



Aspects of Diagnosis and Treatment of Aneurysmal Bone Cysts in Romania and the U.S.A.

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1. Introduction

- Aneurysmal bone cysts are benign tumors of bone that usually present with marked areas of osteolysis.
- The incidence is 1 in 4,000,000 cases.
- 80% of cases appear in patients with ages less than 20.
- Any bone can be affected; however, the preferential location is represented by the proximal tibial epiphysis and the vertebral column.
- We present a case of a 19 year old patient who presented to Sinai Hospital of Baltimore, U.S.A. for treatment of an osteolytic bone lesion with dimensions of 61/43mm in the proximal, postero-medial region of the left tibia.

2. Clinical Vignette

- The patient stated that he consulted 3 orthopedic specialists in Romania.
- The patient presented to the abovementioned specialists for pain located on the level of the left knee that was present both during the day as well as during the night. The patient felt progressive muscle weakness, inability to run and induration located postero-medially of the left knee joint.
- The medical investigations included a complete blood panel, coagulation, biochemistry investigations, urine analysis, as well as imaging studies of the left knee including X-rays and ecography.
- Alcaline phosphatase was not evaluated.
- After evaluating the patient's gathered body of medical data, the patient was informed that he has arthritis and nonsteroid antiinflammatory drugs were prescribed.
- Only after a 4th consult, the patient was sent to perform an MRI that has revealed the presence of an osteolytic tumor (Fig. 3,4).
- The patient was informed that the most likely diagnosis would be a giant cell tumor and the treatment options would be the excision of the proximal epiphysis of the left tibia and installing a prosthesis.

3. Treatment

- The treatment protocol of aneurysmal bone cysts in the U.S.A. is surgical curettage of the bone defect, phenol application to prevent local recurrence, and application of either bone cement, autograft or allograft from the bone bank.
- The patient chose the application of allograft.
- Besides the abovementioned treatment, the patient had received a piece of fibula introduced for structural support.
- Frozen sections performed revealed that it was indeed an aneurysmal bone cyst.

4. Results

- Post-Anesthesia recovery was prompt and uneventful.
- The patient regained full mobility at three months after the surgical intervention (fig. 7).
- At 2 years follow up, the patient performed a repeat radiography which showed positive response to treatment.
- The fibula placed inside the bone has been resorbed into the bony structure of the tibia (Fig. 8).

5. Discussion

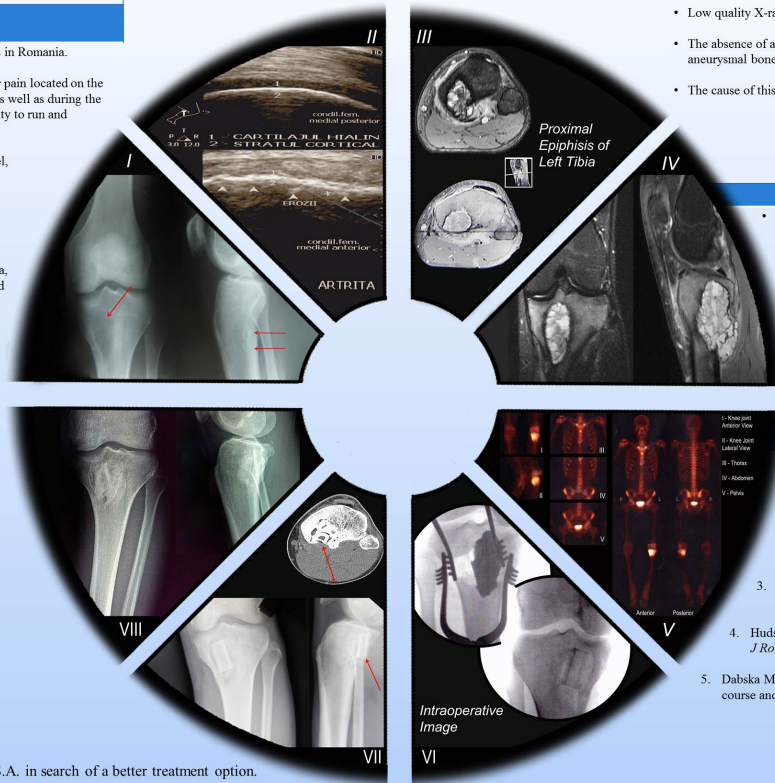
- Because of the low incidence of aneurysmal bone cysts, this disease is rarely included in the differential diagnosis of osteolytic bone lesions.
- Low quality X-ray films can impede a correct diagnosis.
- The absence of any abnormalities in the blood panel can mask the presence of an aneurysmal bone cyst.
- The cause of this disease is unknown.

6. Conclusion

- Aneurysmal bone cysts are osteolytic lesions that can easily be masked by the absence of any modifications in the blood panel as well as the subtle modifications on the X-ray films.
- The methods of diagnosis and treatment of aneurysmal bone cysts in Romania and the U.S.A. differ significantly.

7. Bibliography

- Adam Greenspan M.D. FCAP, Gernot Jundt MD, Wolfgang Remagen MD, Aneurysmal Bone Cyst, *Differential Diagnosis in Orthopaedic Oncology*, October 16, 2006, pp 409-424
- Jaffe HL. Aneurysmal bone cyst. *Bull Hosp Joint Dis* 1950; pp 3-13.
- Godfrey LW, Gresham GA. The natural history of aneurysmal bone cyst. *Proc R Soc Med* 1959; pp. 900-905.P.453
- Hudson TM. Fluid levels in aneurysmal bone cysts: a CT feature. *Am J Roentgenol* 1984; 141:1001-1004.
- Dabska M, Buraczewski J. Aneurysmal bone cyst. Pathology, clinical course and radiologic appearances. *Cancer* 1969; 23: 371-389.



- The patient refused treatment and went to the U.S.A. in search of a better treatment option.
- At Sinai Hospital of Baltimore, the patient was told that the imaging studies were suggestive of an aneurysmal bone cyst.
- The patient underwent bone scintigraphy (Fig. 5) to exclude the presence of any metastasis.
- The patient remained for definitive treatment at Sinai Hospital.