

## Aneurysmal Cyst of the Proximal Radius in a 43 Year Old Patient: A Case Report

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### Abstract

### Case Report

This case study presents a 43-year-old female patient diagnosed with an aneurysmal bone cyst located at the proximal portion of the radius. Diagnosis, treatment and clinical outcomes are discussed.

**Keywords:** Aneurysmal Cyst, radius fracture, bone graft.

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## INTRODUCTION

Aneurysmal cysts are benign but aggressive bone lesions, often found in long bones such as the femur and tibia. However, they can also affect other bones, such as the radius. This article presents a case study of a 43-year-old female patient with an aneurysmal cyst of the proximal part of the radius, treated by curettage, autologous graft and osteosynthesis with two intramedullary pins.

## CASE REPORT

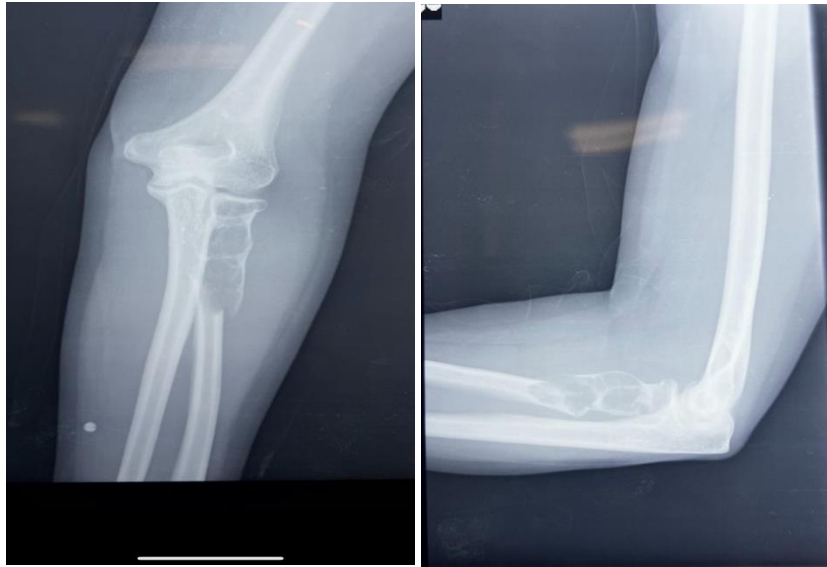
A 43-year-old woman presented with progressive pain and swelling of the right arm, without notable traumatic history. Clinical and radiological examinations revealed an expansive, multiloculated and osteolytic lesion of the proximal part of the radius, compatible with a bone aneurysmal cyst. Diagnosis Standard radiography imaging confirmed the presence of an osteolytic lesion characteristic of an aneurysmal cyst and fracture (Figure 1). An ultrasound-guided biopsy

performed under local anesthesia confirmed the histopathological diagnosis.

The Surgical Intervention takes place in 3 stages:

- **Curettage:** A surgical incision was made to expose the lesion. Complete curettage of the cyst was performed to remove the tumor tissue.
- **Autologous Bone Graft:** A bone graft was taken from the iliac crest and used to fill the cavity created by the curettage.
- **Osteosynthesis:** To stabilize the bone structure, two intramedullary pins were inserted into the radius (Figure 2).

Post-Operative Follow-up the patient was followed clinically and radiologically for 12 months. Radiological controls showed good integration of the bone graft and consolidation without recurrence of the lesion. Arm function was completely restored, with no residual pain (Figure 3).



**Figure 1**



**Figure 2**



**Figure: 3**

## DISCUSSION

Aneurysmal bone cysts are rare lesions, accounting for approximately 1% of all primary bone tumors. They are most often diagnosed in children and adolescents, with a slight female predominance. These cysts may arise de novo or be secondary to other bone lesions, such as giant cell tumors, chondroblastomas, or non-ossifying fibromas (Mankin *et al.*, 2005). Aneurysmal Cysts are characterized by a proliferation of connective tissue containing multiple blood-filled cavities, often surrounded by reactive bone. The exact pathogenesis remains unknown, but some studies suggest a hemodynamic origin, where a local increase in blood pressure in the bone could play a role (Biesecker *et al.*, 1970). The diagnosis of Aneurysmal Cysts is based on a combination of radiological imaging and histopathological examination. Radiographs typically show a well-defined, expansive, osteolytic lesion with cortical thinning. MRI is particularly useful for assessing lesion extension and internal features, such as fluid levels and septations, which are pathognomonic for Aneurysmal Cyst (Park *et al.*, 2016). Treatment for Aneurysmal Cysts varies depending on the location, size and behavior of the lesion. Intralesional curettage remains the mainstay of treatment, but it is often combined with bone grafting to fill the residual cavity and provide mechanical stability (Leithner *et al.*, 1999). Curettage and Autologous Graft In this case, an exhaustive curettage was performed to remove the entire pathological lesion. This procedure is essential to minimize the risk of recurrence, which can reach 20-30% after a simple curettage (Campanacci *et al.*, 1986). An autologous bone graft was harvested from the iliac crest and used to fill the cavity. Autologous transplantation is preferred due to its immunological compatibility and superior osteogenic potential (Park *et al.*, 2016). Osteosynthesis with Intramedullary Pins The use of intramedullary pins to stabilize the radius after curettage and grafting is an effective approach to prevent pathological fractures and promote bone healing. Pins provide sufficient mechanical support to allow early mobilization and reduce postoperative complications (Mankin *et al.*, 2005). Potential complications after treatment of Aneurysmal Cyst include local recurrence, infection, pathologic fracture, and nonunion. In this case, regular radiological monitoring showed good integration of the bone graft and consolidation without recurrence of the lesion. Arm function was completely restored, with

no residual pain, underscoring the effectiveness of the chosen surgical approach. Although surgical treatment remains the mainstay of management of aneurysmal cysts, non-surgical alternatives such as selective arterial embolization or ethanol sclerotherapy have been explored, with promising results in some studies (Biesecker *et al.*, 1970). However, further research is needed to assess the long-term effectiveness and safety of these approaches.

## CONCLUSION

In conclusion, the treatment of aneurysmal bone cysts by curettage, autologous grafting and intramedullary osteosynthesis can lead to excellent functional and radiological results. Close post-operative monitoring is essential to detect any early recurrence and ensure optimal healing.

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