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Uterine adenocarcinoma and infiltrative complete fusion to intestinal mesentery in a crossbred jersey cow

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Abstract

A crossbred jersey cow at 4th parity was undergone for exploratory laparotomy to diagnose the uterine abnormality which mimicked crossed gestational period and confirmed a huge uterine tumor with a high degree of metastasis induced adhesion to mesentery as well as omentum. Biopsy and histopathological examinations confirmed the condition as uterine adenocarcinoma.

Keywords: Crossbred jersey cow, intestinal adhesion, metastasis, uterine adenocarcinoma

Introduction

Endometrial carcinoma is a very rare phenomenon in cattle and normally occurs in older cows [6]. Uterine adenocarcinoma is primarily a human neoplasm, but of scarce incidence in domestic ungulates [2]. Special characteristic feature of this type carcinoma is greater invasiveness through lymphatics and vein to different visceral organs [3]. Present case investigated a large uterine invasive tumor through explorative laparotomy and histopathological studies pinpointed a rare obstetrical anomaly of uterine adenocarcinoma with mass proliferation as well as intrusion to the distant visceral organ in a crossbred Jersey cow.

History and clinical observation

A crossbred Jersey cow at 4th parity was presented to Teaching Veterinary Clinical Complex, C.V.Sc & A.H., OUAT, Bhubaneswar with the chief complaint of inappetence and crossed gestational period for treatment. General observation revealed no sign of abdomen enlargement, feeble mammary gland enlargement, dull and depressed animal. All the clinical vital body parameters were within physiological limits. Per-vaginal examination revealed closed cervix, no sign of parturition and absence of a cervical mucosal seal. Per-rectal examination was tried, but it could not be performed due to narrow and blocked pelvic space. Preliminary diagnosis was non-pregnant animal with suspicious uterine pathology. Exploratory laparotomy was performed for confirmatory diagnosis and a massive uterine tumor with a greater multitude of invasion to mesentery, omentum as well as serosa was visualised (Fig. 1). Utero-intestine adhesion was extensive and inseparable.

Treatment and Discussion

A part of the tumour mass was removed surgically located away from the intestine and subsequently the incision was closed. Inj. DNS 3 litres/ day, Inj. Intacef Tazo @ 3375 mg, Liq. Livotas @ 30ml/ day and Inj. Maxxtol @ 4 mg/ Kg b.wt. were administered for 5 days. The animal started taking food after 5 days. Biopsy examination showed highly infiltrative adenocarcinoma characterized by arranging neoplastic cells in tubular fashion. Infiltration was maximum into myometrium and reduced expression to endometrium (Fig. 2). Tumor cells showed peculiar characteristics like anisocytosis, anisokaryosis, acidophilic cytoplasm, medium size cell with one large nucleus containing multiple nuclei and papillae like architectural arrangement (Fig. 3) in the tubular pattern without any connective tissue axis indicating explorative malignancy.

It has been previously demonstrated that the carcinoma cells seed into distant vital organs via internal iliac lymph node, sub-lumbar lymphatics, lungs and liver [1]. Similarly, present case

parallels to severe degree of metastasis, excessive infiltration and undetachable adhesion with intestinal viscera. Primitive histological features like invasion into myometrium and exaggerated fibrous cell proliferation were already seen in a metastatic uterine adenocarcinoma merged to lungs, liver as well as intestine in Holstein cow [7]. Present case also revealed endometrial malignant tumor with fibrinous adhesion to the digestive tract and explained the inherent characteristics of metri-adenocarcinoma. Rampant visceral implantation and multiple foci seeding of uterine adenocarcinoma were also observed in wild deer [5]. In the present case same malignancy features have been observed. Scientist defined uterine adenocarcinoma as development from a deep uterine gland, insurgence into myometrium, perimetrium and to adjacent peritoneal structures through desmoplastic reactions [4]. Rare infiltrative uterine adenocarcinoma in reported obstetrical case might be due to severe desmoplastic reaction through supportive cancerous fibroblast cells.



Fig 1: Extensive fusion (yellow arrows) of uterine adenocarcinoma and mesentery

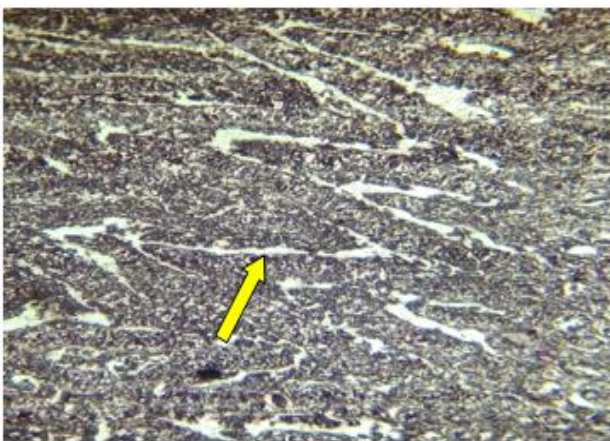


Fig 2: Photomicrograph of uterus of a cow showing cord like arrangement of tumour cells (arrow) in the myometrium H & E, 10X

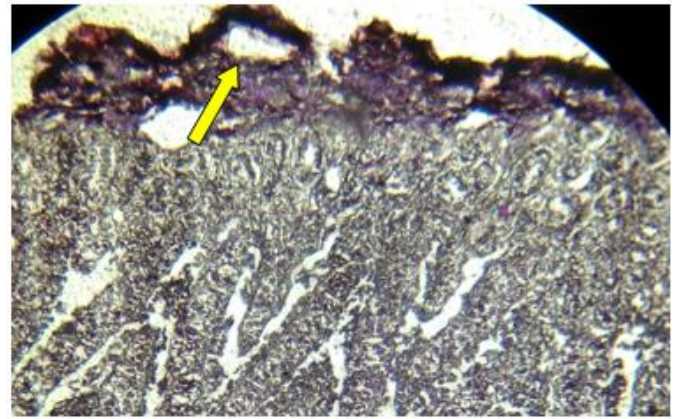


Fig 3: Photomicrograph of uterus of a cow showing small papillae in the endometrial layer (arrows) due to invasion of tumour cells H & E, 10X

Conclusion

Present case study briefs on successful diagnosis of a uterine adenocarcinoma and its successful therapeutic measure in the crossbred Holstein Friesian cow.

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