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### Unusual case of transformation of an ABC (aneurismal bone cyst) into leiomyosarcoma

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**Introduction:** Aneurismal Bone Cyst (ABC) transformation into malignant lesions has never been demonstrated. Often cases of misdiagnosis or misinterpretation of teleangectatic osteosarcoma have been reported in Literature. The aim of the study is to report a case of malignant transformation of on ABC with pathological fracture into a soft tissue leiomyosarcoma.

**Methods:** Girl, 19 years old, pathological fracture of the right distal femur while stepping up stairs. No comorbidities and no previous pain at the right knee. X-ray and CT and subsequent fracture stabilisation with external fixator were performed at the local hospital. The patient was referred and transferred to a National reference centre. An ABC was diagnosed with an open biopsy. An accurate curettage of the lesion followed by bone grafting and plating was performed and a regular follow up was set up after diagnosis confirmation

**Results:** A regular radiological evolution was observed till 9 months postop. After 9 months an asymptomatic reabsorption of the bone grafts was revealed at the follow up Xray and the MRI showed a mass in the soft tissue surrounding the plate and invading the distal femur. An open biopsy was performed revealing a low grade leiomyosarcoma. Pathology was also revised by an international reference centre and a resection of the distal femur with the surrounding soft tissues and the reconstruction with a modular prostheses were performed.

**Conclusion:** This case report could demonstrate a never described malignant transformation of the vessels supplying the ABC. Further studies and an international pathologists consensus are mandatory to hypothesize the cytogenetic process occurred and potentially extend it to other malignant lesions.