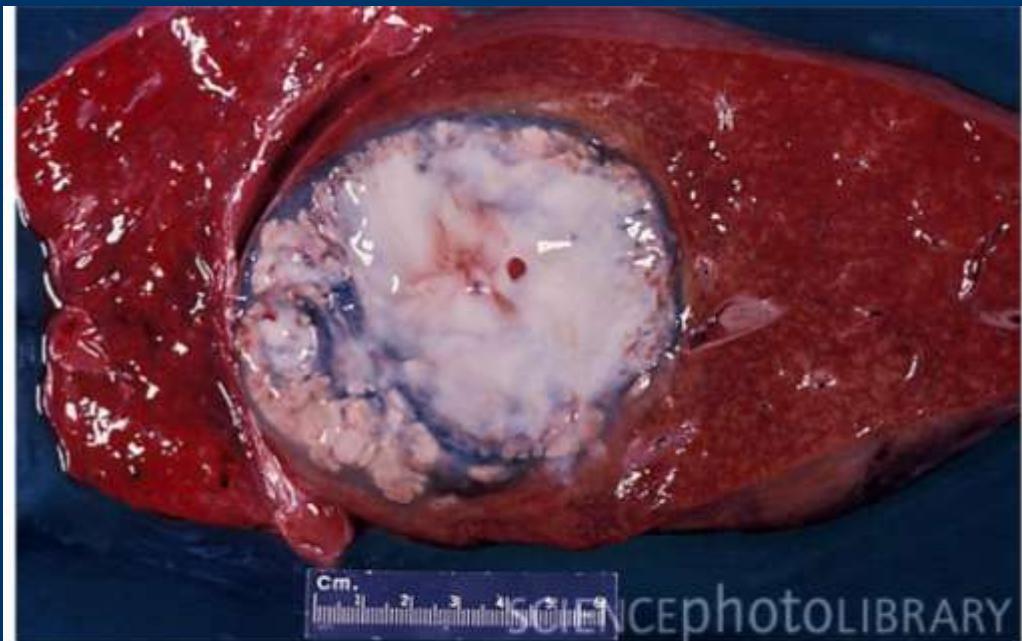


Fig. 4. Amoebic Liver abscess. Gross specimen of liver tissue with an abscess (white) that formed due to infection of the organ with *Entamoeba histolytica*. Source: <http://www.sciencephoto.com/media/250248/enlarge>



FIGURE 2. Computed tomography showing abscess in right lobe with damaged right hepatic vein.

TABLE 1  
Clinical features and investigations of patients with amoebic liver abscess\*

Parameter	Number (N = 12)
Clinical features	
Age (years)	41.3 ± 9.2
Sex (male/female)	11:1
Duration of illness (days)	13.8 ± 6.57
Abdominal pain	9 (75)
Fever	12 (100)
Jaundice	12 (100)
Anorexia	6 (50)
Investigations	
Total leukocyte count (cells/mm <sup>3</sup> )	13608 ± 4931
Serum bilirubin (mg/dL)	8.7 ± 5.1
Serum glutamic oxaloacetic transaminase (U/L)	43.0 ± 25.7
Serum glutamate pyruvate transaminase (U/L)	38.7 ± 16.6
Alkaline phosphatase (KA units)	35.6 ± 18.3
Size of abscess (cm)	11.0 ± 1.8

\* Data are mean ± SD; figures in parentheses are percentages.

# Amebiasis

**Hx:** subacute febrile illness, right upper quadrant abdominal pain, weight loss

**Epi:** immigrants or residents in endemic areas of Asia, Africa & Latin America

**PE:** fever, pallor, exquisite point tenderness over the liver, dullness & rales at the right lung base

**Lab/Xray:** anemia, ↑WBC, ↑Alk. P.  
U/S: Abscess right lobe liver.  
CXR: elevated R diaphragm.  
*E. histolytica* IgG (+).

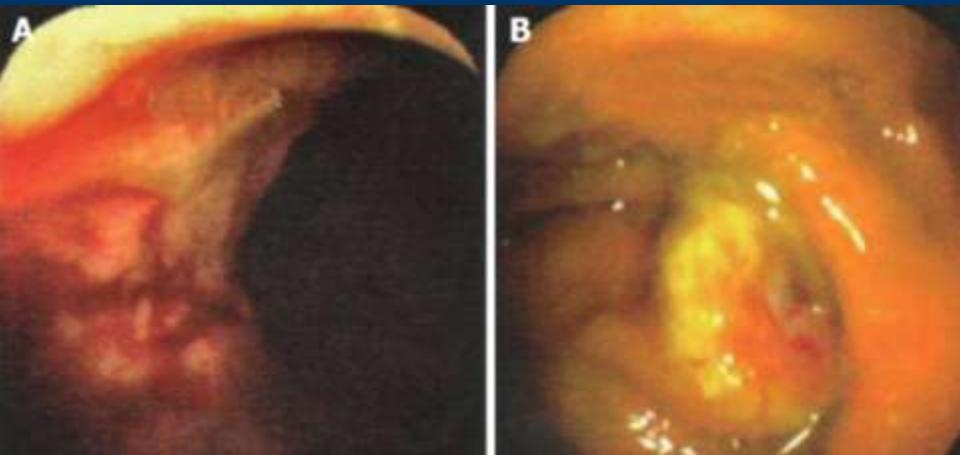
**Rx:** Metronidazole or tinidazole plus diloxanide furoate or paromomycin.  
Drainage if  $> 10$  cm



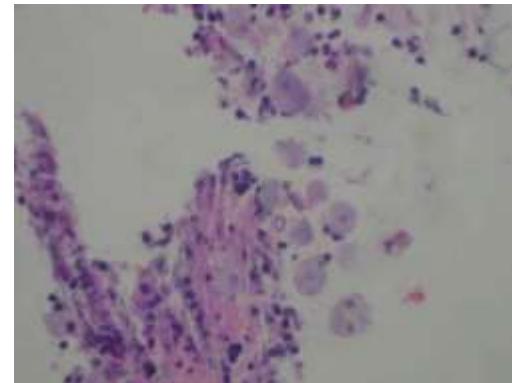
# Amebiasis

Infección por *Entamoeba histolytica* (CIE-10 A06)

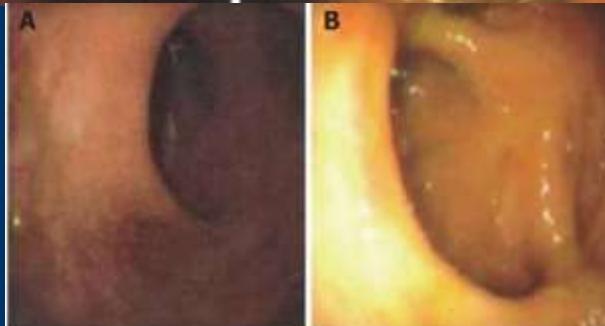
- Aspectos generales de la amebiasis
  - Las lesiones pueden confundirse con tumores malignos del tracto intestinal



**Figure 1** Endoscopy demonstrating ulcerated rectal (A) and cecal (B) lesions suggestive of carcinoma.



**Figure 2** High-powered magnification of a hematoxylin-eosin preparation of a colonic biopsy that demonstrates trophozoites of *E. histolytica*.



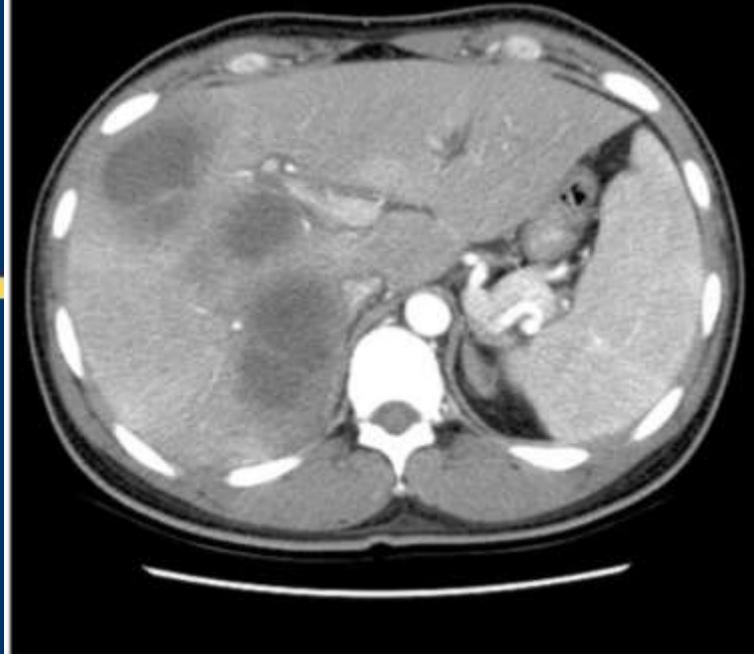
**Figure 3** Follow-up colonoscopy subsequent to a completed course of antibiotic therapy, which demonstrates complete resolution of rectal and cecal lesions, with normal appearing colonic mucosa.

# Amebiasis

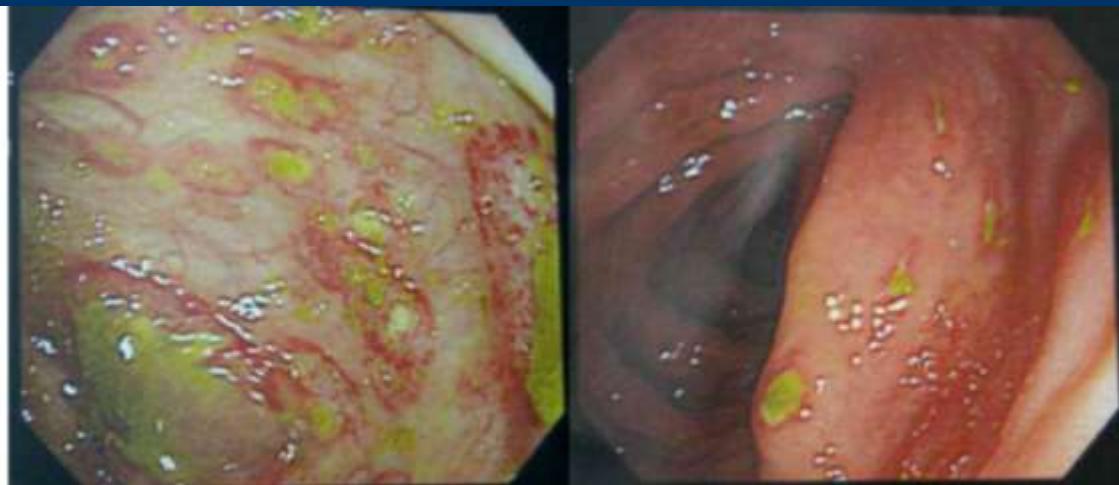
Infección por *Entamoeba histolytica*

- Aspectos generales de la amebiasis
  - La localización en un órgano no excluye la presencia en otros órganos

Hung C-C, Ji D-D, Sun H-Y, Lee Y-T, Hsu S-Y, et al. (2008) Increased Risk for *Entamoeba histolytica* Infection and Invasive Amebiasis in HIV Seropositive Men Who Have Sex with Men in Taiwan. PLoS Negl Trop Dis 2(2): e175.



**Figure 1. Abdominal computed tomography showing multiple liver abscesses of a 28-year-old male homosexual who presented with right upper quadrant pain, vomiting, and watery diarrhea for 4 days.** Diagnosis of amebic liver abscess was confirmed by positive PCR for *Entamoeba histolytica* of the liver abscess aspirate. The titer of indirect hemagglutination antibody for *E. histolytica* was 8192.



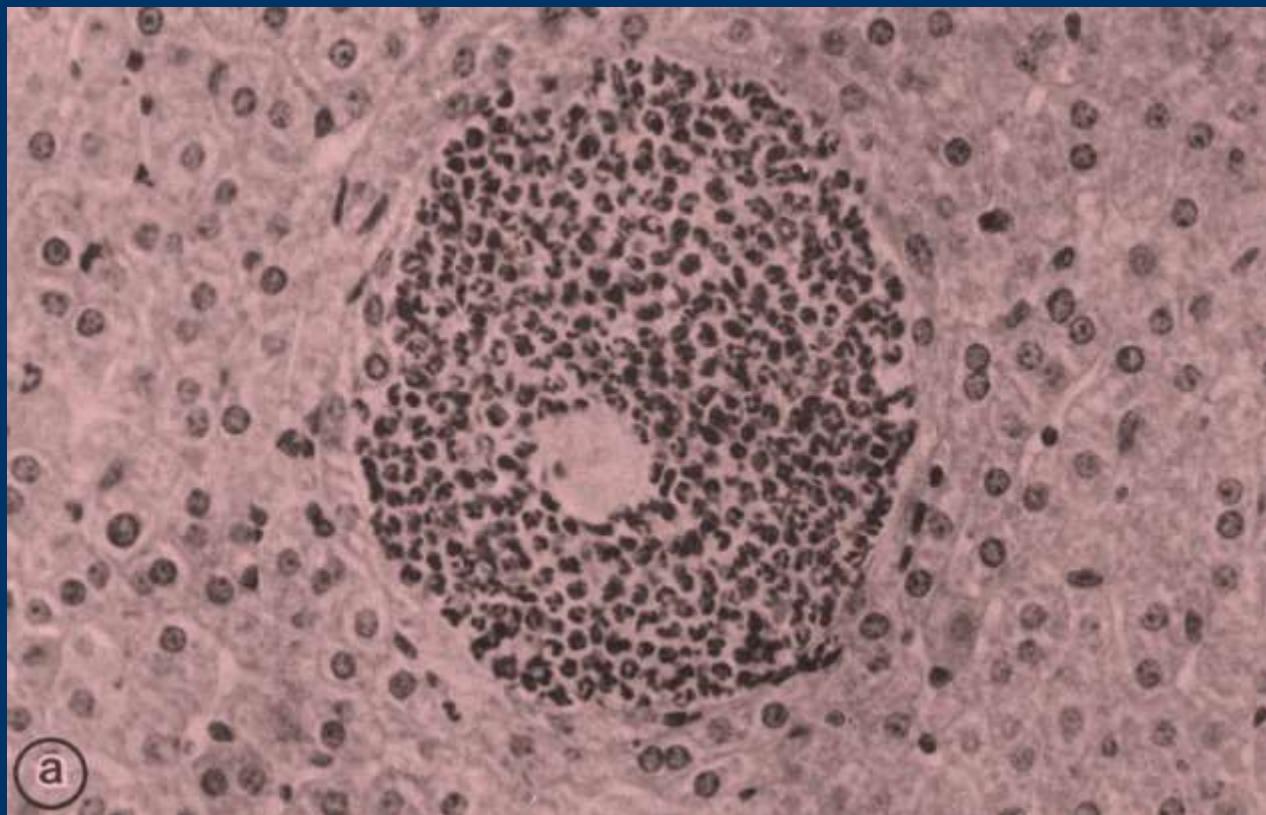
**Figure 2. Colonoscopy of the same patient showing multiple ulcers at the cecum, and ascending, transverse, and descending colon.**  
doi:10.1371/journal.pntd.0000175.g002

# Amebiasis

Infección por *Entamoeba histolytica*

Tsutsumi V. et al.  
Am J Pathol 1984, 117:81-91.

- Aspectos generales de la amebiasis
  - En las lesiones tienden a formarse granulomas



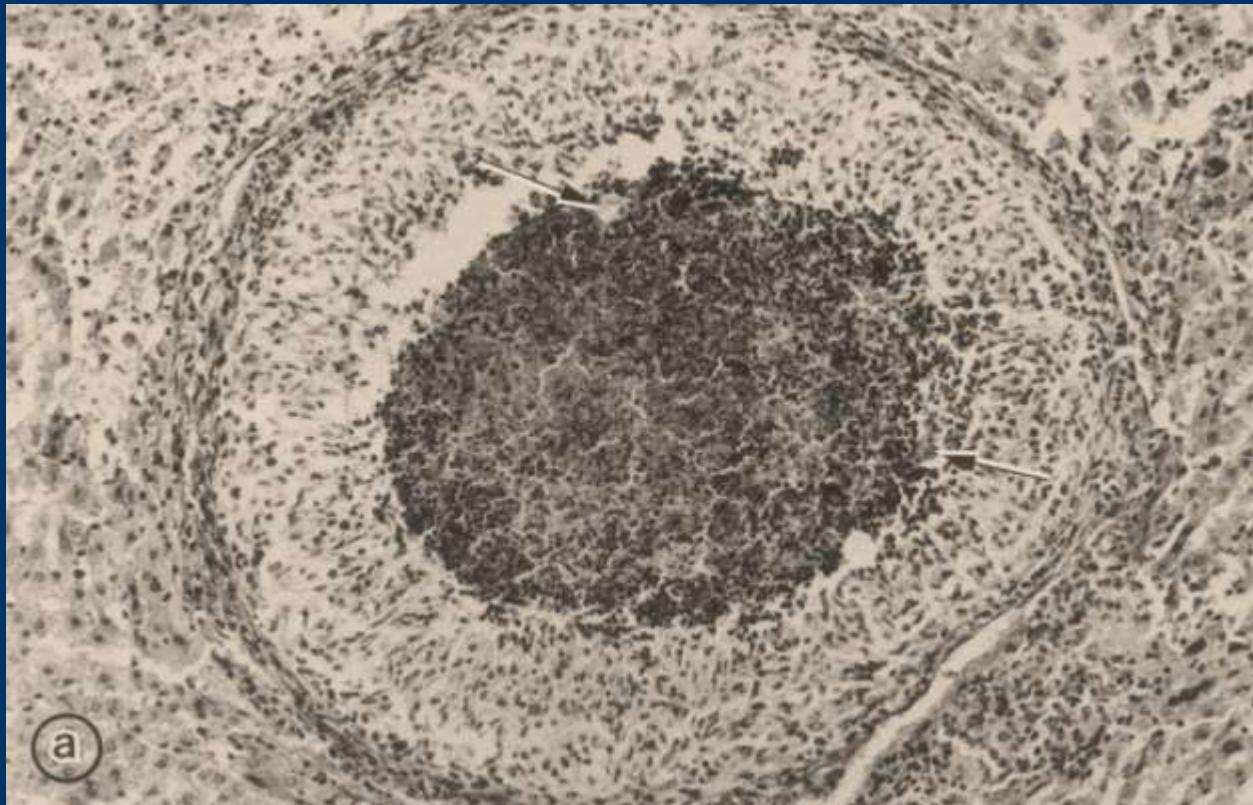
a-The lesion adopts a rounded configuration with an ameba at the center, surrounded by PMNs.  
(H&E, x 300)

# Amebiasis

Infección por *Entamoeba histolytica*

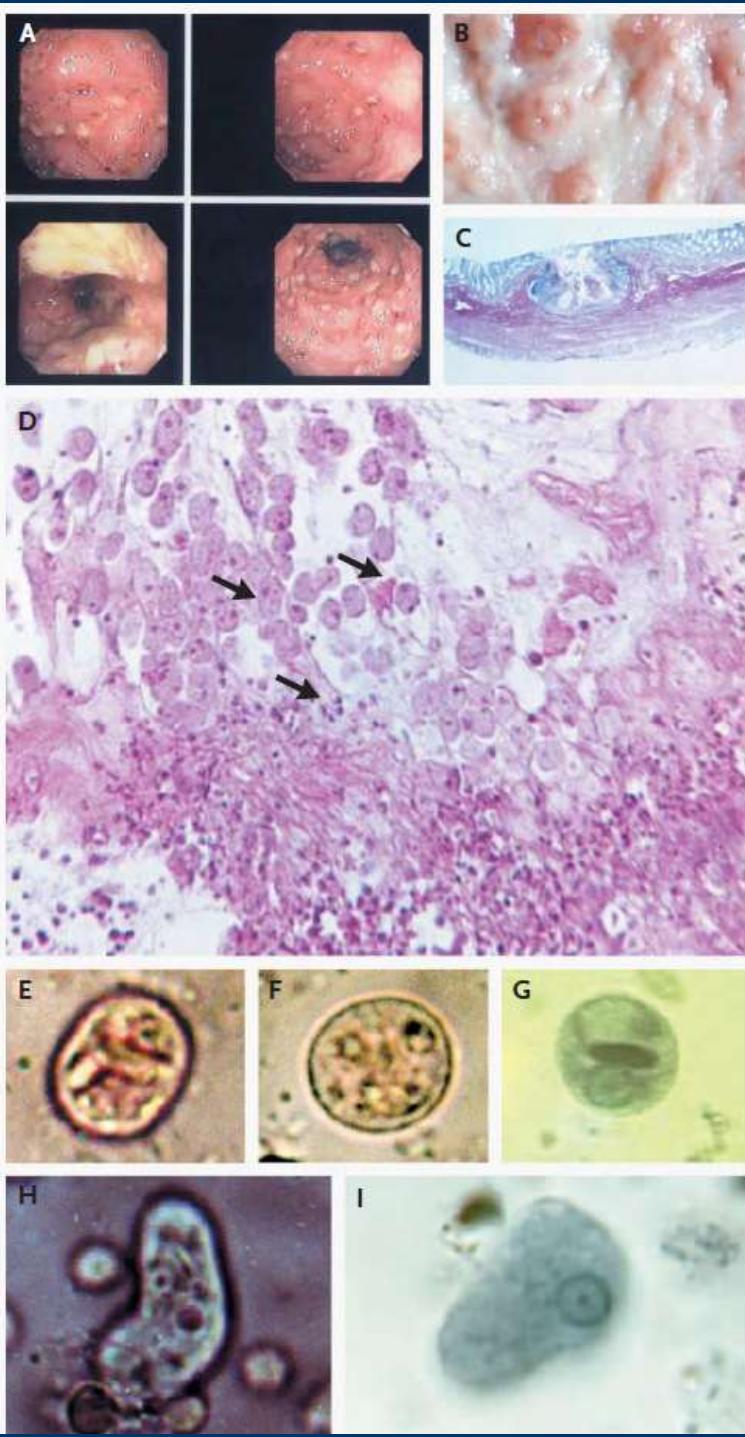
Tsutsumi V. et al.  
Am J Pathol 1984, 117:81-91.

- Aspectos generales de la amebiasis
  - En las lesiones tienden a formarse granulomas



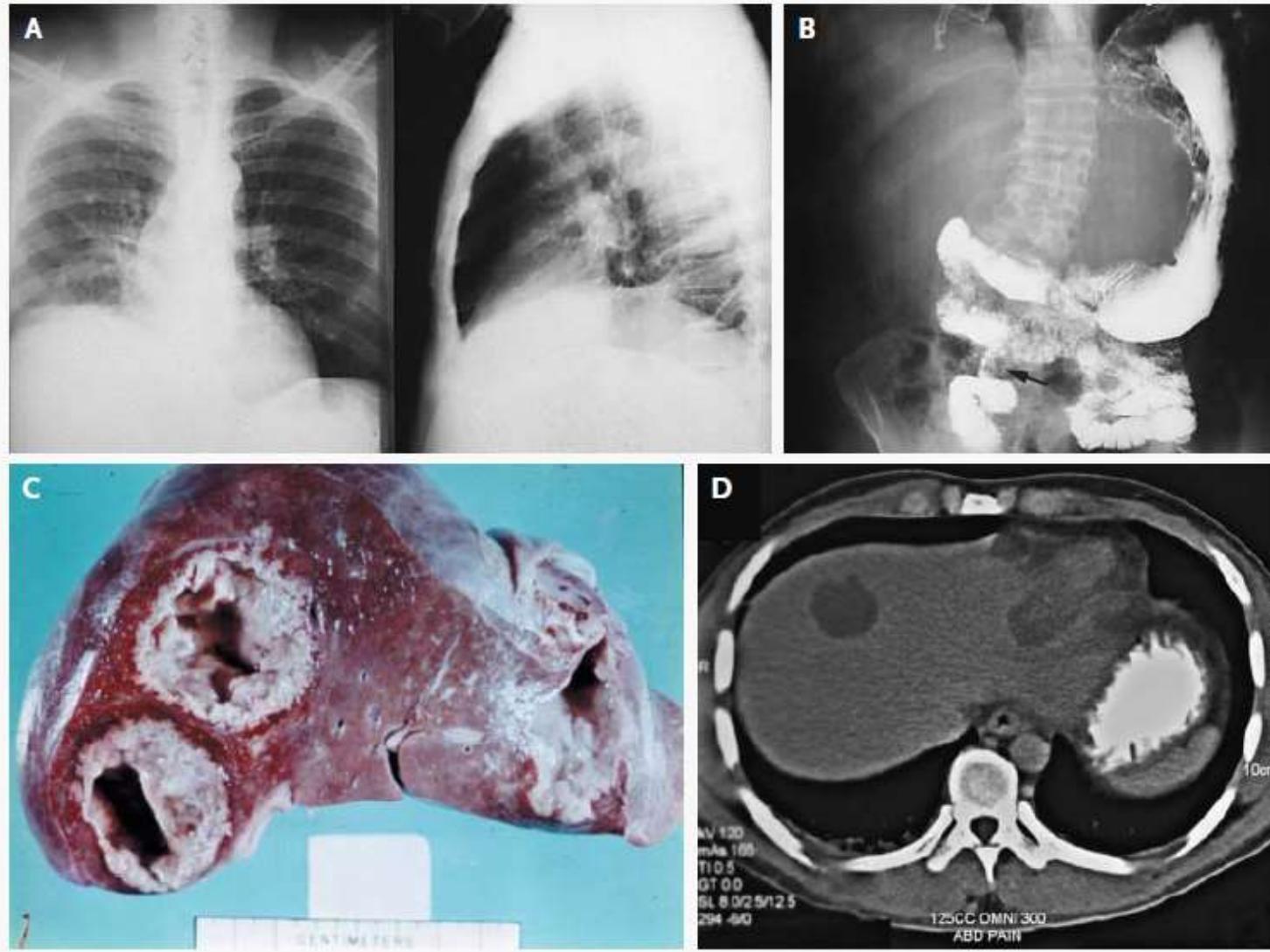
a-Day 4 after inoculation. Granulomas characterized by the presence of epithelioid cells forming a palisade around a central necrotic focus are frequently seen. Amebas are localized at the outer limit of necrosis (arrows).

Thin layers of connective tissue infiltrated by lymphocytes



**Figure 2. Endoscopic and Pathological Features of Intestinal Amebiasis.**

Panel A shows the appearance of intestinal amebiasis on colonoscopy. Panel B shows colonic ulcers averaging 1 to 2 mm in diameter on gross pathological examination. Panel C shows a cross-section of a flasked-shaped colonic ulcer (hematoxylin and eosin,  $\times 20$ ). Panel D shows an inflammatory response to intestinal invasion by *Entamoeba histolytica* (hematoxylin and eosin,  $\times 100$ ). Arrows indicate *E. histolytica* trophozoites. Panels E and F show *E. histolytica* cysts in a saline preparation ( $\times 1000$ ), and Panel G shows an iodine-stained cyst from stool ( $\times 1000$ ). Panel H shows an *E. histolytica* trophozoite with an ingested erythrocyte in a saline preparation from stool ( $\times 1000$ ), and Panel I shows a trophozoite from stool stained with trichrome ( $\times 1000$ ). (Panels B, C, and D are from the slide collection of the late Dr. Harrison Juniper.)



**Figure 3. Radiographic and Pathological Features of Extraintestinal Amebiasis.**

Panel A shows a posteroanterior (left-hand side) and lateral (right-hand side) chest radiograph in a patient with amebic liver abscess. The findings include elevated right hemidiaphragm and evidence of atelectasis. Panel B shows luminal narrowing (arrow) on a barium-enema examination in a patient with ameboma. Panel C shows two abscesses in the right lobe and one abscess in the left lobe in a patient with amebic liver abscess. In Panel D, abdominal computed tomography in a patient with amebic liver abscess shows one abscess in the right lobe and one abscess in the left lobe.

# Amebiasis

## Hallazgos clínicos

**Tabla 1**

### Frecuencia de los hallazgos en colitis amebiana (47)

Hallazgo	%
Antecedente de migración o viaje a zona endémica	Mayoría
Inicio gradual, síntomas >1 semana	Mayoría
Diarrea	94% a 100%
Sangre oculta positiva	70%
Dolor abdominal	12% a 80%
Pérdida de peso	44%
Fiebre >38° C	10%
Antígeno para E. histolytica positivo en heces	87%
Serología positiva	70%
Biopsias por colonoscopia positivas	80%

# Amebiasis

## Algoritmos diagnósticos

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2003, p. 713–729

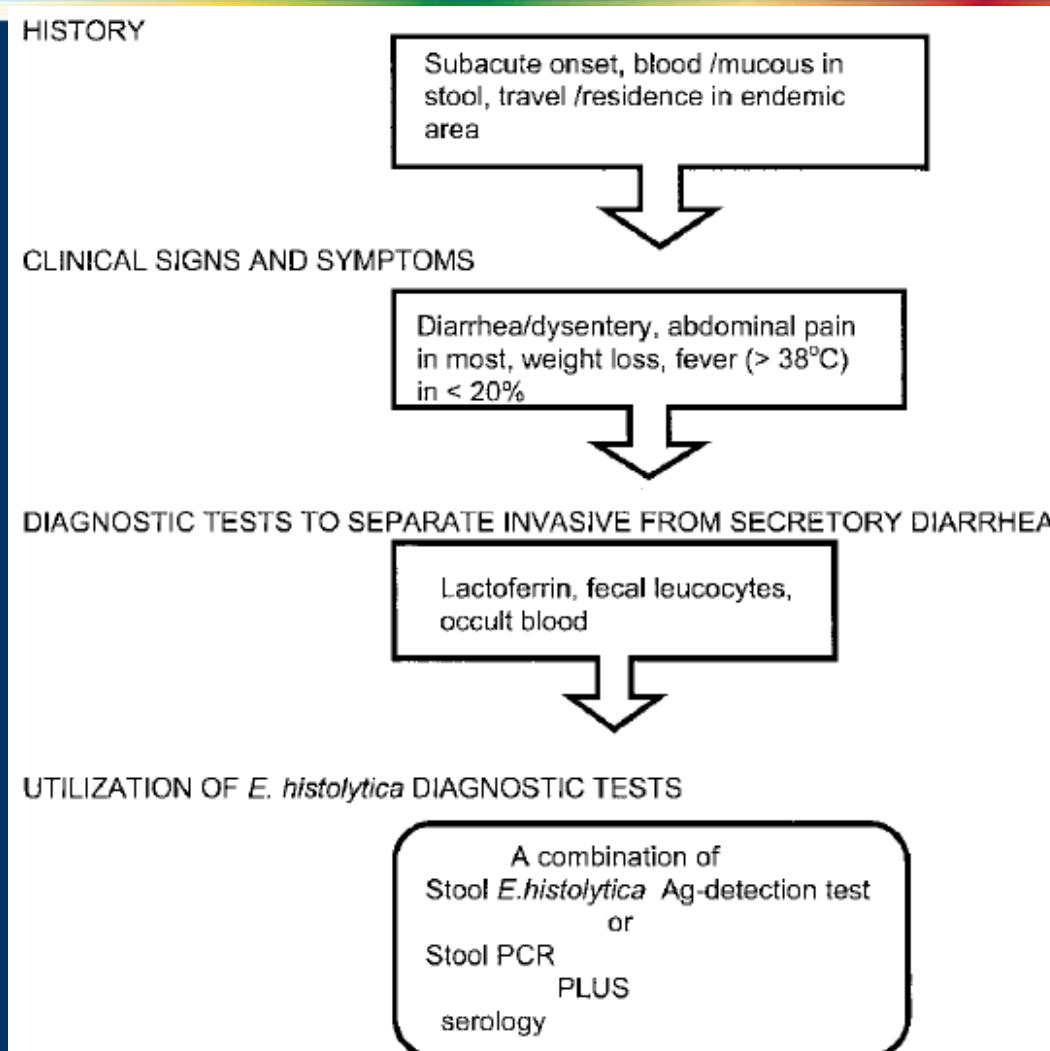
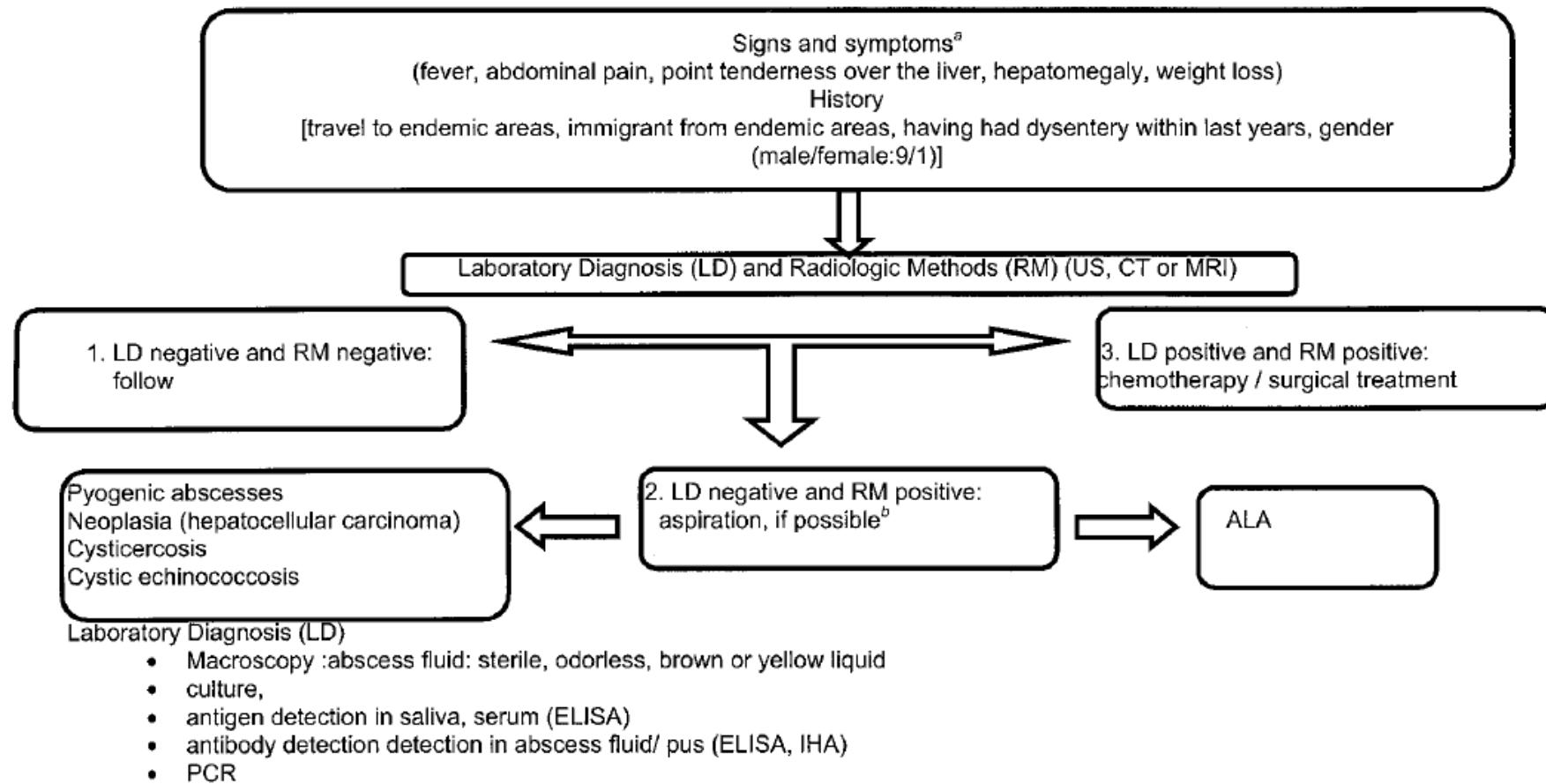


FIG. 2. Algorithm of intestinal amebiasis.

# Amebiasis

## Algoritmos diagnósticos

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2003, p. 713–729



<sup>a</sup> Acute clinical manifestations are associated with multiple amebic abscess

<sup>b</sup> Aspiration contraindicated for cystic echinococcosis

FIG. 3. Practical algorithm for the patients with amebic liver abscess

FIG. 3. Practical algorithm for diagnosis of patients with amebic liver abscess.

# Amebiasis

## Diagnóstico

Haque et al.  
N Engl J Med 2003;348:1565-73.

**Table 1. Sensitivity of Tests for the Diagnosis of Amebiasis.\***

Test	Colitis	Liver Abscess
		<i>percent</i>
Microscopy		
Stool	25–60	10–40
Abscess fluid	NA	≤20
Antigen detection		
Stool	90	~40
Serum	65 (early)	~100 (before treatment)
Abscess fluid	NA	~40
Indirect hemagglutination (antibody)		
Serum obtained during acute illness	70	70–80
Serum obtained during convalescence	>90	>90

\* NA denotes not applicable.

# Amebiasis

## Diagnóstico Serológico – Formas Invasivas



Serological Assay	Sensitivity (%)	Specificity (%)	Reference(s)
IHA	100 <sup>a</sup> , 99	90.9-100 <sup>a</sup> , 99.8	Pillai et al., 1999; Hira et al., 2001
Novagnost <i>Entamoeba</i> IgG	>95	>95	Manufacturer's recommendation
I.H.A. Amoebiasis	93	97.5	Robert et al., 1990
Amebiasis Serology microplate ELISA	95	97	Manufacturer's recommendation
RIDASCREEN <i>Entamoeba</i> (IgG detection)	100, 97.7-100 (100)	95.6, 97.4 (100)	Manufacturer's recommendation; Knappik et al., 2005

Table 2. List of some of the commercially available antibody assays used for the diagnosis of amoebiasis.

# Amebiasis

## Diagnóstico Inmunohistoquímico – Formas Invasivas

188

L. Rivero-Nava et al. / Experimental Parasitology 101 (2002) 183–192

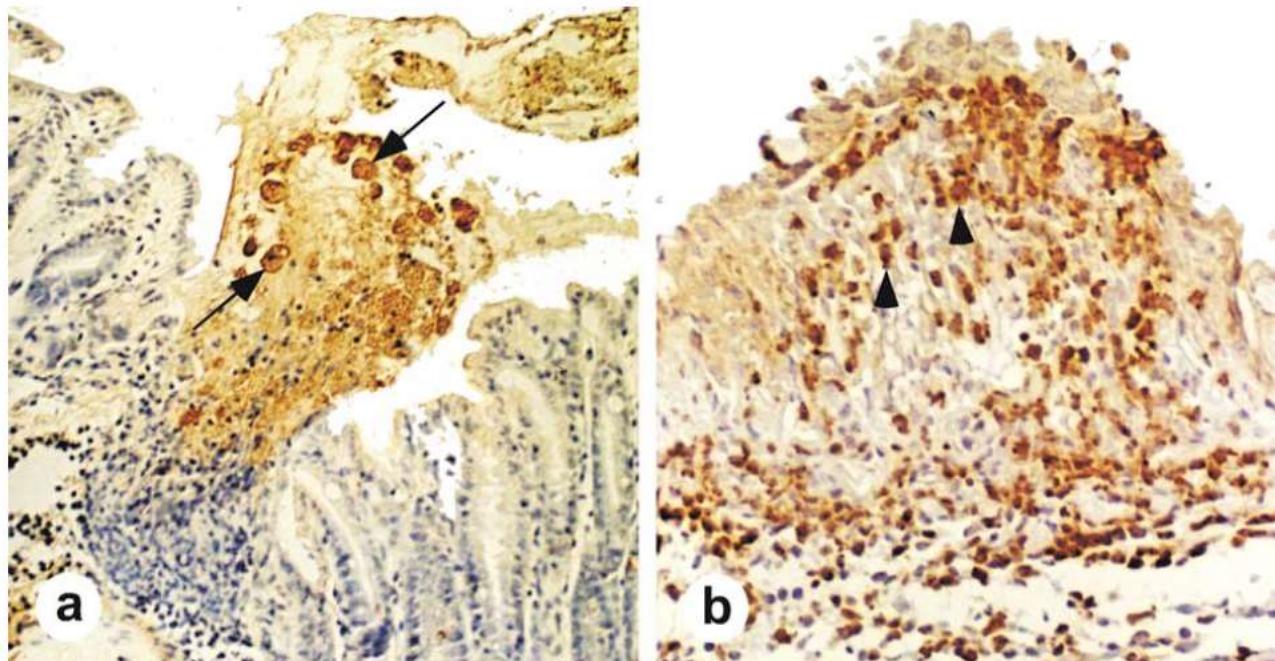


Fig. 3. Detection of amoeba and macrophages in amoebic cecal lesions 24 h after inoculation of *Entamoeba histolytica* trophozoites. Immunohistochemistry of tissue sections from (a) normal mouse incubated with a polyclonal antibody anti-HM1-IMSS strain. A typical ulcer is shown with strongly labeled trophozoites (arrows) (150×). (b) Neutrophil-depleted mouse incubated with an anti-macrophage antibody. A granuloma is shown with strongly labeled macrophages (arrowheads) (225×).

# Amebiasis

## Tratamiento

Sánchez E, Baptista G, Rodríguez Morales AJ. Esquemas Terapéuticos en Amebiasis. Actualización. Academia 2004;3(6):20-22.

21 Academia

TABLA 1. Terapia Antimicrobiana para el Tratamiento de la Amebiasis

Droga	Dosis Adultos	Dosis Pediátrica	Efectos Colaterales
<b>Absceso Hepático Amebiano</b>			
Dar:			
Metronidazol	750 mg VO 3v/d por 7-10 días ó 750 mg IV	Dar: 35-50mg/kg/día dividido en 3 dosis por 7-10 días	Primariamente gastrointestinal: anorexia, náuseas, vómitos, malestar abdominal, sabor metálico; reacción de intolerancia tipo disulfiram con el alcohol; rara vez neurotoxicidad, mareos, confusión, convulsiones, neuropatía periférica, irritabilidad.
Ó:			
Tinidazol	0.8-1,0g VO 2v/d VO OD por 3 días	50-60mg/kg/d (máximo 2g) VO OD por 5 días	Primariamente gastrointestinal y reacción de intolerancia tipo difulfiram como Metronidazol
Seguido por un agente luminal:			
Paromomicina	25-35mg/kg/d dividido en 3 dosis por 7 días ó 500mg VO tid 7 días	25-35mg/kg/d dividido en 3 dosis por 7 días	Primariamente gastrointestinal: diarrea.
O agente de segunda línea:			
Furoato de Diloxanida	500mg VO 3v/d por 10 días	20mg/kg/d dividido en 3 dosis por 10 días	Primariamente gastrointestinal: flatulencia, náusea, vómito, Prurito, urticaria.
<b>Colitis Amebiana</b>			
Dar:			
Metronidazol	500-750mg VO 3v/d por 7-10 días	35-50mg/kg/d dividido en 3 dosis por 7-10 días	Como en el Absceso Hepático
Seguido por un agente luminal (como en el Absceso Hepático)			
Paromomicina	25-35mg/kg/d dividido en 3 dosis por 7 días	25-35mg/kg/d dividido en 3 dosis por 7 días	Primariamente gastrointestinal: diarrea.
O agente de segunda línea			
Furoato de Diloxanida	500mg VO 3v/d por 10 días	20mg/kg/d dividido en 3 dosis por 10 días	Primariamente gastrointestinal: flatulencia, náusea, vómito, Prurito, urticaria.

# Amebiasis

## Tratamiento

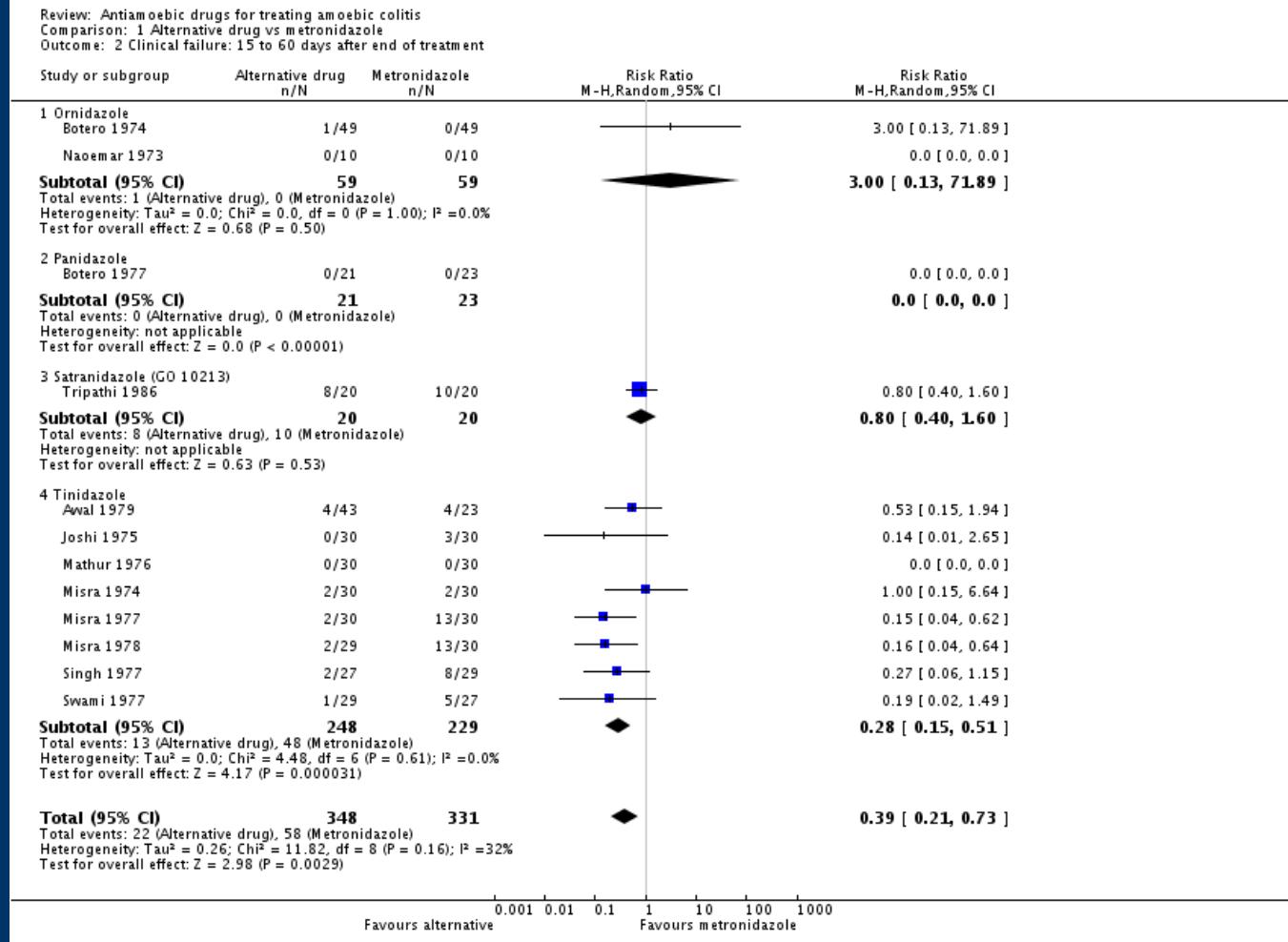
Sánchez E, Baptista G, Rodríguez Morales AJ. Esquemas Terapéuticos en Amebiasis. Actualización. Academia 2004;3(6):20-22.

TABLA 1. Terapia Antimicrobiana para el Tratamiento de la Amebiasis

Droga	Dosis Adultos	Dosis Pediátrica
<b>Portador Asintomático</b>		
Dilodo-Hidroxiquinoleína (Iodoquino)	650mg VO tid por 20 días	30-40mg/kg/d (max 2g) VO tid 20 días
Paromomicina	25-35mg/kg/d dividido en 3 dosis por 7 días o 500mg VO tid por 7 días	25-35mg/kg/d dividido en 3 dosis por 7 días
Furoato de Diloxanida	500mg VO 3v/d por 10 días	200mg/kg/d dividido en 3 dosis por 10 días
<b>Amebiasis Intestinal (Alternativos)</b>		
Secnidazol	2g VO en dosis única	15kg:500mg VO dosis única 16-25kg: 750mg VO dosis única 25kg: 1000mg VO dosis única
Dihidroemetina	1,0-1,5mg/kg/d IM 6 d (no más de 60mg/d)	1mg/kg/d/im en 1 dosis/d, 5días
Omidazol		400mg/kg/d c12hrs VO por 7 días
<b>Amebiasis Extra-intestinal (Alternativos)</b>		
Secnidazol	2g VO OD por 5 días	15kg:500mg x 5 días 16-25kg: 750mg VO x5días 25kg: 1000mg VO x5días
Dihidroemetina	1,0-1,5mg/kg/d IM 6 d x 5días	

# Amibiasis

## Tratamiento – EBM



Gonzales ML, Dans LF, Martinez EG. Antiamoebic drugs for treating amoebic colitis.  
 Cochrane Database Syst Rev. 2009 Apr 15;(2):CD006085.

# Amebiasis

## Conclusiones

- Patología intestinal y extraintestinal de gran importancia
- Pocos estudios en Colombia
- Transmisión oral-fecal pero existen otras formas
- Parasitosis transmitidas frecuentemente por alimentos, contaminación de vegetales

# Amebiasis

## Conclusiones

- Necesidad de estudio e investigación, control y vigilancia
- Tratamiento con tinidazol o metronidazol
- Control de portadores con iodoquina
- Epidemiología poco conocida en Risaralda