Cribriform Carcinoma in a Dog

Farshid Hamidi[1]*, Annahita Rezaie[2], Ali Baghbanzadeh[1]

1-Department of physiology, Tehran University, Iran

2-Department of Pathology, Tehran University, Iran

Abstract

An eight-year old dog who was suffering from two big mass between L5-L6 and T7-T8 was referred to a private hospital and thoracic radiographes and ultrasonography showed no metastasis. After mastectomy, histopathology results revealed Cribriform Carcinoma. Tumor cells arranged in cribriform, solid with comedo and micropapillary and also subdivided into Elston Grade II. One year after surgery the owner was asked about the health status of his animal and she was well. Immunohistochemical studies indicate positive expression of P53 and Ki67 and negative Her2. Cribriform Carcinoma is common in cat and rare in dog and this is the first report of Cribriform Carcinoma in Iran.

Introduction

Mammary neoplasms in dogs are 2nd in frequency after skin tumors and they are the most common types of tumors in the bitch. According to the histological diagnosis, between 41 and 53% of the mammary tumors that occur in the bitch are considered malignant(Misdorp 2002). According WHO classification, Cribriform carcinoma is one kind of simple carcinoma and is common in the cat. Cribriform carcinomas are basically solid carcinoma with small apertures like a sieve.

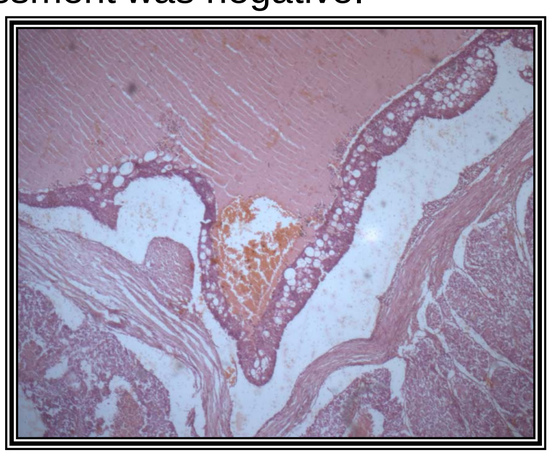
Case History

An eight-year old dog who was suffering from two big mass between L5-L6 and T7-T8 was referred to a private hospital and thoracic radiographes and ultrasonography showed no metastases. The samples which were sent to pathology lab had many cavities in different size and contained milky fluid, fixed in 10% formalin buffered, processed by routine methods, embedded in paraffin wax, sectioned at 5 micron and stained with Haematoxilin and Eosin (H&E). Histological grading was performed on H&E stained section, according to Elston & Ellis grading method. Immunohistochemical staining was performed according to the standard avidin-biotin peroxidase complex method for P53 (monoclonal anti-human clone DO7), Ki67 (monoclonal anti-human antibody clone MIB1, dilution I:100) and c-erbB2(polyclonal rabbit anti-human antibody her2/neu, dilution 1:100).

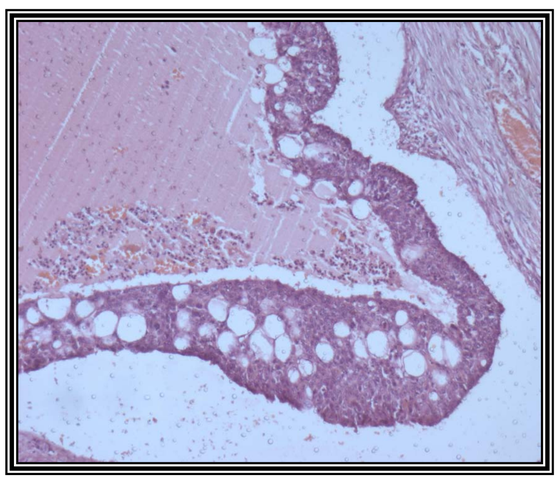
Results

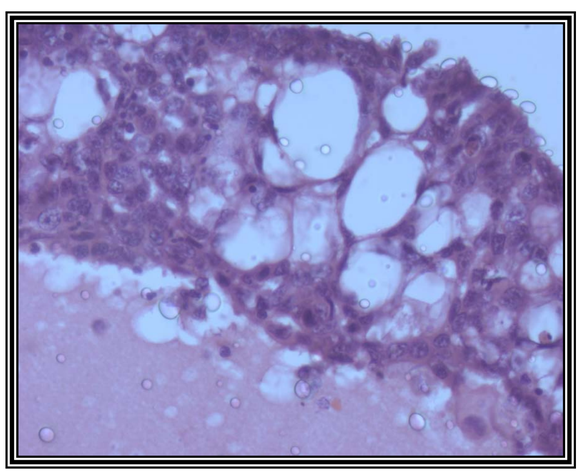
Microscopic inspection of mass revealed that there was proliferation of ductal epithelial cells and fully involved most of the ductal cross – sections. The proliferation was of one cell type with cellular and architectural atypia, such as formation of discrete cribriform spaces lined by polarized epithelial cells. So this case was diagnosed as cribriform carcinoma. There was extensive area of necrosis and also most of the ductal were dilated and full with eosinophilic materials with necrotic cells and inflammatory cells that is in agreement with macroscopic signs. The histologic grading assessment shows Grade II, moderately differentiated.

Immunohistochemical results was positive expression for P53 and also more than 50% of tumor cells were positive for ki67 protein. Her2 assessment was negative.

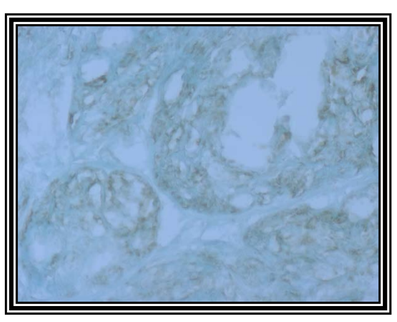


proliferation of ductal epithelial cells with pink materials in duct

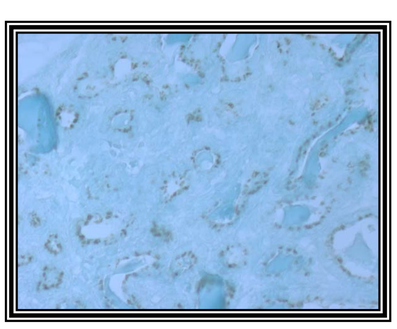




proliferation of ductal epithelial cells with small apertures like a sieve



Brown nuclei shows P53 expression



Brown nuclei shows Ki67 expression

Discussion

Cribriform carcinoma is one kind of simple carcinoma with one type of cell. It is common in cat and rare in dog and this is the first report of Cribriform Carcinoma in Iran. Immunohistochemical results show that this kind of tumor will be useful for future researches in human and canine oncology and dog is the best animal model for immunotherapy, genetherapy and other treatments.

References

Benjamin SA; Lee AC and Saunders WJ, (1999). Classification and behavior of canine mammary epithelial neoplasm based on Life- span observation in beagles. Vet Pathol, 36: 423-436.

Elston CW and Ellis IO (1998). Assessment of histological grade. In: Elston, C.W. and Ellis, I. O., Editors, The breast, Churchill Livingstone, London, pp: 365-384. 20G

Misdorp, W.(2002). Tumors of the mammary gland. In Meuten, D. J. Tumors in domestic animals. 4th edition, A Blackwell Publishing Company ,Iowa state press,Pp: 575-606.