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## Role of intralesional polidocanol in management of Aneurysmal bone cyst.

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### Abstract

**Background:** Aneurysmal bone cyst is a true benign bone tumor often seen in young children and adolescents. ABCs often present with impending or pathological fracture due its aggressive cortical erosion. Modalities of treatment *viz:* Curettage with or without graft, Enbloc excision, cryotherapy, argon beam laser, radiotherapy, arterial embolization are often associated high morbidity & high complication rates.

**Objectives:** The aim of this study was to evaluate the clinical & radiological efficacy of polidocanol in the management of Aneurysmal bone cyst.

**Material & Methods:** After radiological and cytological confirmation of ABC, 18 patients meeting the inclusion criteria were included in this study. The patients were treated with intralesional polidocanol under fluoroscopic guidance.

**Results:** The mean age of patients was 8.2 years. Mean number of injections required was 3.2, with three patients showing radiological resolution after single injection. Recurrence was seen in 1 patient after showing initial resolution. There were no cases of anaphylaxis or local inflammatory reactions.

**Conclusion:** Polidocanol is a safe and inexpensive alternative to other modalities of treatment and should always be first line of treatment for the management of the Aneurysmal bone cyst.

**Keywords:** Aneurysmal bone cyst, polidocanol, cryotherapy

### Introduction

Aneurysmal bone cyst is a true benign bone tumor often seen in young children and adolescents, occurring equally in both the sexes <sup>[1]</sup>. Radiologically aneurysmal bone cyst is lytic, expansile lesion in the metaphysis with cortical thinning and a subperiosteal thin shell of bone <sup>[2]</sup>. It is mainly located in the metaphysis of the long bones and in the spine <sup>[3]</sup>. Symptoms of Aneurysmal bone cyst include pain and swelling in close proximity to the affected bone. Due to its aggressive erosion of bony architecture, Aneurysmal bone cysts often present with impending or pathological fracture, which can acutely worsen symptoms <sup>[4]</sup>. As it shares several clinical and radiological features with telangiectatic osteosarcoma, biopsy needs to be done before proceeding with any form of treatment <sup>[5]</sup>. Various modalities of treatment for Aneurysmal bone cyst include <sup>[4]</sup>:

1. Curettage with or without bonegraft.
2. Percutaneous clerotherapy
3. Arterial embolization
4. Curettage followed by adjuvants *viz;* cement, high-speed burr, argon beam, phenol, cryotherapy.

Percutaneous sclerotherapy is relatively novel method of treatment for aneurysmal bone cyst, and obviates the potential functional disabilities such as joint stiffness and shortening which are commonly seen with other methods of treatment <sup>[2]</sup>.

In this study we evaluated the clinical & radiological efficacy of polidocanol in the management of Aneurysmal bone cyst.

**Material and Methods**

This study was undertaken in Govt. Medical College Anantnag, J&K India from December 2018 to June 2020 on 18 patients meeting the inclusion criteria. After explaining all the risks & complications of the procedure, a written consent was taken from the parents of all the patients.

**Inclusion criteria**

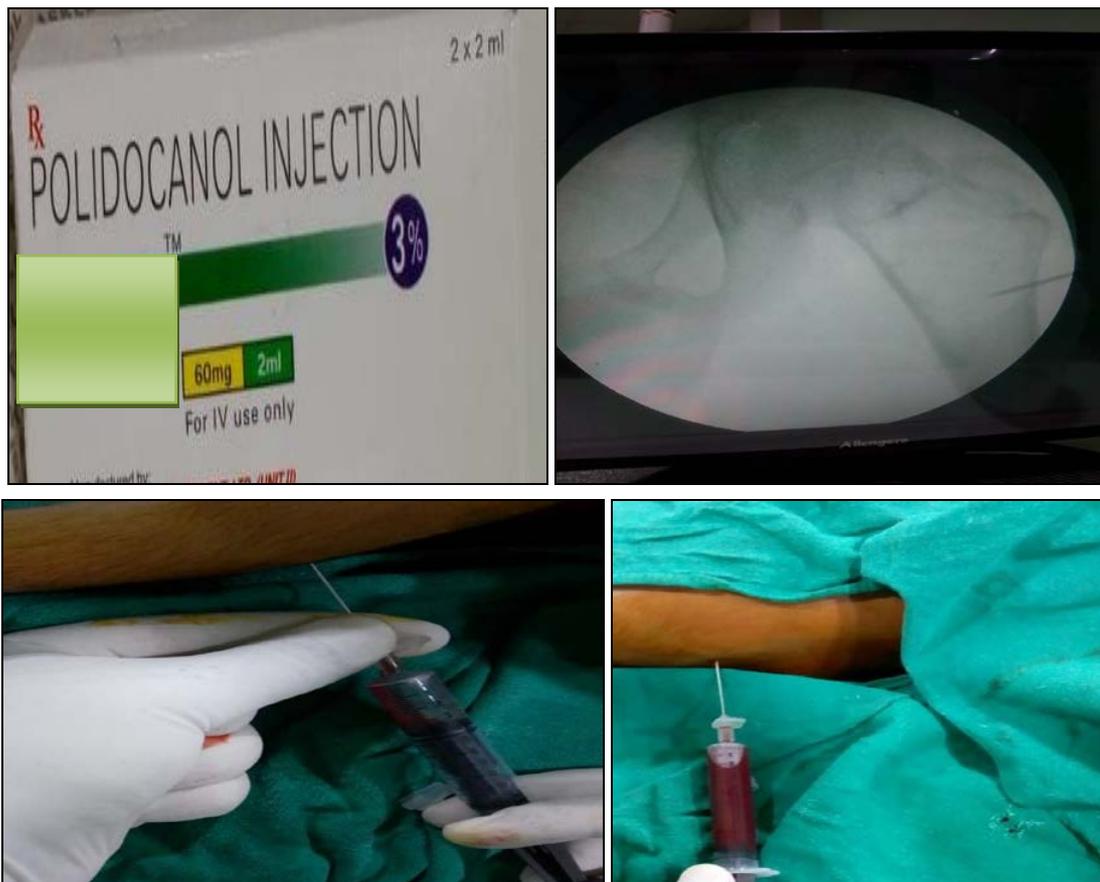
1. Both sexes
2. Age group 5-15 years.
3. Radiological and cytological confirmation of Aneurysmal bone cyst.

**Exclusion criteria**

1. Aneurysmal bone cyst associated with pathological fracture.

2. Aneurysmal bone cyst in axial skeleton.

All the patients with clinical & radiographic features of Aneurysmal bone cyst were evaluated on outpatient basis. Patients were subjected to MRI and diagnosis was confirmed with intralesional biopsy. Once diagnosis was made, patients were admitted a day before the procedure and all other necessary investigations were done. The procedure was done under sedation or short general anesthesia in case of patients with age of less than 10 years. Site of lesion & position of needle was confirmed under fluoroscopy and 2-4 mg Polidocanol/kg body weight was injected using a 16G cannula. Patients were discharged after 8 hours of the procedure and were called for 4 weekly follow up for clinical & radiological assessment and next injection if needed.



**Fig 1:** Clinical images during procedure.



**Fig 2:** Follow up pictures (4weeks, 8weeks &12 weeks)

## Results

Of the total 18 patients included in the study, there were 10 males & 8 Females. The mean age was 8.2 years. The mean number of injections was 3.2, with three patients showing radiological resolution after single injection. Only 3 out of 18 patients reported with pain on their first follow up of 4 weeks, which eventually subsided at 8 weeks. Recurrence was seen in 1 patient after showing initial resolution. There were no cases of anaphylaxis or local inflammatory reactions.

## Discussion

Curettage with or without bone grafting has long been advocated for the management of Aneurysmal bone cysts but has a recurrence rate as high as 59% [6]. Enbloc excision offers highest cure rates among the treatment modalities available but at the cost of high morbidity to the patients [6]. Other procedures also *viz*: cryotherapy, argon beam laser, radiotherapy, arterial embolization have low cure and high complication rates [4]. No statistically significant difference was found by Kececi *et al.* between curettage alone, curettage with high-speed burr, and curettage, high-speed burr, and phenol/alcohol in combination [7]. In a review of 72 patients with a mean follow-up of 34 months, Rastogi *et al.* [2] found satisfactory results in more than 97% patients with a clinical response of 84.5 % and a mean of 3 injections per patient. Varshney [8] *et al.* in a comparison study of polidocanol with curettage, high-speed burr, and bone graft reported that polidocanol had a healing rate of 93.3% compared with 84.8% for curettage, with polidocanol providing faster pain relief & better functional outcomes. In our study we found 94.4% cure rate with polidocanol with a mean of 3.2 injections per patient. Our results were comparable with other studies in literature [2, 8].

## Conclusion

We found polidocanol as a safe and inexpensive alternative to other modalities of treatment and should always be first line of treatment for the management of the Aneurysmal bone cyst.

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