

## **Histopathological study of nasal osteosarcoma in calf in Basrah**

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### **Abstract:**

Four cases growth tumor masses of osteosarcoma in nasal origin of calves which it was characterized by solid, limit, clear, closed end and projected surface mass tumor as well as it was adhesion with some part of skeleton bone. The type of nasal discharge is bloody purulent. On the cut surface there were highly vascular with marked hemorrhage. The weight measure of tumor mass about one kilogram. There were many pathological changes like congestion and odema, fibroplasia and periosteal new bone formation accompanied by different shape and size of neoplastic cells like pleomorphic cells as well as there were muscular atrophy.

### **الخلاصة:**

تم تسجيل ست حالات للورم العظمي Osteosarcoma في العجول تتميز بنمو كتلة ورمية فوق الانف ملتصقة الى بعض اقسام الهيكل العظمي وذو طبيعة صلبة ومحددة بشكل واضح ومقلعة وذات شكل مسنن وعند القطع شوهد نزول الدك كما لوحظت افرازات انفية قيحية دموية، بلغ وزن الكتلة الورمية واحد كيلو غرام، اما التغيرات المرضية فهي عديدة من ضمنها الاحتقان والخزب وزيادة في تكوين الالياف fibroplasias وتكوين خلايا سرطانية مختلفة الاشكال pleomorphic cells وتكوين عظم سرطاني جديد periosteal new bone formation ترافق هذه الاعراض ضمور في العضلات المحاطة بالمنطقة muscular atrophy.

### **Introduction:**

Micheal ,*et al* (2008)(1) show that osteosarcoma is enlargement primary tumor of bone consisting of malignant osteoid, bone and/ or cartilage formation, which they are sure the (OSA) of medullary origin is most common primary bone tumor in the dogs. The (OSA) is a rapidly growing, destructive neoplasma of bone that account for 80% of all malignant tumors in animals (2,3). Incidence of (OSA) is slightly more common in male than female (4). The (OSA) are recognized rather frequently in the dog and cat rather infrequently horses and cattle as well as rarely in the other domesticated animals (5). OSA of soft tissues is a malignant mesenchymal tumor whose cells produce osteoid substance (6). OSA arising from the ribs, cranial vault and jaws first appear as firm bony swellings those arising from the nasal cavity present as unilateral or bilateral nasal hemorrhage or purulent nasal discharge (OSA) of vertebral column will initially present with neurologic signs (1). Ionizing, radiation, chemical carcinogens, foreign bodies (including metal implants such as internal fixators, bone transplants and preexisting skeletal abnormalities such as sites of healed fractures contribute to deriver of (OSA). In addition there have been correlation with genetic predisposition to tumor development animals with (OSA) have been found to have aberration of the P53 tumor suppressor gene (7). OSA may have differentiated, fibroblastic, osteoblastic, telangectatic gaint cell or chondroblastic based upon the character of tissue neoplastic cell, population and the types of matrix produced (8,9).

### **Materials and Methods:**

During the period from April 2006 to August 2008, 6 cases of nasal osteosarcoma 3-4 months. Old calves were reported and examined in the private clinic of one of the authors (A.A. Al-Fars). The calves were brought to the clinic by owners for treatment. The routine surgical operation was achieved through used xylazine 0.11-0.22 mg/kg. B.W. as a sedative with analgesic properties and 1.1-2.2 mg/kg. B.W. Lidocaine infiltrative. The cancer mass was performed surgical removal by

extraction from nasal part. Mass was perfused with normal saline solution and then fixed in 10% formalin for 48 hrs. Specimens were trimmed to suitable sizes, dehydrated, cleared, embedded in paraffin wax, sectioned at 5mm. thickness stained with hematoxyline and eosin stain examined by a light microscope (10).

**Results:**

Clinical signs there are swelling, pain, visible enlargement and cool of effected area and than the lesion increases in the size the swelling becomes warm and painful as a result of periosteal elevation and stretching expansion of tumor is accompanied by congestion, odema, fibroplasia (fig.1, 2) and muscle atrophy (fig.3). There were fine needle aspirates of (OAS) contain mesenchymal cells that appear round, plump or fusiform (fig. 4) these are scattered singly or in small clusters. Individual neoplastic cells may display anisocytosis, anisokaryosis, karyome eccentrically located nuclei, large nucleoli and basophilic vacuolated cytoplasm with fine pink granules (fig. 5) osteoclasts are large cells ard multinucleate. There were formations of new borne tumor (fig.6) or formation of tumor osteoid.

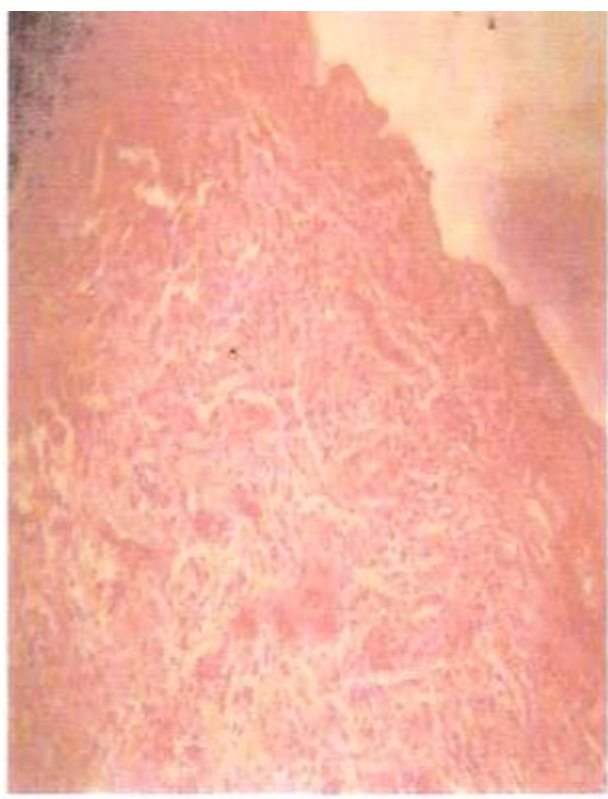


Fig.1: section of tumor note congestion of capillaries and odematous fluid (H&E)

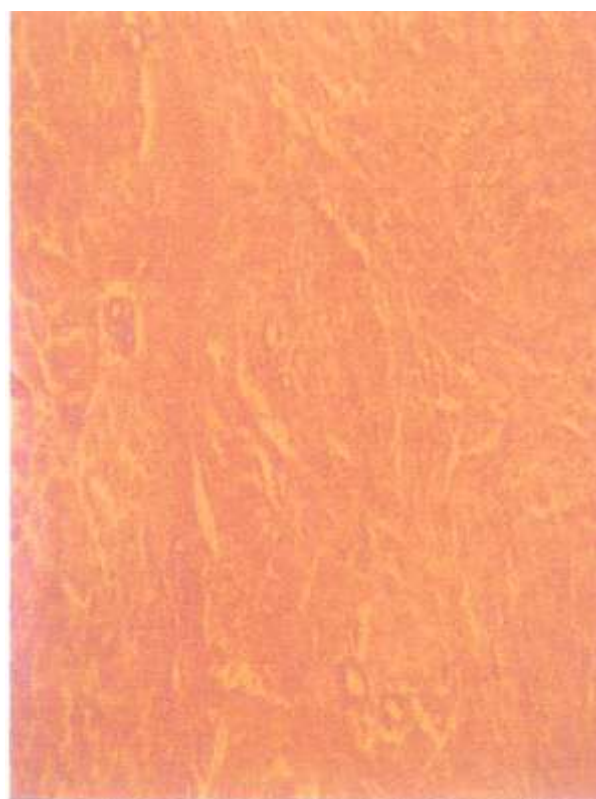


Fig.2: section of tumor note fibroplasia (H&E) 100X

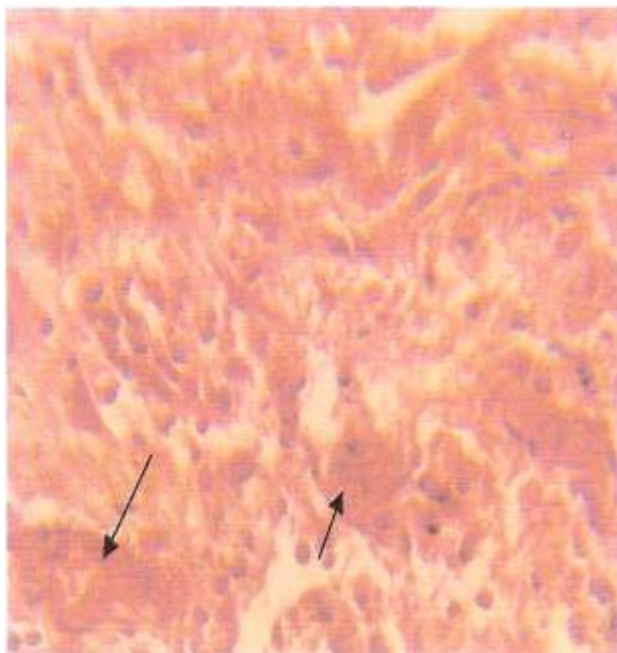


Fig.3: section of tumor note muscles atrophy (H&E) 100X



Fig.4: section of tumor note polymorphonuclear cells specially giant cells (H&E) 400X

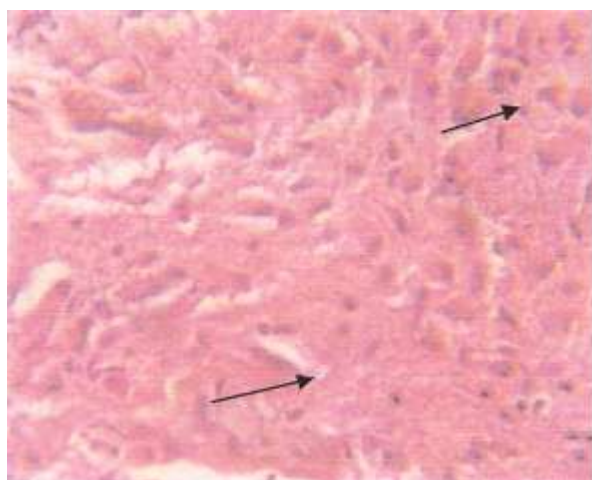


Fig.5: section of tumor note large cells with basophilic vacuolated cytoplasm with fine pink granules (H&E) 400X



Fig.6: section of tumor note formation of tumor osteoid (H&E) 400X

**Discussion:**

In this study, there is pain associated with present of tumor due to cancer cells are produced prostaglandins associated with nociceptors as well as promote inflammation (11). Onset of osteosarcoma is different site of the body, age, sex and origin of the animals part. In this study we are found. The (OSA) are the nasal origin of the calf compared with other research the were said that the breeds of dogs which it was present with present 3.1% in nasal origin that mean few percent to produce this tumor (12). (OSA) originates most commonly in the metaphyses of long bones of forelimbs especially the distal radius proximal humors in dog, but it was rare in the cattle (3). The presence of different type of neoplasma was result of contamination of the air by different pollution by war.

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