

PUERPERAL SEPSIS IN A DOLPHIN

A.G. Greenwood M.A. VET.M.B. M.I.Biol M.R.C.V.S., International Zoo Veterinary Group, Hainworth House, Damems Lane, Keighley, West Yorkshire, U.K. and E.G.F. Tinsley M.B. F.R.C.Path. Consultant Pathologist, Airedale General Hospital, Keighley, West Yorkshire, U.K.

Introduction

Diffuse puerperal sepsis, the infection of the *post partum* uterus with subsequent septicaemia, was a major cause of death in women in the pre-antibiotic era. Nowadays, it is usually only seen following criminal abortion and is caused by the contamination of the uterus with exogenous bacteria. In animals, similar cases of acute metritis are seen following calving, especially where there has been retention of the placenta. The retained necrotic material provides an excellent medium for bacterial multiplication. Invasion of the uterus of mares and cows with bacteria occurs commonly after normal parturition, but is usually cleared within two to three days (JUBB & KENNEDY 1970), unless the number and virulence of the organisms is very high or the uterine environment encourages multiplication. In dolphins, chronic endometritis, not associated with pregnancy, has been recorded and was treated surgically (RIDGWAY 1972). We have previously successfully treated two cases of metritis following spontaneous abortion in dolphins.

This report records a fatal case of puerperal sepsis in an Atlantic Bottlenosed dolphin (*Tursiops truncatus*).



Fig. 1. Microabscesses in myometrium.

History

A ten year old female Atlantic Bottlenosed dolphin died six days after giving birth to her first calf. She had been diagnosed as pregnant by serum progesterone assay eleven months previously and gave birth normally to a 114 cm, 15.2 kg. male calf. The placenta was not seen to be passed but large pieces of necrotic placental material were found in the water treatment plant four days later. The calf was drowned accidentally by the mother within two hours of birth, although it had been breathing and swimming normally. The mother failed to eat after the birth until her death, although her behaviour was considered otherwise normal. Veterinary attention was not requested and no treatment was given.

Post mortem findings

No abnormalities were found at autopsy of the calf.

Autopsy of the female was carried out 16 hours after death. The dolphin was 240 cm. long and in good bodily condition. There was very little mammary secretion. Small lesions of candidiasis were present around the blowhole and on the epiglottis. The peritoneal cavity was filled with dark sanguineous fluid, the left uterine horn was enlarged and there were strong adhesions between the uterus, bladder and peritoneal wall in the pelvic cavity. The liver was enlarged and friable. The left lung contained a 7 cm. abscess surrounded by a zone of haemorrhage.

The uterus was filled with dark red fluid without any sign of gas. The endometrium was thrown into folds with whitish necrotic material on the ridges. The uterine wall was intact.

Histological examination showed a necrotic endometrium with attached placental tissue. In the myometrium, two layers of microabscesses were seen, containing pus and large clusters of Gram-positive cocci (Fig. 1). Venous walls were difficult to distinguish, but the distribution of the abscesses strongly suggested venous thrombophlebitis.

Colonies of cocci were seen in the vessels of the adrenal, pancreas, lymph node, spleen, thyroid and liver. Both lymph node and spleen showed reactive hyperplasia. The lung showed extensive suppurative pneumonia with large numbers of cocci. A clearly defined septic thrombus was seen in one vessel, breaking out into the alveolar space (Fig. 2). Small renal vessels also contained colonies of cocci and in one area these were surrounded by inflammation, indicating an early haematogenous pyelonephritis (Fig. 3). The liver showed intense centrilobular congestion with inflammatory cells in the portal tracts and focal necrosis - all signs of septicaemia. Marked loss of colloid was seen in the thyroid.

A *Streptococcus* was isolated in pure culture from lung, liver, uterus and peritoneal fluid. It was typed as Lancefield group C, but did not have the precise biochemical reaction of any recognised species within that group.

A large single corpus luteum was present in the left ovary corresponding to the horn of pregnancy. Tooth section indicated the animal's age as 10 years.

Discussion

The post mortem findings indicate a classic case of diffuse puerperal sepsis, with terminal streptococcal septicaemia. Haemolytic streptococci are the commonest aetiological agent of



Fig. 2. Suppurative pneumonia. A septic thrombus, breaking out into the alveolar space.

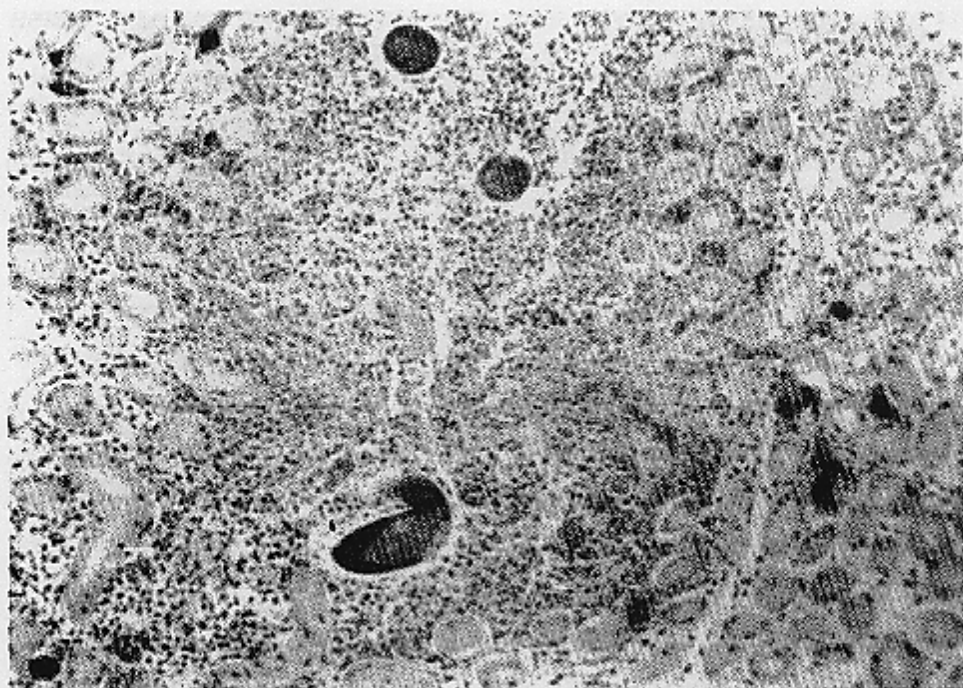


Fig. 3. Kidney, containing colonies of cocci.

this condition in women but in domesticated animals other organisms are more commonly involved. The origin of the infective agent was not found. Faeces are normally discharged at birth into the water around the calf and may represent a possible source of neonatal infection. It is probable that this also represents a serious risk of uterine infection to the mother, when parturition takes place in confined spaces in captivity.

The rapid loss of this animal emphasises the need for rapid intervention when dolphins go off feed. Such signs should not be ascribed to psychological factors without clinical investigation to eliminate disease.

Acknowledgements

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