

A NOVEL APPROACH TO HYPERNATREMIA AND HYPERPROGESTERONEMIA THROUGH LAPAROSCOPY IN A SOUTH AMERICAN SEA LION (*Otaria byronia*)

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ABSTRACT

In 2002 a 27 year-old female South American sea lion (*Otaria byronia*) presented with clinical signs of anorexia, lethargy, coprostasis, tenesmus, perineal tumefaction (anorectal prolapse or hyperplasia), and abnormalities of clinical pathology including hypernatremia and hyperchloremia (Na 176 mEq/L, Cl >140 mEq/L) and hyperprogesteronemia (306,22 ng/ml).

Differential diagnoses for hypernatremia are sodium surcharge (due to drinking salt water) or adrenal gland diseases (due to adrenocortical hyperplasia, adenoma or carcinoma). Differential diagnoses for hyperprogesteronemia are ovarian diseases (neoplasia, persistent CL) or also adrenal gland disease (adrenocortical hyperplasia, adenoma or carcinoma). The link between hypernatremia and hyperprogesteronemia is adrenal gland disease. Diagnosis of ovarian and adrenal gland diseases is obtained through the following approaches: clinical signs and history, hematologic and biochemical results, exploratory surgery (laparotomy or laparoscopy), imaging (ultrasound examination), histopathology examination (biopsy), steroid hormone assay, evaluation of the kidney-hypophysis-hypothalamic axis (hypernatremia).

After trying different medical approaches, the clinical signs did not improve. The strong suspicion of adrenal or ovarian disease, in combination with the fact that we had inconclusive ultrasound results and difficulties in validating the hormones reference values and tests, led us to decide for an exploratory laparoscopy in an attempt to make a definitive diagnosis. Unfortunately, the ovaries and adrenal glands appeared normal during the laparoscopy. The uterus did look thicker than expected, but this being our first laparoscopy in *Otaria byronia*, and to our knowledge the first ever done in this species, it was very difficult to assess. The animal woke up well from the anaesthesia, was kept under surveillance for two hours (after wake up), but was found dead 12 hours later (next day morning).

The gross necropsy showed normal appearing adrenal, different sized ovaries (the left ovary was the largest and had a distinct darker colour, with two different textures upon incision), a thickened uterine wall with a large amount of yellow coloured mucus in the vaginal vault up to the cervix. The histologic changes of the organs examined supported possible cardiopulmonary failure during the recovery period from nearly ten hours of anaesthesia. Histopathology of the right ovary revealed a large cellular luteinization and the left ovary an undifferentiated neoplasia of the medullar region. The final conclusions were ovarian neoplasia (compatible with progesterone production), chronic interstitial nephritis, atelectasia and lung emphysema.

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