

Images in Hepatology

A Brazilian species of *Entamoeba dispar* (ADO) produces amoebic liver abscess in hamsters

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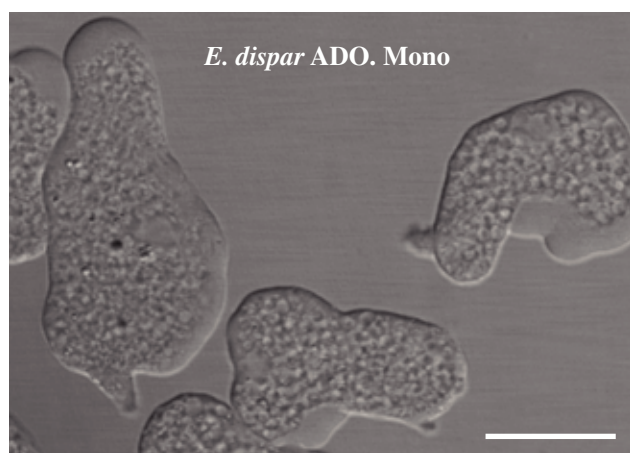


Figure 1. Trophozoites of *Entamoeba dispar* strain ADO in monoxenic culture. Cells show great pleomorphism with abundant small vacuoles. Nomarski optics. Bar = 10 μ m.

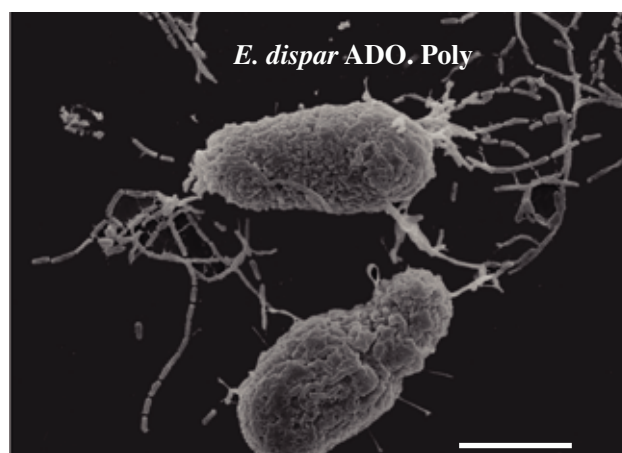


Figure 2. Scanning electron micrograph of trophozoites of *E. dispar* strain ADO in a polyxenic culture. Elongated amoebae show a rough surface with abundant associated *Escherichia coli*. Bar = 10 μ m.



Figure 3. Hamster inoculated intrahepatically with 2.5×10^5 trophozoites of *E. dispar* strain ADO. An opened abdomen shows large whitish lesions (arrow) in the left lobe of the liver.

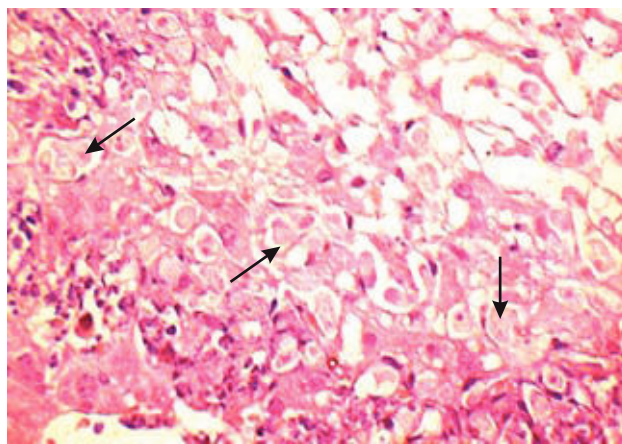


Figure 4. Light microscopy of lesions produced in hamster liver by trophozoites of *E. dispar* ADO strain. Necrotic areas (upper right) are associated to multiple trophozoites (arrows). Some inflammatory reactions are seen in the left and lower sides of the picture. H&E stain. x40.

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In contrast to *Entamoeba histolytica*, which is the etiologic agent of human amoebiasis, *Entamoeba dispar* has been considered as a non-pathogenic species present in asymptomatic carriers. This latter species is currently classified as a different protozoan species of the human gut and unable to produce invasive disease.¹ The distinctions between both species of *Entamoeba* have been achieved through the combination of biochemical, immunological and genetic data. Although *E. dispar* was originally regarded as morphologically identical to *E. histolytica*, recent studies have shown the existence of differences between both species, including the absence of liver lesions produced by *E. dispar*.² However, all previous comparative studies have been performed using the strain SAW 760 RR of *E. dispar* isolated in England and very little is known regarding other strains.

In this study, we tested another sample of *Entamoeba* of human origin, isolated in Minas Gerais, Brazil. The trophozoites of this genus maintained in monoxenic (*Figure 1*) and polyxenic cultures (associated with *Escherichia coli*) (*Figure 2*), showed a Type I (non-pathogenic, according to Sargeant) isoenzymatic pattern, and was classified in fact as *E. dispar* species (ADO strain) by using immunological and molecular biology techniques. Surprisingly, when an *in vivo* test was performed by inoculating the trophozoites of ADO polyxenic cultures into the hamster liver, animals showed at the 7th day, the presence of large (amoebic type) liver abscesses (*Figure 3*), which were later confirmed as typical amoebic lesions by light microscopy analysis (*Figure 4*). Control animals inoculated only with the associated *E. coli* did not show any liver damage.

Our data suggest that, while strain SAW 760 RR of *E. dispar* is practically innocuous to some target cells,² other *E. dispar* strains may have different behavior and pathogenic capacity. Here we are reporting for the first time an *E. dispar* strain (ADO), which was capable to produce large liver abscess. Even though the bacteria *E. coli* was incapable to produce liver damage by itself, their association with *E. dispar* constitutes important factor to be considered for further studies related to pathogenesis of this protozoan.

References

1. World Health Organization. Amebiasis. *Weekly Epidem Record* 1997; 72: 97-98.
2. Espinosa-Cantellano M, Castañón G, Martínez-Palomo A. *In vivo* pathogenesis of *Entamoeba dispar*. *Arch Med Res* 1997; 28: 204-206.