

MORPHOLOGICAL AND CLINICAL CONSIDERATIONS ON CUTANEOUS SQUAMOUS CELL CARCINOMA IN DOG – CASE STUDY –

Emilia BALINT, Nicolae MANOLESCU, Roxana ANGHEL

University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Blvd,
District 1, 011464, Bucharest, Romania, Phone: +4021.318.25.64, Fax: +4021.318.25.67,
Email: emilia_balint@yahoo.com, manolescunicolae@yahoo.com, roxanghel@gmail.com

Corresponding author email: emilia_balint@yahoo.com

Abstract

The authors present a particular case of cancer evolution in a five years old mixed breed dog. Medical advice had been requested at the Faculty of Veterinary Medicine, soliciting the examination of a swelling of the first digit in the right anterior leg. Blood tests revealed no significant hematological or biochemical alterations. The radiological examination revealed a soft tissue tumor of the first digit in the right anterior leg, which did not incorporate the bone structure.

Following the surgical removal of the tumor, cytomorphological and histopathological exams were performed. Both indicated the same diagnosis: squamous cell carcinoma accompanied by a secondary infection. The cytomorphological examination revealed a particular aspect of the squamous carcinoma. This particularity is given by the coexistence of malignant neoplastic cells with giant tumoral cells conglomerates, which have monstrous nuclei of various shapes, with giant nucleoli and abundant cytoplasm, highly basophilic.

Key words: canine cancer, carcinoma, cytomorphology, squamous cell.

INTRODUCTION

Studying literature allowed us to notice that until now it has not been identified and published a similar case we present in this case study. We do not consider neither efficient nor appropriate to analyze an extreme large number of case studies on canine cutaneous squamous classic carcinoma, but to draw attention to the possibility of coexistence of two populations of malignant cells proliferation in the same tissue anatomical and clinical modified. (1, 2, 3, 4, 5).

MATERIALS AND METHODS

Following the arrival of the owner at the Clinics of the Faculty of Veterinary Medicine in Bucharest with a five-year old mixed breed male dog regarding the examination of a swelling of the first digit in the right anterior leg, led the doctor (after the clinical examination and blood tests and radiological examination) to send the dog for surgical removal of the soft tissue tumor which did not

incorporate the bone structure as the radiological exam revealed.

Cytomorphological examination was performed using panoptical stained smears (MGG) and the optical microscope from different sections of the tumor tissue. There were also collected tumor fragments for histopathological classical technique.

RESULTS AND DISCUSSION

In this particular case the cytomorphological examination revealed the coexistence of two type of cells of specific squamous carcinoma neoplastic cells. A cell type specific to the classical squamous malignant proliferation (a relatively homogenous population of cells) and a second cell type that consists of a large number of giant cells with large size of 60-70 μ , with abundant cytoplasm, intensely basophilic with a high degree of nuclear atypia. The nuclei are single or double, with 1-3 nucleoli also giant. The presence of these two cell types creates the particular aspect within this appearance of cell proliferating epithelial neoplasia.

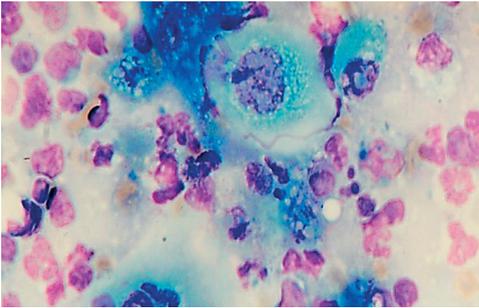


Fig 1 – cytomorphological aspects MGG x 1000 – the presence of two malignant classical squamous carcinoma cells surrounded by granulation tissue.

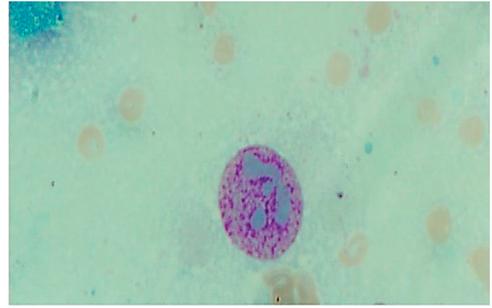


Fig 4 - cytomorphological aspects MGG x 1000 – nuclei of the tumor cells that have lost their cytoplasm and their giant nucleoli confluent.

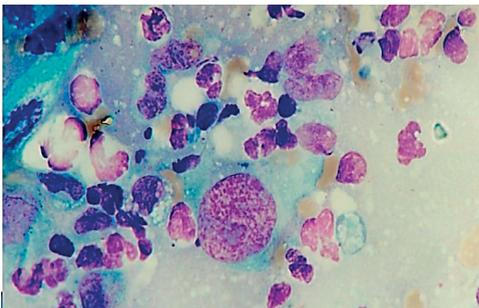


Fig 2- cytomorphological aspects MGG x 1000 – malignant cell with abundant basophilic cytoplasm with a nuclei with giant nucleoli.

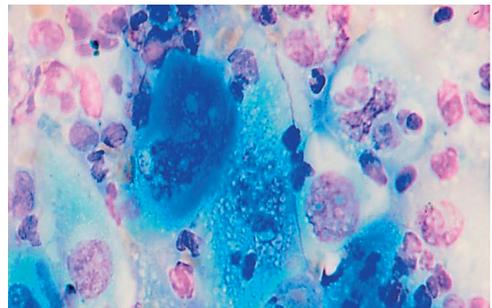


Fig 5 - cytomorphological aspects MGG x 1000 – presence of granulation tissue infiltrated with giant malignant cells with nuclei and cytoplasm atypia.

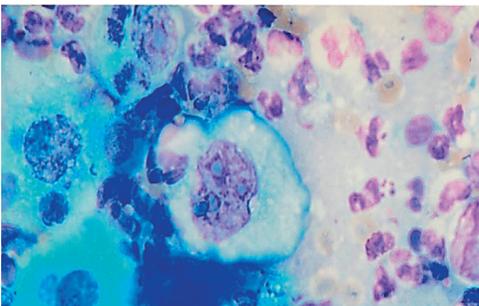


Fig 3 - cytomorphological aspects MGG x 1000 – presence of a large number of cells specific to the classical squamous carcinoma malignant proliferation with a large number of cellular atypia (giant nucleoli) and a lot of granulation tissue.

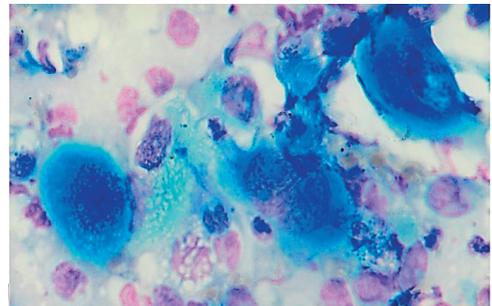


Fig 6 - cytomorphological aspects MGG x 1000 - granulation tissue infiltrated with giant malignant cells with nuclei and cytoplasm atypia.

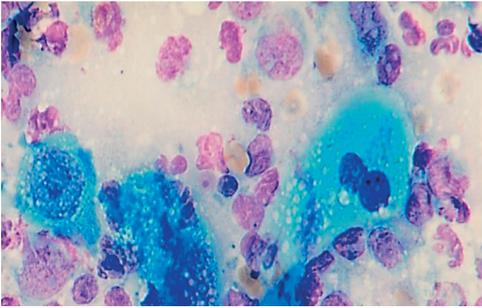


Fig 7- cytomorphological aspects MGG x 1000 - granulation tissue infiltrated with giant malignant cells with nuclei and cytoplasm atypia.

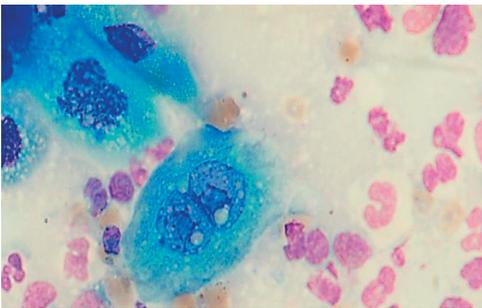


Fig 8 - cytomorphological aspects MGG x 1000 – malignant giant cell with two nuclei.

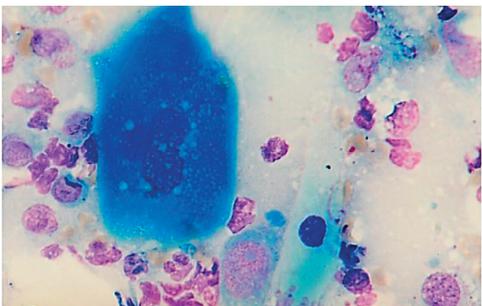


Fig 9- cytomorphological aspects MGG x 1000 – different types of cells within the squamous carcinoma malignant proliferation - coexistence of malignant neoplastic classical cells with giant tumoral cells conglomerates, which have monstrous nuclei of various shapes, with giant nucleoli and abundant cytoplasm, highly basophilic with 60-70 μ . Size.

CONCLUSIONS

A case study of a particular squamous cell carcinoma is cytomorphological described. The particularity is the coexistence of malignant cells of the epidermal squamous layer with multiple giant, monstrous cells with a highly basophilic cytoplasm. Cellularity exceeds 60-70 μ in diameter. The presence of these cells clearly indicate a highly malignant tumor process, with major implications of the evolution of the disease.

REFERENCES

1. Cowell R., Tyler R., Meinkoth J., 2008. *Diagnostic Cytology and Hematology of the Dog and Cat* (3rd Edition), Mosby, St. Louis, Missouri.
2. Manolescu N. et all. 2003. *Introducere în oncologia comparată*, Ed. Universitară "Carol Davila", București.
3. Manolescu N., Balint E., 2009. *Atlas de oncocitomorfologie la canide si feline*, Curtea Veche, Bucuresti.
4. Manolescu N., Miclaus I., Simion B., 1993. *Oncologie veterinara*. Ceres, Bucuresti.
5. Withrow S., Vail D., 2006. *Withrow & MacEwen's Small Animal Clinical Oncology* (Fourth Edition), Saunders Elsevier Publishing, St. Louis, Missouri.