

An Autopsy Case of Swine with Affection Similar to Banti's Disease

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Introduction

The splenic swellings in swine are often discovered at autopsy. These are mainly caused by tumors, leukosis and erysipelas. At the inspection of internal organs, we should take good care of splenomegaly, for it sometimes has relation with infectious disease. At a slaughter-house a material which might be called giant spleen rather than splenic swelling was discovered.

Histopathological study on the material was performed, and the splenomegaly was found to be due to fibrosis from white pulps to red pulps. There has been no report of such disease of swine in Japan, and having consulted literature, the authors found that this disease was similar to Banti's disease or Banti's syndrome of man.

Hence, in the present paper the authors report on the occurrence of swine affection similar to Banti's disease of man.

Material

At the slaughter-house in Kushikino Prima Ham Factory in Kagoshima prefecture, a landrace crossbred, female, seven months old, having had no remarkable symptoms, showed giant spleen after anatomy.

Pathological findings

Gross finding:

The spleen was enlarged, weighing 2.45 kg, and the following lesions were observed, thickness of capsule being remarkable; the form of dorsal end, ventral end and hilus, clear; dark brown in color; cut surface, solid; follicles, indistinct; many white-line-like substance, remarkable; and a splenic lymph gland, swollen.

The liver weighed 2.5 kg, gray yellow in color, slightly firm. There were no remarkable findings in other organs.

Microscopic finding:

Atrophy and disappearance of lymph-follicles were remarkable in the lesions of spleen, atrophied lymph-follicles being mostly assumed to be a kind of adenoma. The production of fibers was remarkable around the follicles, which was considered to be a cause of splenic swelling. As fibers in the surroundings of follicles take dark brown color by modified Bielschowsky's method, they were proved to be latticed fibers. Red pulps showed congestion and haemorrhage, and occasionally, mononuclear cells as well

as large cell having eosinophil granules, were recognized.

In the fibers which caused thickening of sinusoids-wall, calcification was observed here and there. There were few trabeculae in the spleen.

Production of fibers was also observed in interlobular connective tissue of liver, revealing what is called liver fibrosis. Interlobular venous lumina were narrow, and remarkable production of fiber was observed around it. The hepatic arteries and bile ducts in the interlobular connective tissue were remarkably developed, and eosinophils were scattered there. Hepatic central veins were expanded, production of latticed fibers being slightly observed around them.

Discussion

The splenic swelling in swine has been known except the case of tumors, leukosis, and swine erysipelas. The authors happened to have a chance of examining a case of giant spleen at slaughter-house.

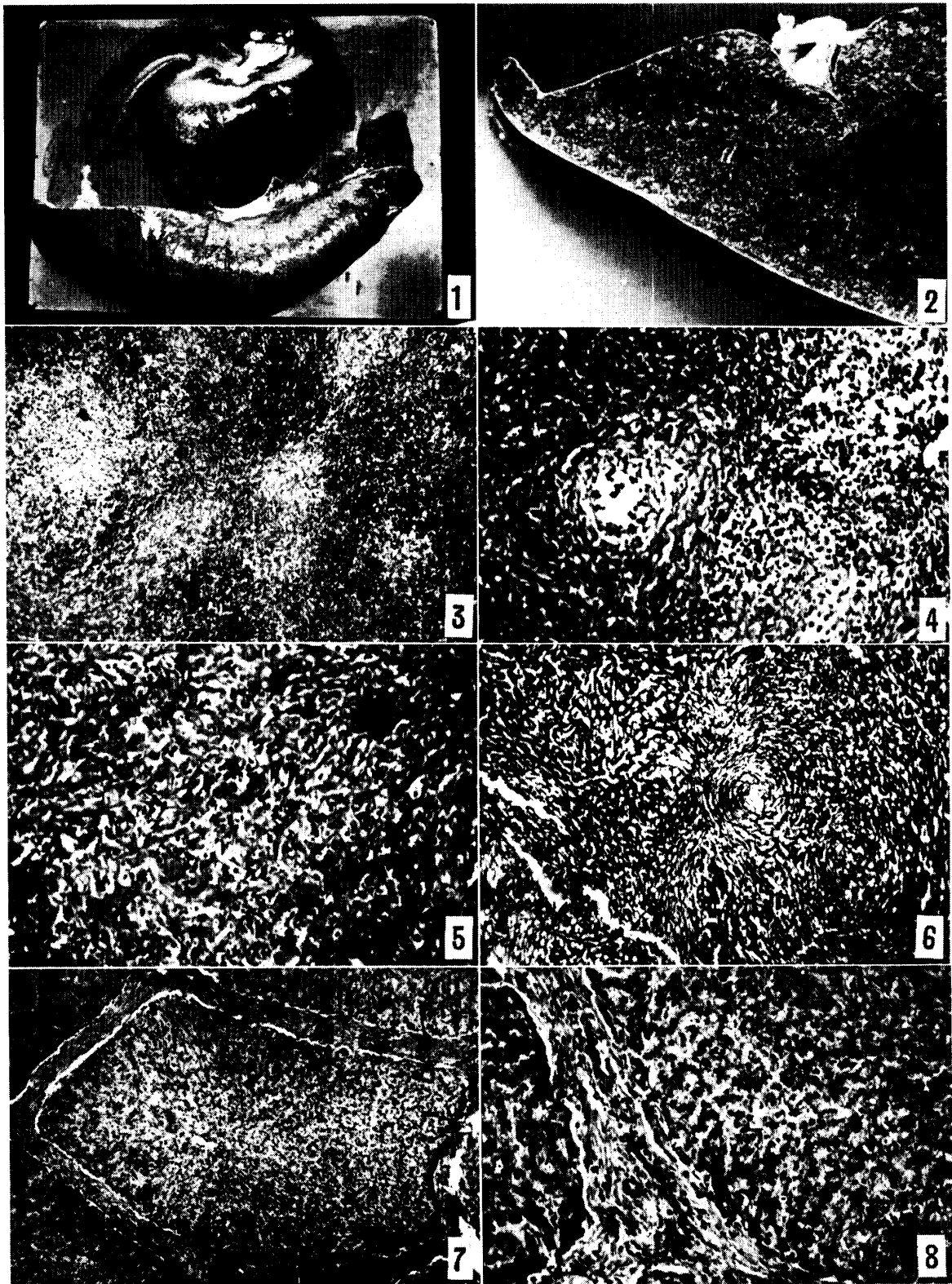
The splenomegaly was characterized histopathologically by the disappearance and atrophy of lymph-follicles, production of fibers and congestion as well as haemorrhage in the red pulp. Above all, production of fiber was a main finding.

In liver, stricture of hepatic veins at Glisson's sheath, enlargement of hepatic central vein and production of fibers were characteristic. These changes show evidently that spleen is closely correlated with liver through the blood circulation.

Judging from the above-stated findings, the authors have ascertained that this disease is very similar to giant spleen of men in case of Banti's disease or Banti's syndrome which is known for liver fibrosis, so this may be called Banti's disease or Banti's syndrome of swine.

Anderson⁽¹⁾ described that concerning the cause of Banti's disease of men, there are two theories pathologically. One is based on primary splenomegaly, while the other is based on secondary splenic enlargement which accompanies liver cirrhosis. Miyake⁽²⁾ reported that in the case of Banti's disease thrombosis are frequently found at hepatic portal vein, and that the marked portal hypertension is understood by the stricture of hepatic portal veins under the slight changes of liver. Kuribayashi⁽³⁾ reported that essential quantitative difference between the changes of the spleen in Banti's syndrome and those in annular cirrhosis of the liver was not detected. He thought that in Banti's syndrome the effect of portal hypertension was more intensively manifested. Komori⁽⁴⁾ *et al* reported the main site of the splenomegaly in Banti's disease was fixed to be the area of red pulp and the splenomegaly was based on fibrosis by the increased portal hypertension. Moreover Komori⁽⁵⁾ *et al* compared the changes of liver in Banti's disease with those of many liver cirrhosis. They thought much of the stricture of portal veins and development of hepatic artery and concluded that the liver lesion in Banti's disease is liver fibrosis. The present case observed by the authors is to be diagnosed as splenic fibrosis accompanied with liver fibrosis, being very similar to the case of Banti's disease of men. So the disease may be regarded as Banti's disease of swine.

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Explanation of Plates

- Fig. 1. Marked swelling of spleen in contrast with liver.
- Fig. 2. Cut surface of the spleen, showing thickening of capsule, solidity and indistinctness of lymph-follicles.
- Fig. 3. Fibrosis of spleen. (Low power magnification, H-E staining)
- Fig. 4. Lymph-follicle of spleen, showing adenoma-like structure, surrounding fibrosis and cell infiltration. (Low power magnification, H-E staining)
- Fig. 5. Sinusoid of spleen, showing fibrosis and cell infiltration. (High power magnification, H-E staining)
- Fig. 6. Latticed fiber around the lymph-follicle. (Low power magnification, silver staining)
- Fig. 7. Fibrosis of liver showing dilated central vein. (Low power magnification, H-E staining)
- Fig. 8. Fibrosis of interlobular connective tissue enclosing a developed hepatic artery and narrowed veins. (High power magnification, H-E staining)