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# Benign Tumors of the Bone: Differential Diagnosis

**Frank Jorch***

*Department of Orthopedics, Institute of Health Care, Hessen, Germany*

***Corresponding author:** Frank Jorch, Department of Orthopedics, Institute of Health Care, Hessen, Germany, E- mail: frankj@aph.sa.de*

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## EDITORIAL NOTE

Osteochondromas (OCs) being benign tumors of bone is detected predominantly in the metaphysis of long bones with around 35% of the cases arising from the bones about the knee joint. These tumors of bone are mostly asymptomatic but can show symptoms of pain if a fracture occurs at the base of the tumor, nerve impingement syndromes [1]. OCs usually presents as solitary or multiple forms, the former is roughly six times more common than the multiple form, the latter presents generally in cases of hereditary multiple exostosis [2,3]. A solitary Osteochondroma generally occurs in children and adolescents. The prevalence of primary bone tumors of fibula is 2.5%. Pedunculated solitary OCs is more common than the sessile OCs. Here we present a sessile solitary Osteochondroma arising from posteromedial aspect of proximal fibula in an adolescent in an unusual location.

In general, because tumors are fairly vascular structures, they are susceptible to bleed throughout the surgery. Systemic effects of the tumor and chemotherapy and radiotherapy also contribute to the preponderance for the bleeding [4]. In particular, renal cell and thyroid metastases, with marked neovascularization to affected areas, frequently hemorrhage considerably during surgery, more so than other forms of osseous metastasis.

60% of spinal metastasis, 40% of benign primary spinal neoplasms, and 85% of all malignant primary spinal neoplasms are hypervascular. In addition to renal and thyroid metastasis, other examples of highly vascular tumors prone to bleeding include breast carcinoma, prostate carcinoma, hemangiomas, aneurysmal bone cysts, melanomas, osteoblastomas, osteosarcomas, and giant cell tumors [5]. Some independent indicators of major bleeding include the procedure type, cancer type, female patients and co-existing coronary artery disease or chronic obstructive pulmonary disease [6].

A potentially large blood loss significantly complicates surgery for patients with hypervascular tumors. Management of patients undergoing surgery for tumors involving the spine or pelvis is especially problematic due to the potential for massive and ongoing hemorrhage. Pelvic metastases often hemorrhage significantly regardless of histological subtype, and should be considered for preoperative embolization, especially when lesions are large.

Embolization involves intentional blockage of a vessel to prevent blood flow into that vessel. Preoperative tumor embolization may be considered in order to prevent or reduce large blood loss when operating on a highly vascular tumor. Embolization can facilitate the surgery by reducing intraoperative hemorrhage, permitting better visualization of the surgical field, and facilitating more optimal tumor resection. Futhermore, it can help prevent life-threatening hemorrhage and the need for transfusion, as well as to potentially decrease surgical time and related complications. Embolization can also contribute to promoting ischemia in the tumor, leading to necrosis. A chemotherapeutic medication can be added to the embolic agent, to further enhance its effect. surgery by reducing intraoperative hemorrhage, permitting better visualization of the surgical field, and facilitating more optimal tumor resection. Futhermore, it can help prevent life-threatening hemorrhage and the need for transfusion, as well as to potentially decrease surgical time and related complications. Embolization can also contribute to promoting ischemia in the tumor, leading to necrosis. A chemotherapeutic medication can be added to the embolic agent, to further enhance its effect.

The neoplasms of bone account for only 0.2%-0.5% of the overall human tumour biology [7]. The uncommonness of bone tumours has contributed to the paucity of the relative frequency, incidence rates and risk factors of the various subtypes of bone tumours [7]. Most bone tumours arise de-novo from genetic mutations; but numerous risk factors such as chemotherapy, irradiation, foreign bodies, bone infarcts and pre-existing bone lesions have been implicated [8]. The aetiology of bone cancers is better established than their benign counterparts [9].

The classification of bone tumours by the World Health Organization (WHO) on 2013 has been developed with the framework and concept of the cellular origin which is widely accepted. This classification is based on the line of histological differentiation by reflecting the type of intercellular matrix material produced by the particular bone tumour.

## References

1. Manoharan A, Suresh SS, Sankaranarayanan L (2013) Proximal Fibular Osteochondroma Producing Common Peroneal Nerve Palsy in a Post-Cesarean Section Patient. Oman Medical Journal 28.
2. Mulder JD, Schutte HE, Kroon HM, Taconis WK (1993) Radiologic Atlas of Bone Tumors. (2nd Edtn) Elsevier, Amsterdam.
3. Bovee JVMG, Hogendroon PCW (2002) Multiple osteochondromas. In World Health Organization Classificationof tumors. Pathology and Genetics of Tumors of Soft Tissue and Bone. IARC Press, Lyon
4. Teixeria LEM, Miranda RH, Ghedini DF, Aguilar RB, Novais ENV, et al. (2009) Early complications in the orthopedic treatment of bone metastases. Rev Bras Ortop 44: 519-523.
5. Peabody TD, Attar S (2014) Orthopaedic Oncology: Primary and Metastatic Tumors of the Skeletal System. Springer International Publishing, Switzerland.
6. Oberweis BS,Nukala S, Rosenberg A, Guo Y, Stuchin S (2013) Thrombotic and Bleeding Complications Following Orthopedic Surgery. Am Heart J 165: 427-433.
7. Katchy KC, Ziad F, Alexander S, Gad H, Abdel Mota'al M (2005) Malignant bone tumors in Kuwait: a 10- year clinicopathological study. Int Orthop 29:406-411.
8. Fletcher CDM, Unni KK, Mertens F (2002) World Health Organization classification of tumours: Pathology and genetics of tumours of soft tissue and bone. IARC Press: Lyon. 225-232.
9. Mohammed A, Isa HA (2007) Patterns of primary tumours and tumour-Like lesions of bone in Zaria, Northern Nigeria: A review of 127 cases. Wesr Afr J Med 26:37-41.