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## **A CASE STUDY OF UTERINE LIPOSARCOMA IN A COW: POST-MORTEM DIAGNOSTIC APPROACHES**

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**Abstract:** Uterine liposarcoma is a rare malignant tumor of white adipose cell lipoblasts in domestic animals. In this case report, a greatly thickened myometrium with small gelatinous raised areas in the mucosa was observed during post mortem examination of a cow. Cytological examination revealed the presence of lipoblasts and histopathological examination indicated numerous pleomorphic lipoblasts in the submucosa of the uterus that encircled glandular structures. Liposarcomas in the uterus are rare compared to lipomas in domestic animals. The study indicates the clinical signs of such tumors depend on the size and location of the tumor. The present study is significant as it serves as a reference for diagnosing similar cases in the livestock industry.

**Keywords:** Uterine liposarcoma, malignant tumor, lipoblasts, histopathology, domestic animals.

### **Introduction**

Liposarcomas are rare malignant tumors of white adipose cell lipoblasts. They are considered a soft tissue neoplasm because of their mesenchymal or connective tissue cell origin. They often arise from the skin and subcutis. Most reports indicate that liposarcomas are unlikely to metastasize; however, a few published reports suggest that liposarcomas are aggressive, locally invasive, and commonly metastasize to the lungs, liver, and bone. Incidence of uterine neoplasia is 52.05% in Murrah buffaloes. Liposarcomas had a variegated fleshy, tan, myxoid, and necrotic sectioned surface. Tumours of the genital system are usually detected during necropsy. Clinical signs are dependent on the size and location of the tumour. As per the previous studies, adenocarcinoma was the most common tumour in the uterus of cattle. This paper discusses about a case report of uterine liposarcoma in a cow.

### **Case history**

Uterine tissue from a carcass of an adult cow was collected at necropsy in College of Veterinary Science, Tirupati. Impression smears from cut section of uterus were collected and stained with Leishman stain. Representative tissue

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pieces were fixed in 10% neutral buffered formalin for histopathological examination. Tissue sections of 5-6u were made and stained with hematoxylin and eosin method

### Results and discussion

Upon macroscopic examination, the uterine wall appeared greatly thickened with small gelatinous raised areas in the mucosa especially at the caruncular area [fig1]. Impression smears revealed large cells having varied sized lipid droplets in the cytoplasm with a flattened nucleus pushed to one side [fig 2].

On histopathological examination, numerous pleomorphic lipoblasts were seen in the sub epithelial and submucosal region [fig 3, 4]. The lipoblasts were characterized by presence of a single large cytoplasmic vacuole and flattened hyperchromatic nucleus with nucleoli.

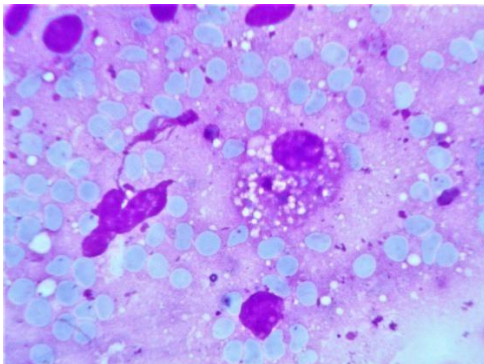
The proliferating cells were seen encircling the glandular structures in the sub mucosa.

Liposarcomas are rare tumours compared to lipomas in domestic animals [10]. Histopathological features of lipocytes having clear intracytoplasmic vacuoles with centrally placed round nucleus [11]. Liposarcomas may possibly arise from misplacement of an embryonic progenitor cell or from metaplasia of mesenchymal tissues and perivascular adipocytes [12, 13] Liposarcoma might also occur due to recurrent trauma [14]. There is association of retroviral infection for the development of liposarcoma in dogs [15]. Based on above findings the present case is diagnosed as liposarcoma in uterus.

**Fig 1 small gelatinous raised areas in the mucosa of uterus**

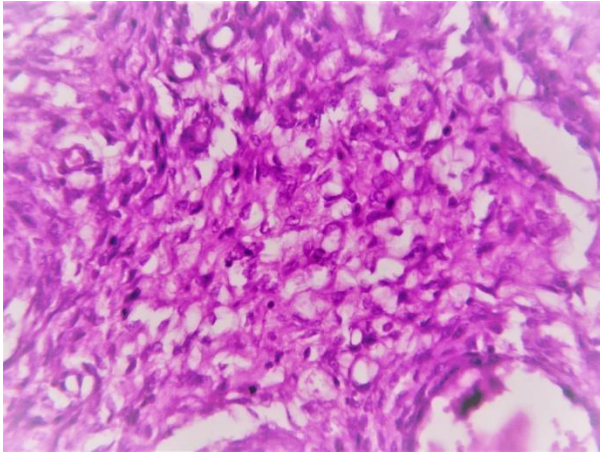


**Fig 2 large cell having varied sized lipid droplets in the cytoplasm with a flattened nucleus pushed to one side-LeishnmannX1000**

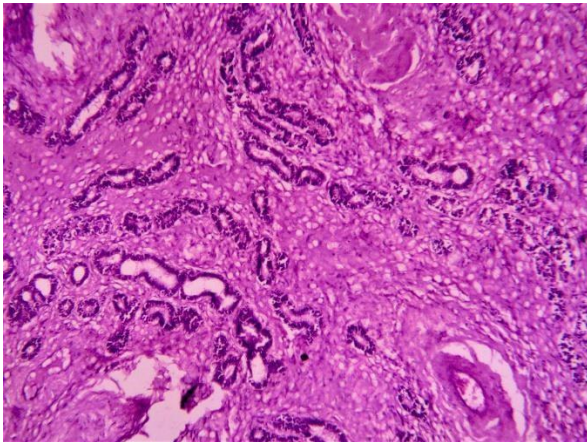


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**Fig 3 pleomorphic lipoblasts were seen in the submucosal region H&EX450**



**Fig 4 Lipoblasts with encircling the glandular structures H&EX 40**



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