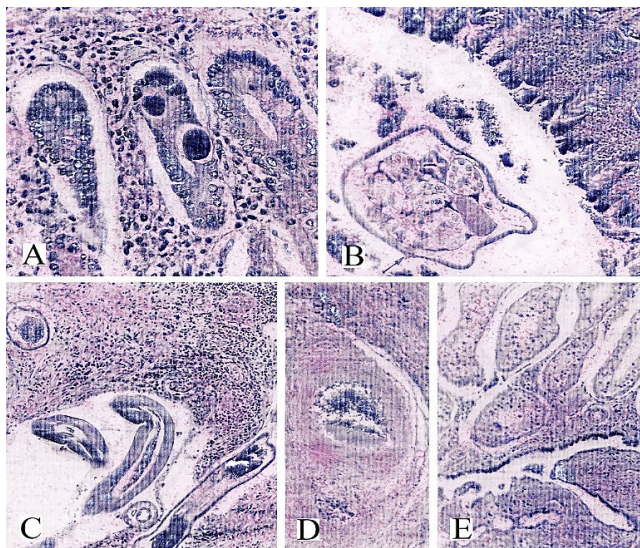


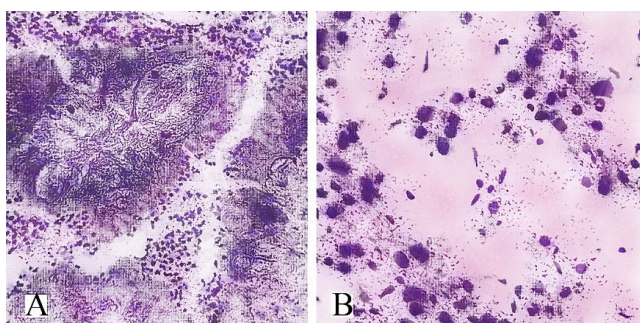




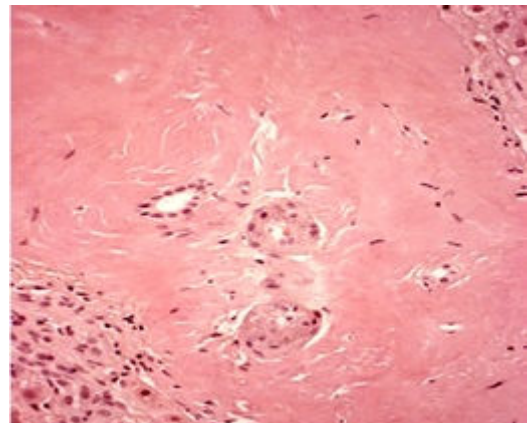
kidneys is a reliable sign that allows suspecting hepatopathic amyloidosis.



**Figure 2** Morphologic characteristics of helminthiasis: Strongyloidiasis (A), Enterobiasis (B) and Wuchereriasis (C-D-E). (A) *Strongyloides stercoralis* larvae in mucosal glands of duodenum with evidence of Edematous enteritis, (H&E staining, x250). (B) Transverse cross-section of adult female helminth *Enterobius vermicularis* in the lumen of appendix, helminth has side spurs on the level of esophagus and contains a large amount of eggs, (H&E staining, x100). (D) Longitudinal and transverse cross-sections of adult *W. bancroftini* in the lymph node with granuloma formation, presence of giant cells, beginning of the necrosis of one of the parasites, (H&E staining, x100). (E) Fibrosis and luminal narrowing of the lymph node, (H&E staining, x100). (F) *Tunica albuminea* in the context of elephantiasis of scrotum, (H&E staining, x100).



**Figure 3** Morphologic characteristic of Maduromycosis (a), and secondary amyloidosis (b) in the liver. (A) Druses of *Actinomadura* in the diffuse purulent infiltrate of the foot soft tissues, (H&E staining, x200). (B) Amyloid in the form of massive depositions between the hepatic trabeculae, (H&E staining, x200).



**Figure 4** Amyloid deposits material in liver lesion stained with Congo red (Congo red staining, x100).

The first descriptions of amyloidosis date back from the beginning of 1840. Virchow was the first one to define amyloid substance [8]. Amyloidosis is a disease process resulting in the deposition and accumulation of fibrillar proteins and characterized by abnormal extracellular deposition of amyloid in different tissues and organs associated with dysfunction of the involved tissue or organ. The cause is still unknown. Amyloidosis is divided into: (1) primary, (2) amyloidosis associated with multiple myeloma (MM), (3) secondary. (4) hereditary-familial amyloidosis [9,10]. The progressive accumulation of amyloid deposits in normal tissues results in structural dysfunction, evolving into failure of the affected organ, most commonly the kidney, heart, liver and peripheral nervous system [11].

Primary amyloidosis is a systemic form without identifiable cause factor. Secondary amyloidosis refers to systemic amyloidosis concomitantly to chronic diseases such as tuberculosis, rheumatoid arthritis, Crohn's disease, among others [10]. The differential diagnosis between the systemic and localized form of amyloidosis may be made through  $\alpha$ -Amyloid deposits have some characteristics: they are eosinophilic in H&E staining and present birefringence under polarized microscopic light when stained in Congo red. This is the simplest and most accepted criterion for diagnosis of amyloidosis. Under electron microscopy, these proteins have fibrous appearance [10,11].

This finding proves characteristic property of amoebiasis to combine with polyparasitoses, particularly with Enterobiasis, strongyloidiasis and Wuchereriasis. Longstanding course of advanced, severe underlying illness with developed intrathoracic complications of amoebic liver abscess combined with Helminthiasis and Maduromycosis accelerated the progression of secondary, most likely hepatopathic amyloidosis.

## References

1. Ermilov VV (2012) Generalized course of cryptococcosis in HIV-infected patients. *J VolgGMU* 41: 38-40.

2. Ermilov VV (2015) An concise atlas of protozoan diseases, human helminthiasis and mycosis. Volgograd: VolgSMU Press K786(4): 30-34.
3. Genta RM (1989) Global prevalence of strongyloidiasis: Critical review with epidemiologic insights into the prevention of disseminated disease. *Rev Infect Dis* 11(5): 755-767.
4. Khmel'nitsky (1973) O.K. Histological diagnosis of superficial and subcutaneous mycoses. Leningrad.
5. Pampiglione S, Rivasi F, Gustinelli A (2009) *Dirofilaria immitis* human cases in the old world, attributed to *Dirofilaria immitis*: A critical analysis. *Histopathology* 54(2): 192-204.
6. Parasites-African Trypanosomiasis (also known as Sleeping Sickness) (2012) Available at <http://www.cdc.gov/parasites/sleeingsickness/>. Accessed March 8.
7. Ermilov VV (2015) An concise atlas of protozoan diseases, human helminthiasis and mycosis. Volgograd: VolgSMU Press.
8. Briggs GW (1961) Amyloidosis. *Ann Intern Med* 55: 943-957.
9. Wong CK, Wang WJ (1994) Systemic amyloidosis. A report of 19 cases. *Dermatology* 189(1): 47-51.
10. Kyle RA, Bayrd ED (1975) Amyloidosis: review of 236 cases. *Medicine (Baltimore)* 54(4): 271-299.
11. Falk RH, Skinner M (2000) The systemic amyloidoses: An overview. *Adv Intern Med* 45: 107-137.