

Mucinous Mammary Carcinoma and Mammary Adenoma in Young Cat

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INTRODUCTION

Cat mammary tumors commonly occur in female cats above 9 years of age. The 85% mammae tumor in cats is malignant, characterized by rapid growth and spread. The cat race that has the highest predisposition factor is Persian, followed by Siamse, and Mancoon. Mammae's tumor in Mimika cat occurs at the age of 6 months, Mimika is a female cat with a Maincoon race.

MATERIALS AND METHODS

Cat named Mimika, Maincoon race, female, gray, and 6 months old. The cat came on January 26, 2018 to the clinic with complaints of swollen and red mammae after a day of bathing. Previously on January 15, 2017, Mimika estrus about 1 week. Mimika will not eat and not active.

The physical examination showed that Mimika was still active, the temperature was 38°C, skin turgor <3, capillary refill time (CRT) <2, mucosa rose, and visible swelling in 2, 3 and 4 right and left quarters mammae. Mammae experienced red swelling, her consistency hard, and when palpated there was a sick reflex.

Investigations performed were CBC (Complete Blood Count), blood chemistry, x-ray, and biopsy. Differential diagnosis of Fibroadenoma, Mammary Adenoma, Squamous cell carcinoma, and Mucinous Mammary Carcinoma. Diagnosis obtained from biopsy Mucinous Mammary Carcinoma and Mammary Adenoma. Therapy given to Mimika are surgery, Ceftriaxone, Cystaid®, urdafalk®, and Transfer factor ®.

DISCUSSION

Mimika first came on January 26, 2018 with a swollen mammae complaint after being bathed the day before. On physical examination was found magnification of mammae on quarters 2,3, and 4 right and left, when palpation there is pain, consistency is chewy and not attached to muscle and skin, skin around red mammae (hemorrhage), and when disqueeze no fluid out of mammae. At that time, Mimika was not an appetite and inactive. Then performed blood tests and x-ray taking.

Results of CBC examination no significant value changes. The results of blood chemistry

showed an increase in creatinine, AST, and total protein, but the increase was not significant. In addition, from blood chemistry results showed the total bilirubin value and Gamma-glutamyl transferase (GGT) increased. This indicates the presence of inflammation in the bile duct / chest that can be caused by bacterial infections such as *Escherichia coli*, gallstones, or disorders of the pancreas (Indrawati 2011). This increase in Mimika can occur because there is an infection of *Escherichia coli* bacteria which is a normal bacteria in the digestive system, but when the condition of the body in bad condition can cause the bacteria to grow more and uncontrolled as normal flora that can infect the tract/gallbladder. X-ray examination results show radiopaque images on the mammary glands, this may indicate a solid mass (tumor) or fluid inside in mammae. In addition, observations were made to Mimika for 1 week at the clinic, during which time mammae grew rapidly. Based on anamnesis, investigation and observation in the clinic, Mimika was diagnosed with a mammae tumor.

Mammae tumor is a degenerative disease due to excessive and uncontrolled mammary cell division. These tumors can be benign (benign) or malignant (malignant). Mammae tumors usually attack older cats (> 9 years) and 80-90% are malignant. This tumor is most commonly found in female cats compared to male cats, especially in non-sterile female cats (Tilley et al 2011). The cat race that has the highest predisposition factor is Persian, followed by Siamse (34%), and Mancoon. Mimika is a female cat with Mancoon race so race factor can also support her Mimika mammae tumor event even though still young.

The cause of the mammae tumor is not yet known, but according to Fossum (2002), the tumor is related to the hormones estrogen and progesterone, both of which are mitogenic to mammae cells because of their ability to bind to estrogen receptors and progesterone in mammae cells. In addition, long-term progesterone-based drugs such as progestin may also cause tumor mammary (Misdrop 2002). Clinical symptoms of cats that have mammae tumors that do not want to eat, look lethargic, mammae increasingly swelled unilaterally or bilaterally with the onset of disease, and bleeding or ulceration in the mammary gland.

Some tumors can produce clear fluid, milk, and bloody fluids. Benign tumors rarely experience wound or injury, while malignant tumors often experience injury. This is because malignant tumors have rapidly enlarging properties will suppress the blood supply to surrounding tissues resulting in degeneration, inflammation, and infection that cause pain. The tumors on Mimika are bilateral on the 2, 3 quarters, and the 4 right and left. Clinical symptoms are inactive, do not want to eat, did not find any fluid coming out of milk duct, but seen inflammation and swelling in mammae quarters 2, 3, and 4.

Mammae tumor action and therapy can be performed by surgery that is by removal of tumor mass by mastectomy method (simple, regional, unilateral, and radial) or even lumpectomy. The choice of method can be considered based on the size, quantity, and location of the tumor (Fossum 2002). Other treatments that can be done are chemotherapy, immunotherapy, radiotherapy, and hormonal therapy. The action on Mimika is surgery with regional mastectomy method that is only the 3rd and 4th left mammae quartiles although in handling the mammae tumor should be done radial mastectomy. However, during the surgery, Mimika's condition is not possible that respiration occurs a rest, decreased heart rate, and oxygen saturation also decreases with the operation.

Before a mastectomy, the first stage is ovariectomy. The action is done to avoid the emergence of mammae tumor again, because according to Fossum (2002), one of the factors causing mammae tumor is the hormone estrogen and progesterone that produces by ovaries, so that by removal of the genital tract, including ovaries as a producer of ovum will reduce the chances of mammae tumor. According to Beth et al (2005) ovariectomy may reduce the risk of developing a mammae tumor, ie, if done under 6 months reduced the risk of 91%, 6-12 months reduced risk 86%, and 12- 24 months reduced risk 11%.

The tissue of mammae is then biopsied to determine the type of tumor. The results of the biopsy are Mucinous Mammary Carcinoma. These tumors are classified as mucin-producing malignant tumors and are rarely reported in cats, often difficult to distinguish from benign lipoma tumors. This tumor metastasis is very difficult to predict the level of invasiveness through lymphovascular. Detection of tumor cell type metastasis can be done on the circulation of blood vessels bundles in the area of the tumor.

Dated March 12, 2018, Mimika came back to with mammae complaints swelled back, but eating is still good and still active. In the examination, the left and right 2 quartile mammae were enlarged compared to the first examination, especially the right and left mammae quadrant. Therefore a blood

test is done in preparation for the second operation.

The second stage of surgery was carried out on all mammae, different from the first operation, in the second operation the active mammary glands appeared in the mammae tumor. The tissue is then removed and biopsy is performed. The thing from a biopsy is Mammary Adenoma, a benign tumor that can be infiltrative. Metastasis from adenoma tumors is rarely reported but it is difficult to distinguish between cysts and mammary ductectasia, which is a physiological process related to hormonal effects.

Different biopsy results in the first and second surgery can be caused by ovariectomy performed on the first operation. At the time of ovariectomy actually will not affect the network that is already cancer, but can affect the network that is hyperplasia, which makes the division or development of abnormal cells to be halted (regeresi and disappear). The possibility of mammae tumor cells in quartiles 1 and 2 has not been cancerous but has undergone hyperplasia, so the cleavage or development of mammary tumor cells in quadrant 1 and 2 stopped after the first ovariectomy was performed, hence the hormone that causes the tumor to occur and affect the mammae tumor no longer, therefore the result of mammary tumor biopsy that operated on the first operation is malignant while the second is benign.

Two months after the second phase of surgery, x-ray thoracic is done to determine the presence or absence of mammae tumor metastasis. In the case of mammae tumors, metastasis is often found in the lungs. Mimika x-ray results show no metastases, the lungs appear radiolucent.

CONCLUSION

Mimika cat is exposed to a mammae tumor with two different types of Mucinous Mammary Carcinoma and Mammary Adenoma. Mammae tumors can occur in young cats especially in races that have predisposing factors such as Maincoon and not yet sterilized. Ovariectomy is one step that can be done to prevent the occurrence and development of mammae tumor.

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