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Case Report

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Clinical Cytology is a Very Useful Tool according to the Sampling Technique

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Abstract:

A cutaneous lesion with diagnosis of septic pyoderma by impression smears was diagnosed mast cell tumor by fine needle ponction from anaso-cutaneous lesion. A cytological evaluation of ipsilateral mandibular lymph node was of eosinophilic lymphadenitis. This is a cytological challenge when the smears are referred, and the samples are taken with different techniques.

1. **Keywords:** Canine; Cutaneous; Cytology; Eosinophilic Lymphadenitis; Mast Cell Tumor

2. Case presentation

A 12-year-old neutered female Bull Terrier was presented to the Hospital Veterinario Banfield-UNAM for a fast growth cutaneous lesion. During the physical evaluation, the dog had an alopecic and ulcerated naso-cutaneous lesion, and ipsilateral mandibular lymphadenomegaly. Another mass in inguinal mammary gland region was identified. At this moment she was not receiving any treatments. An impression smear was performed from the ulcerated lesion. A fine needle ponction (FNP) was performed of mandibular lymph node and inguinal mass. The unstained smears (5) were send to Experto Sur Veterinary Laboratory for cytological examination **(Figure 1 A, B).**

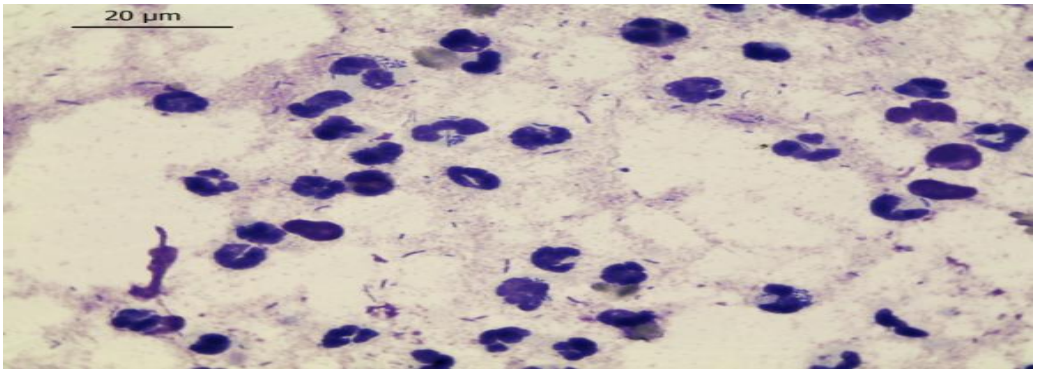

Figure 1A: Impression smears of nasal lesion.

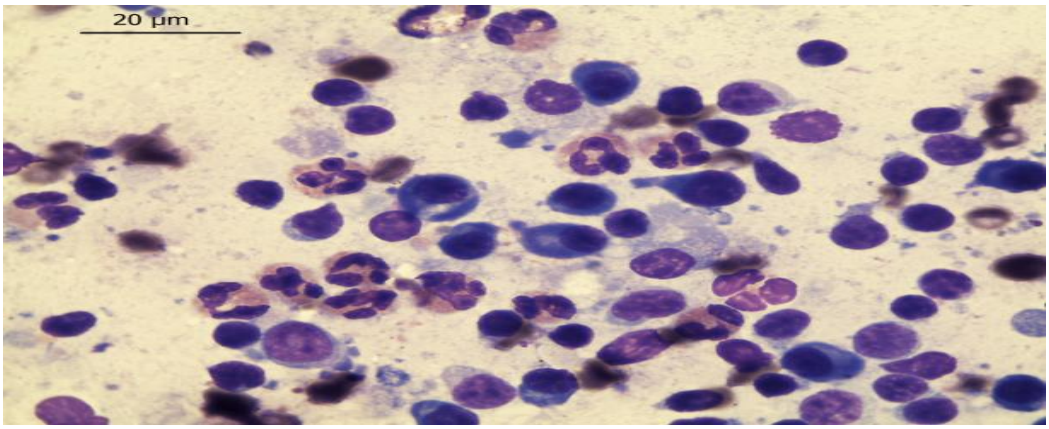

Figure 1B: Fine needle ponction of mandibular lymph node.

3. Cytological Interpretation

Impression of nasal lesion. Septic neutrophilic inflammation. Mandibular ipsilateral lymph node. Eosinophilic lymphadenitis and plasma cell reactive hyperplasia. Impression from the ulcerated naso-cutaneous lesion was highly cellular, represented by neutrophils mainly in oncosis and contained moderate number of bacterial coccobacillus, rods and few bacterial cocci, both intracellularly and extracellularly. The lymph node was moderately cellular with predominance of small lymphocytes (50%), eosinophils (30%) and plasma cells (20%). This cytological discordance between cutaneous lesion and lymph node, warrant to doa FNP.

4. Additional Test Results

A FNP was performed on the naso-cutaneous lesionand smears were submitted for cytological evaluation **(Figure 2 A,B)**. The smears were highly cellular; the cells were round, moderate amount of cytoplasm with distinct borders and moderate numbers of metachromatic granules. The cells had oval to round slightly euchromatic nucleus; few cells were binucleate. In some cells the nucleoli was evident. Anisocytosis and anisokaryosis were mild and mitosis were not seen. Elevated numbers of eosinophils and mild of neutrophils was observed. Abundant erythrocytes and mild to moderate amount of metachromatic granules in the background.

The cytological diagnosis was Mast cell tumor grade II

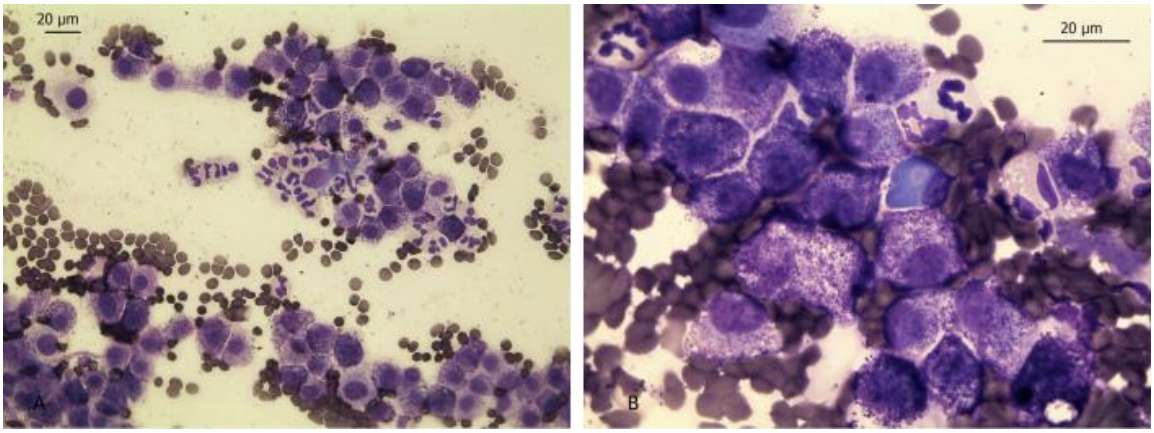

Figure 2: Fine needle ponction of nasal lesion.

5. Discussion

Canine mast cell tumors in dogs represent the 16.7% of all cutaneous and subcutaneous tumors in dogs from Mexico **[1]**. Impression smears from ulcerated or exudative superficial lesions are indicated; nevertheless, frequently yield only secondary septic inflammation **[2]**. In some cases, neoplastic cells may exfoliate in ulcerated lesions. The cytological discordance between superficial ulcerate cutaneous lesion and lymph node, warrant FNP sampling around the ulcerated tissue. It is interesting to find a lymph node absent of mast cells and high number of eosinophils. Especially, because the most common sites for cutaneous mast cell tumor metastasis are the regional lymph nodes, spleen, and liver **[3]**.The mast cell-eosinophil axis by means of chymase, a mast cell-specific protease, enhances eosinophil survival and recruits eosinophils on site **[4]**. Tryptase produced by mast cells, can stimulate eosinophil activation and degranulation **[5]**.Other mediators are produced by a wide variety of cells, including lymphocytes, mastcells, epithelial cells, and eosinophils themselves **[6]**. All these molecular activity does not explain why mast cells are not present in lymph node, neither eosinophils in the mast cell tumor. The choice of the anatomical plans and the sampling method are very important for a successful diagnosis.

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