Wasting and Mortality in Beef Cattle Caused by Eurytrema coelomaticum in Southern Brazil

M.R.S. Ilha¹, A.P. Loretti²

Eurytrema spp. is a trematode that occurs in the pancreatic ducts of cattle, buffaloes, camels, deer, goats, sheep, pigs and human beings. This pancreatic fluke has been found in Europe, Asia and South America. Infestation by Eurytrema spp. leads to chronic interstitial pancreatitis. In Brazil, E. coelomaticum was described for the first time in cattle in 1918. Since then, a few cases of E. coelomaticum parasitism in cattle, sheep, goats and buffaloes have been reported in the central, southern and southeastern regions of the country. A wasting disease has been affecting a small number of cattle in the northern region of Paraná State, southern Brazil, during the last 15 years. This area is endemic for pancreatic eurytreumatosis. The disease is characterized by emaciation, recumbency and death despite adequate nutritional management and veterinary care.

The purpose of the present study is to describe the epidemiology, clinical picture, laboratory findings, gross lesions and histological changes of clinical cases of chronic wasting and death associated with pancreatic fibrosis caused by Eurytrema coelomaticum in Brazilian beef cattle herds.

Progressive weight loss was the most common clinical sign. Loss of appetite was not observed. Animals were in poor body condition despite plenty of good quality forage was available. Annual losses in the affected herds ranged from 1 to 3%. The clinical course of the disease varied from 2 to 10 months after the onset of the first clinical signs. Sick cattle were humanely euthanatized in extremis. At necropsy, the carcasses were thin. The pancreas was of normal size, slightly enlarged and dark, or white, markedly firm, shrunken and with a shrunken capsular surface. Myriads of leaf-shaped trematodes of the genus Eurytrema were packed inside multiple dilated ducts which had thickened, whitish fibrous walls or were embedded in the pancreatic parenchyma. Microscopic findings included replacement of the glandular pancreatic tissue by extensive fibrosis associated with intralesional flukes and eggs and ductal hyperplasia. Inflammatory reaction varied from absent to severe and consisted of small granulomas composed of lymphocytes, macrophages and giant cells surrounding trematode eggs. One affected animal had high plasma amylase concentration (1580 U/L) suggesting exocrine pancreatic insufficiency. Glucose blood levels were not significantly increased. The diagnosis was supported by different feeding trials with mineral and vitamin supplements which did not improve the body condition of the affected cattle. Other causes of emaciation including gastrointestinal parasitic or infectious diseases, malnutrition due to scarcity of forage or dietary mismanagement, mineral deficiencies, and poisonous plants affecting the alimentary system, were all ruled out.

It is suggested that diffuse, marked fibrosis of the pancreas induced by a large number of pancreatic flukes is the cause of chronic wasting and death in these cattle herds in southern Brazil. The clinical picture and the pathological findings of the cases reported here are similar to those previously described in sheep in Asia also associated with severe parasitism by E. pancreaticum and characterized by progressive weight loss, weakness, emaciation, recumbency and eventually death. The prevalence of this trematode infestation in cattle in the Paraná, southern Brazil, has been increasing over the last 3 decades. Severe parasitism by pancreatic trematodes in beef cattle in this area could be linked to the specific geographic distribution of the intermediate invertebrate hosts of the pancreatic fluke. The fact that the affected beef herds are kept in pastures suggests that grasses might provide a suitable environment for the development of the invertebrate hosts and maintenance of the trematode in the field.

¹Rua Paissandu, 385, Unit 201, Rio de Janeiro, RJ, Brazil, 22210 080
²Department of Veterinary Clinical Pathology, Faculty of Veterinary Medicine, Federal University of Rio Grande do Sul (UFRGS), 91540-000, Porto Alegre, RS, Brazil.

180