

CASE REPORT

NORTH AMERICAN BLASTOMYCOSIS IN A DOG

A. SAVAGE,* B. R. BOYCOTT,* AND L. J. VILLA*

History

A black Labrador female, three and a half years old, had suffered from a unilateral ophthalmitis and recurrent subcutaneous abscesses in the flank. Anorexia developed, accompanied by mild spasmodic coughing and marked loss of weight. There was no response to a wide range of therapy. Euthanasia was performed a month after the first symptoms had appeared. The thoracic and abdominal organs were submitted for laboratory examination and report.

Autopsy Findings

(a) *Gross.* All the visibly affected viscera had one lesion in common—the presence of dull yellowish-grey, spherical nodules up to 2 mm. in diameter. These were firm, discrete and non-vascular. They were not surrounded by zones of congestion.

Lungs. Both lungs were pale, heavy and rather solid. About two-thirds of the costal surfaces were densely studded with miliary nodules. Elsewhere, the pleurae showed a fine vascular network. Transection revealed the nodular condition throughout both lungs, the apical lobes being most affected, the diaphragmatic ones least so. The bronchial lymph nodes were enlarged and confluent, forming an ovoid mass about 5 by 10 cm. that was adherent to all its surroundings at the bifurcation. Internally this mass was soft, nearly homogeneous and a dull, yellowish-grey. Its capsule was irregular and ill-defined.

Heart. A very few typical nodules were widely distributed throughout the heart muscle and on the left endocardium. Over a small area, the left auricle was adherent and in direct communication with the fused bronchial lymph nodes by a short fistulous tract 3 mm. in diameter.

Spleen and Liver. The former contained hundreds of characteristic nodules, the latter about one-tenth as many.

Kidneys. Both were yellowish but normal in size and shape. The capsules were intact, with finely nodular surfaces. On section the cortex was packed with nodules; the medulla was much less affected.

(b) *Microscopic.* After fixation in 10 per cent formalin, paraffin sections were prepared from some of the affected parts and stained with haematoxylin and eosin, Gram and Periodic Acid Schiff (P.A.S.). The occurrence of Gram-negative, yeast-like organisms, that divided by budding, was considered diagnostic (Fig. 1).

The most interesting lesions were numerous microscopic ones occurring throughout the liver. For description they include two age groups, the early

*Winnipeg, Manitoba.

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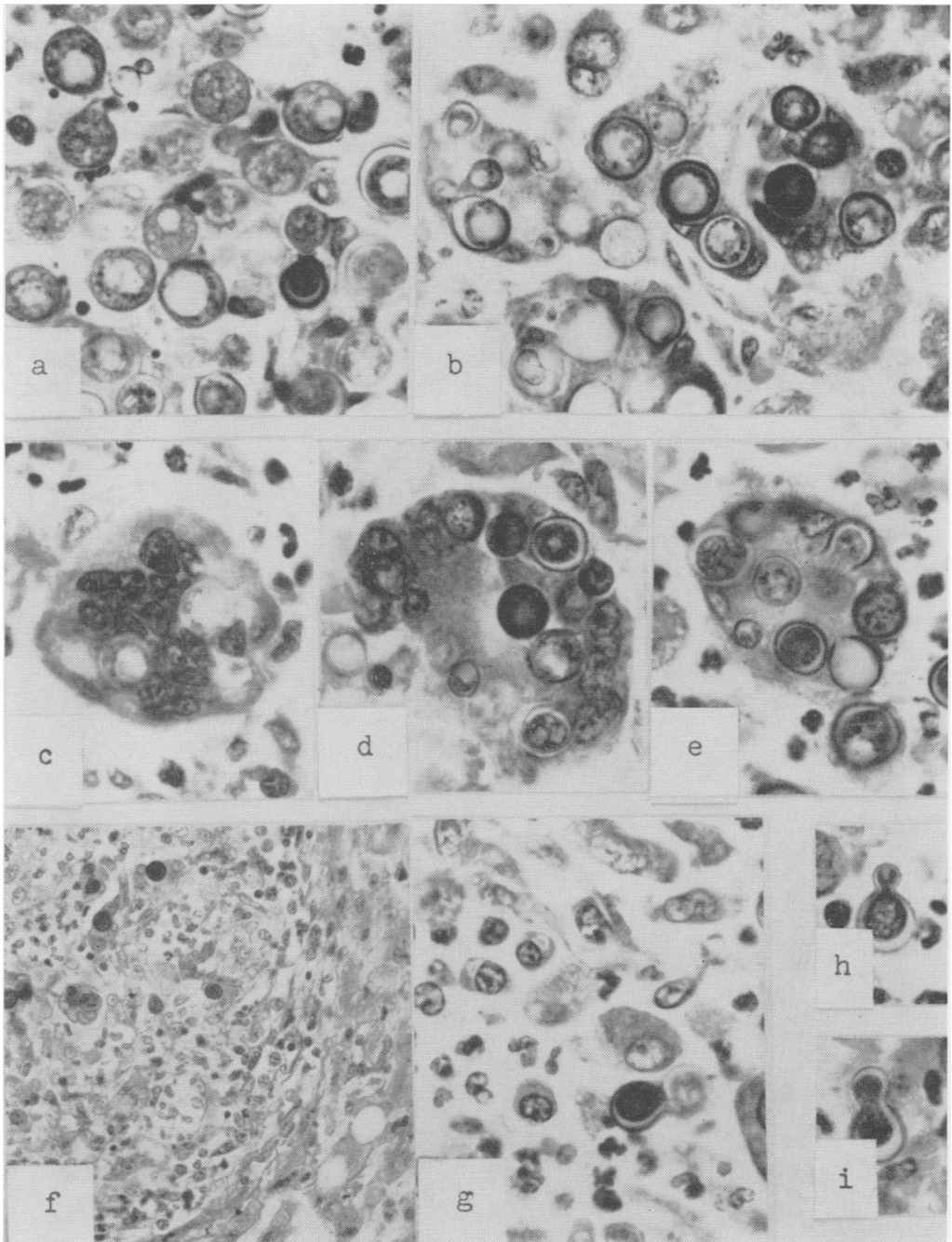


FIGURE 1

(a) Blastomyces in section of lesion ($\times 800$); (b) Blastomyces in section of lesion ($\times 800$); (c) Giant cell of Foreign-body type ($\times 800$); (d) Giant cell of Langhans type ($\times 800$); (e) Giant cell of Langhans type ($\times 800$); (f) Margin of early liver lesion ($\times 240$); (g) Cellular content of early lesion ($\times 800$); (h) and (i) Budding forms of blastomyces ($\times 800$).

and the mature. Typically the early lesion is less than 0.5 mm. in diameter and consists mainly of mononuclear and epithelioid cells. Near its centre are some blastomycetes. It may contain a few hepatic cells, isolated and pale but still recognizable. No polynuclear leucocytes are in evidence. Giant cells and connective tissue capsule are lacking. The surrounding hepatic cells are flattened by pressure from within.

The mature lesion is larger and contains two types of giant cells. Frequently the nuclei are arranged near the periphery, forming an incomplete circle around some of the causative organisms (Langhans or plasmodial type). Alternatively and less commonly, the nuclei are central (foreign body type). Intermediate forms occur. The giant cells are roughly oval, approximately 40 by 60 microns, but vary considerably in size. Polynuclear leucocytes and secondary infections may be found within these mature lesions but they are rare.

Comment

In view of the autopsy findings, the absence of pronounced cough seems to be remarkable.

The fistulous tract leading to the left auricle was unusual. It provided a jumping-off point for massive invasion to which the entire body was exposed. The hepatic lesions were an interesting result.

It is regrettable that opportunity did not permit examination of the brain and the diseased eye.

Acknowledgment

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Selected References

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ABSTRACT

"Spontaneous Atherosclerosis of Swine". H. Skold and R. Getty. *J.A.V.M.A.* 139: 655. 1961.

Spontaneous atherosclerotic lesions similar to atherosclerotic lesions in man were found in 45 normal, apparently healthy swine. The lesions in swine were characterized by thickening of the intima with layers of foamy macrophages containing lipid material. The arteries were obtained from swine which were used for gerontologic studies at Iowa State University. Coronary artery involvement was observed. The authors point out the value of swine in future investigations of atherosclerosis because like man they "spontaneously" develop atherosclerosis. *H.C.R.*