CASE STUDY: SURGICAL APPROACH TO REMOVE SUBCUTANEOUS MASS TUMORS IN A CAMPBELL'S DWARF HAMSTER (*PHODOPUS CAMPBELLI*)

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Case. A campbell's dwarf hamster (*Phodopus campbelli*) with 1,3 years old have swollen at lateral left and right subcutaneous mass of abdomen region. That swollen becomes greater in 2 last month later. The size of left mass is ± 1.5 cm, right mass is ± 2 cm with soft consistency and easy to move. The temporary diagnose is benign mass tumor and the campmbell's dwarf hamster were dissection to remove subcutaneous mass.

Anaesthesia. Inhalant anaestheticum (ether) is used to handling and restraint easier. General anesthesia in the first surgery used Zoletil (VIRBAC Animal Health, 1ère avenue, L.I.D, Carros France) dose 20mg/kg bw (Mason, 1997) and xylazin-HCl (TROY Laboratories PTY Limited, Australia) dose 5mg/kg bw (Mason, 1997) in one syringe by IP injection. The second surgery used general anesthesia with ketamin-HCl anaesthetic (TROY Laboratories PTY Limited, Australia) dose 50mg/kg (Mason, 1997) and xylazin-HCl dose 5mg/kg bw in one syringe by IP injection route.

The general anesthesia is better than local anesthesia to minimize stress in small animals (Gaertner *et al* 2008). Anesthetic agent choice in the first surgery is a zoletil and xylazine combination. Murray *et al* 2000 explain that zoletil (tiletamin and zolazepam combination) not recommended to used on surgical procedure in small rodent. That cause prolonged recovery and become severe hypothermia and hypercausia. Zoletil and xylazine-HCl combination make good onset time, but have prolonged on recovery time (Kohl *et al* 2007 and Mason 1997). In this case, onset of anesthesia about 41s and duration of anesthesia about 7hr 49min to recovery.

Then the second surgery used different combination, that is ketamin-HCl and xylazine-HCl. Ketamine-HCl is a generally anesthetic that leaped a bounds and a lack of cardiopulmonary depressant effect (Plumb, 2005). In this combination have duration about 60-90 minute with characteristic as a muscle relaxant (Murray *et al* 2000).

(A) (B)

Picture 1. The proportion of two abdominal subcutaneous tumor mass. A. Campbell's dwarf hamster with two subcutaneous abdominal region tumor mass. B. The first surgery to removed the left subcutaneous tumor mass.

Minor Surgery. The minor surgery have been made in 2 stage. The first surgical approach removed the left mass (picture 1) and upon the right mass after 2 month later (picture 2). This minor surgery technique to remove subcutaneous mass tumor was explained by Fossum 2002. The minor surgery beginning by cut the skin around the subcutaneous mass tumor after disinfectant by iodine tincture. After that, the mass tumor separated from the subcutan tissue and removed used scissor. The

vascularization in the left mass is fewer than the right mass tumor. The suture technique in this surgery is a simple interrupted suture with a 13 cutting needle (size 13) and suture with catgut 4/0 absorbable chromic type. The macroscopic color of subcutaneous mass is dark red were the left region ± 1.5 cm and the right region ± 2 cm.

(A) (B)

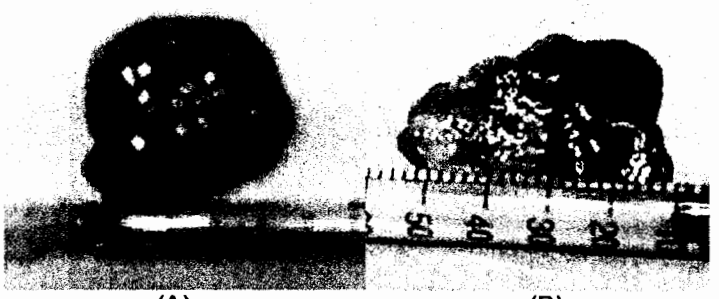
Picture 2. The second surgery. A. The subcutaneous tumor mass on right region before surgery. B. The minor surgery to remove tumor mass.

Post operative care. Oxytetracyclin (VET-OXY LA, SANBE, Bandung Indonesia) by 30mg/kg bw (Goodman, 2002) at once dose by IM route injection and chloramphenicol which treated by 50 mg/kg daily (Goodman, 2002), as a therapy after surgery for 5 day later.

Radiographic x-ray investigation. The radiographic image taken using a radiodiagnostic portable x-ray (Diagnostic X-Ray Unit Model VR 1020 No. Seri 021974, Made in Japan MA Medical Corp.), cassette 24x30 cm (Intensifying screen type JPI GREEN 400 B 8E1233, Korea). X-ray diagnostic setting on 1.6mAs, 50kVp and 100cm film focus distance (FFD).

Gross Findings

The mass was firstly found subcutaneously at the left lateral abdominal region, white in color, firm in consistency, was 20x15x10 mm in sized. The second tumor was growth at right lateral abdominal region, white in color, has mildly hard in consistency, multilobulated, was 20x10x10 mm in sized.



(A) (B)

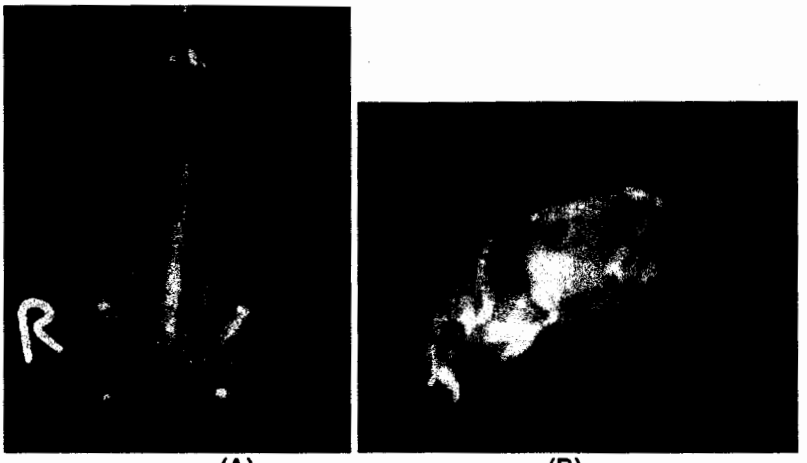
Picture 3. The abdominal subcutaneous mass tumor after dissection (surgery).
A. The abdominal subcutaneous mass tumor on left region
B. The abdominal subcutaneous mass tumor on right region

Histopathological Findings

First Tumor. The tumor cells are arranged in sheet, consisting of pleomorphic cells and some cells has spindle shaped. These cells scattered throughout this population are distinctive cells with large hyperchromatic nuclei. These cells can be mononuclear, multilobulated, or multinucleated, with low mitotic figures. The cytoplasm was eosinophilic. The diagnosis of the first tumor is Malignant Fibous Histiocytoma/MFH.

Second Tumor. Neoplastic cells are pleomorphic, arranged in storiform or solid sheet with collagenous materials found between cells. Most cells has short processes, and has round to ovoid nuclei with indistinct nucleoli. Some cells has vacuolated cytoplasms. These cells mixed with histiocytoid cells and an infiltrate of lymphocytes, plasma cells, neutrophils and occasionally eosinophils. Histioid

cells are frequently karyomegalic or multinucleate, with nuclear atypia. In several part of this neoplasia, the new blood capillaries were found. And giant cells which have multinuclear were frequently found. The second case was also diagnosed as Malignant Fibrous Histiocytoma (MFH) and giant cell variant.



(A) (B)

Picture 4. Radiographic image of the campbell's dwarf hamster.
A. Ventrodorsal /dorso requmbency view. B. Left requmbency/right lateral view.

Discussion

The histologic features of storiform-pleomorphic variant of MFH are unique and are usually diagnostic. Dermal or subcutaneous MFH tends to be locally expansile (Meuten, 2002). Reports vary as to the metastatic potential of this neoplasm. Complete excision can be curative for solitary dermal or subcutaneous masses. There is no recognized successful treatment for multicentric MFH.

Recurrence subcutaneous mass occur on sternum region and flank region. The size of subcutaneous mass tumor about ± 1 cm. Radiographic image was performed to investigation the metastatic on lungs. The gross radiographic image show that no metastatic evidence on lungs. There is no opacity mass found on the lungs (picture 4).

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