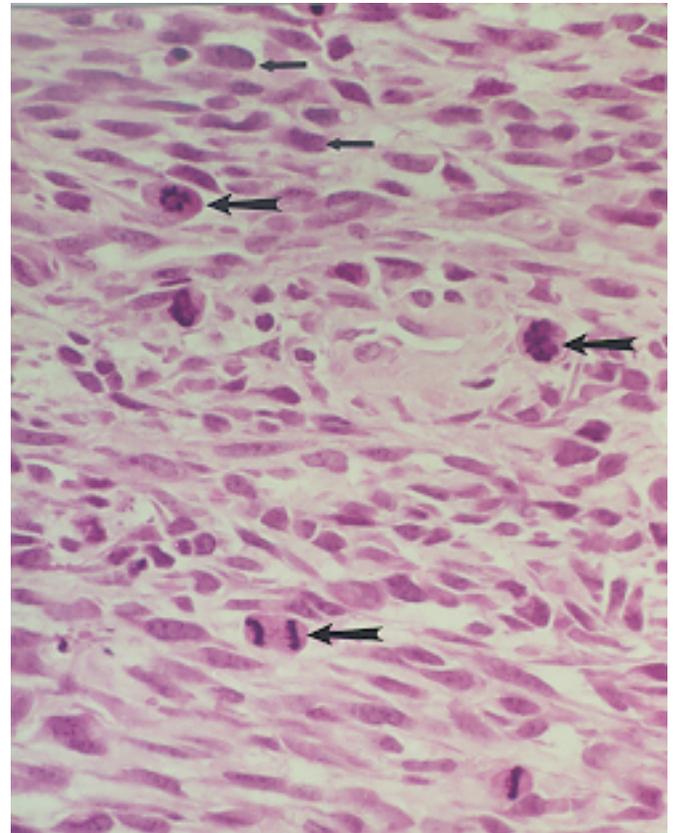


## OSTEOGENIC SARCOMA (OSTEOSARCOMA)

After multiple myeloma, osteogenic sarcoma is the most common bone malignancy. Generally it is found in long bones in teenage patients. Occasionally there is an osteogenic sarcoma of the head and neck (mandible, paranasal sinuses, skull). Osteogenic sarcoma may harbor chondroblastic or fibroblastic tissue since the osteoblast is a multipotential cell that may differentiate differently. Some areas may have a totally undifferentiated appearance with no evidence of any type of intercellular material, but to be called an osteosarcoma, malignant osteoid needs to be found in some part of the tumor.

Microscopically, tumor giant cells are common and there are frequent mitoses, often abnormal. Nuclei are pleomorphic and hyperchromatic. The cells are large, spindle-shaped or ovoid. The tumor metastasizes by the bloodstream to the lungs and, overall, the prognosis is poor.

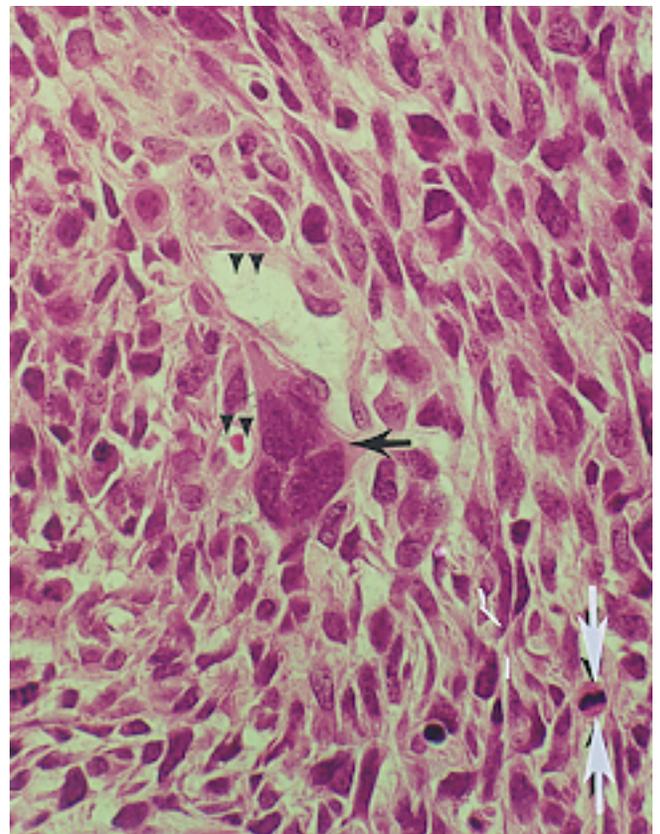
Osteogenic sarcoma, maxillary sinus and nasal septum. Several mitoses are seen (large arrows), some abnormal. Cells are large, plump and spindle-shaped or ovoid, nuclei pleomorphic (small arrows). No osteoid is seen in this image.

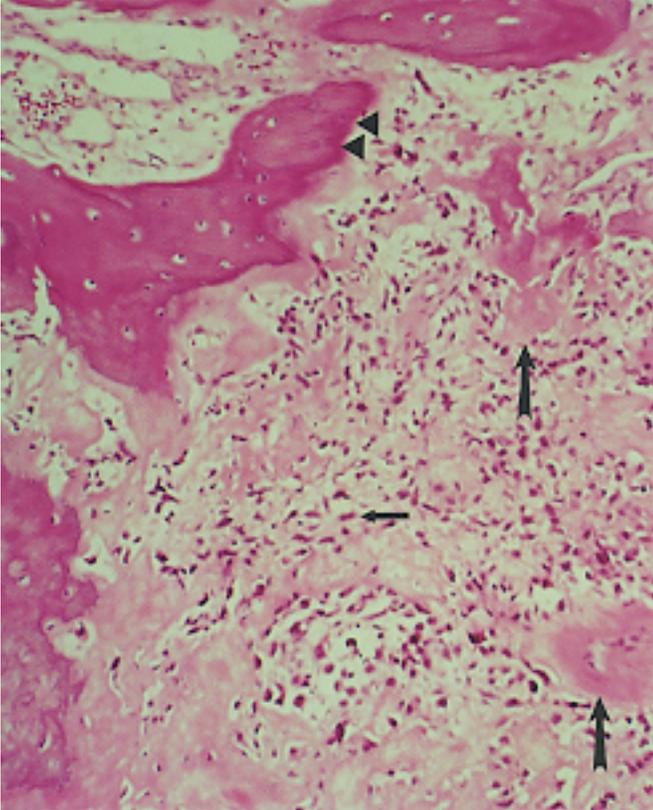


Osteogenic sarcoma, high power photo of tumor seen upper left. Extreme nuclear pleomorphism, prominent nucleoli (small arrows), abnormal mitosis (large arrow). Cells vary in shape from spindle to polygonal (triangles).



Osteogenic sarcoma, tumor giant cell (large arrow). Small blood vessels (triangles) are a prominent feature of this tumor and their thin walls favor easy penetration by tumor cells and thus blood stream metastasis. Mitotic figure (white arrows).





Osteogenic sarcoma. The tumor is a mixture of malignant mesenchymal cells (small arrow) and malignant osteoid (large arrow), some of which is mineralized (triangles).