

SOME MORE PRECISE DATA ON CLINICAL AND PATHOMORPHOLOGICAL CHARACTERISTIC OF BOVINE SETARIOSIS

Valery Golovko, Igor Shchetinsky

*Kharkov State Zooveterinary Academy, Department of Pathological Anatomy,
P/O Malaya Danilovka, Dergachovskiy rayon, Kharkiv, Ukraine
e-mail: zoovet@zoovet.kharkov.ua*

Key words: setariosis, cattle, invasive setariosis larvae, non-invasive setariosis larvae, setariosis pathologies dangerous for life and not dangerous, embolic infarctions of lungs, subrenal glands, cerebrum, encephalitis, myelitis, inflammation of internal secretion glands.

Introduction

At present it is supposed that bovine setariosis and setariosis of other animals is a relatively simple disease. The disease is characterized by hemocirculation of invasive larvae of setaria and by the production of mature forms of setaria on the serous coverings.

The existing ideas must be reviewed as many of the non-invasive larvae that are not killed in the blood are transformed into parasitoembols. They are very dangerous because of their infarctogenity.

In addition to that the fact that non-invasive larvae of setaria play a very important part in the pathogenesis of setariosis has not been taken into consideration. Some of the above setaria are destroyed in the blood, some setaria enter skin vessels and the other part of setaria as the authors believe is excreted through perforated capillaries.

The latter can be found in brown fat, kidneys, stomach, small intestine, tongue, glands of internal secretion and vessels of side ventricles of cerebrum.

In this connection to estimate properly setariosis pathologies it is necessary to consider their pathogenesis taking into account the above-mentioned accentuation.

Materials and methods

The field material of case registrations of bovine setariosis was estimated in different regions of Ukraine and in border regions between Russia and Ukraine. 420 carcasses of cows, heifers, young animals and 324 carcasses of animals that had setariosis were examined.

Pathomorphological analysis was carried out. Besides, the material of the induced models of setariosis pathologies was analyzed; the models were received by the administration of blood

containing larvae or larvae themselves in the nutrient medium into circulatory system of the organs.

General amount of models was 48.

Processing of the material was done according to the existing rules in pathomorphology with the use of modern technical methods.

Results

It has been revealed that the most common cause of death of the naturally diseased animals was micro-or-macroinfarctions of lungs and the produced acute heart attack as a result of pulmonary heart reflex.

The above pulmonary infarctions are often not properly estimated because they are diagnosed as haemorrhages, really having a lot in common with them.

Pulmonary – cardial death was obtained in the experiment where the blood containing invasive setaria larvae was administrated into the jugular vein of the animals free from setariosis.

While analyzing the field material the attention was paid to rather frequent cases of white micro, macro intractions in other organs of animals suffered from setariosis: in ovaries, kidneys, pancreas, adrenal glands, brain and others. The intractions are not mortal in such organs as ovaries, pancreas, spleen but; in brain and in adrenal gland they are mortal. It was conducted with the adequate models; we administrated hydrants (blood, nutrient medium) with invasive setaria larvae in them into the arteries that nourish these organs and got mortal or non mortal inadequacies.

Of course it is impossible to classify setariosis embolic infarctions in animals suffering from setariosis as fatal, since setaria larvae, especially their large forms are able to change their body sizes using their ferment systems, particularly holinespherosis, nevertheless infarctions are most frequent components of setariosis.

The circulation of noninvasive larvae in blood of animals suffering from setariosis is not less dangerous.

The analysis of field material has shown that animals suffering from setariosis often have gastritis, enteritis, haemorrhages on the tongue mucous membrane. Cysts in kidneys, encyphalitis, myelitis, pancreatitis and thirheoditis.

The search of the answer to the connections between these pathologies led to the idea, that they are connected by only one thing, by organs, where these pathologies develop, they are

the organs with stenotized capillaries, and the larvae of setaria can be excreted through the pores of these capillaries.

Checking the models and the mixtures of noninvasive larvae proved the above-mentioned suggestion. The introduction of larvae through the carotid artery led to the development of encephalitis, through the kidney artery – to the development of cyst in kidney, etc.

Conclusion

Setariosis – is a poly-organic parasitic pathology, pathogenesis of which is caused by embolia, caused by noninvasive larvae of setaria the pathologies of non-invasive setaria larva excretion through the organs that have perforated capillaries.

References

1. Ahmed S.S. *Histological Studies on the Role of the Spleen and liver in the Destruction of Microfilariae of Litomosoides carinii, Sub-periodic Brugia malayi and B.pahangi in Experimentally Infected Small Laboratory Animals?* // *J.Trop. Med. Hygiene* – 1967. – V.70(№ 4) – P.103-104
2. Becklund W.W., Walker M.L. *Taxonomy, hosts and geographic distribution of the setaria (Nematoda: Filarioidea) in the United States and Canada.* // *The Journal of Parasitology.* – 1969. – V.55 - № 2 – P.359-368
3. Decruse S.W., R. KaLeysaraj. *Excretory Secretory Material from Different Sites of Female Reproductive Tissue of Filarial Parasite Setaria digitata.* // *Indian Journal of Experimental Biology* – 1988. – V.26. – P.781-783
4. Figueredo-Silva J., Noroes J., Cedenho A. et al. *Review. The histopathology of bancroftian filariasis revisited: the role of the adult worm in the lymphatic-vessel disease* // *Ann. Of Tropical Medicine. Parasitology.* – 2002 – V.96 - № 6 – P.531-541
5. Knight R. *Parasitic Disease in Man.* – Edinburgh – London – Melbourne – New York: Churchill Livingstone. – 1982 – 356 p.
6. Srivastava A.K., Sethi N., Ghatar S. *Pathophysiological effects of setaria cervi parasitization in mastomys natalensis.* // *Indian Vet Journal* – 1983 – P.700-705
7. Taylor M.J. *A New Insight into the Pathogenesis of Filarial Disease.* // *Current Molecular Medicine* – 2002 – V.2. – P.299-302.