

Aneurysmal Bone Cyst Management by Sclerosing Agent in a 28-Year-Old Male

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Abstract

Background: Numerous treatment modalities are currently employed for managing aneurysmal bone cysts (ABCs). Minimally invasive therapies are commonly preferred due to the decreased chances of complications. Sclerotherapy is one among them, which is equally effective compared to the other therapies.

The present case report shows the use and effectiveness of percutaneous sclerotherapy using polidocanol in the management of an ABC in a young adult.

Keywords: *Aneurysmal bone cyst; Polidocanol; Sclerotherapy*

1. Introduction

An aneurysmal bone cyst (ABC) is a tumor-like lesion of the bone, which is benign expansile lytic lesion. The histologic structure shows blood-filled spaces separated by septae encompassing osteoid tissue along with giant osteoclast cells [1]. Conventional radiographs show well-defined osteolytic lesion, with fluid-like radio-opacity and soap-bubble appearance [2]. There are different treatment modalities that can be used for the management of ABC. These range from non-surgical procedures like sclerotherapy, systemic therapy with doxycycline, and denosumab to surgical procedures like intralesional curettage with osteosynthesis by different agents [2].

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Sclerotherapy is an alternative to surgical intervention ABCs. Polidocanol, Ethibloc, Doxycycline, calcitonin, steroid, or calcium sulfate are some of the sclerosing agents employed [2]. Polidocanol, is an endovenous sclerosing agent commonly used to treat varicose veins since the 1960s. Jain et al., in 2002 has shown effectiveness of the same in treating ABCs [3]. The primary objective of this study was to evaluate the radiological efficacy of sclerotherapy using polidocanol in healing the cyst cavity, confirmed by biopsy, using X-rays. The study aimed to assess the clinical efficacy of sclerotherapy in terms of pain relief, recurrence rates, and complications [4].

2. Case Report

A 28-year-old male presented with a two-week history of vague pain in his right shoulder. There was no history of trauma, and the pain had a spontaneous onset. On routine examination, tenderness was observed in the proximal humerus, with terminal restriction of movements. X-ray imaging revealed a lesion in the proximal humerus, characterized as an epiphyseometaphyseal eccentric lytic lesion of the right shoulder with cortical scalloping and well-defined borders (FIG. 1). The patient was skeletally mature.



FIG.1. Radiograph of proximal aspect of Right humerus.

Given the suspicious lytic lesion in the proximal humerus, an MRI was performed, which suggested the presence of an Aneurysmal Bone Cyst (ABC) (FIG. 2).



FIG. 2. MRI of proximal aspect of Right humerus.

Sclerotherapy The patient was then referred to a higher oncology center, where a biopsy confirmed the diagnosis of an Aneurysmal Bone Cyst.

Percutaneous sclerotherapy was performed using Polidocanol at the oncology center. Treatment was undertaken using 2% xylocaine local anesthetic with sedation. Polidocanol was injected under fluoroscopic guidance using a bone-marrow aspiration needle. Around 1 ml of 3% polidocanol was injected per 1 cm³ volume of the bony cavity.

Post-Polidocanol Injection: Following the procedure, the patient was examined after 3 months. The 3-month imaging showed signs of healing in the lesion. (FIG. 3).



FIG. 3. Comparison of pre-operative and post-operative radiographic appearances of the lesion. a. pre-operative, b. post-operative.

3. Discussion

Sclerotherapy is a minimally invasive treatment option for Aneurysmal Bone Cysts, especially when dealing with deep lesions which are difficult to access and may potentially endanger vital structures when operated surgically. The use of percutaneous polidocanol 3% injection can be a better choice in dealing with such lesions [5].

The present case report shows an ABC case, where percutaneous polidocanol 3% injection has given promising results after a short period of 3 months. The clinical and radiological efficacy demonstrated that sclerotherapy can be considered as an alternative treatment for ABCs. This is supported by many previous studies.

A prospective study on 28 patients with ABC treated with intralesional injection of polidocanol 3%, and found complete ossification in 92.3% of patients, showing the effectiveness of this sclerosing agent [4].

Another study compared the traditional treatment of curettage and grafting with percutaneous sclerotherapy using polidocanol and found that 100% of the sclerotherapy patients got complete ossification compared to 82% of the others. This was in concordance with the observation of the present study report [1].

A case series presented by Batisse et al. also demonstrated the effectiveness of percutaneous sclerotherapy with polidocanol in 19 cases and found 84.6% of cases with complete ossification and healing of the bony lesion within 3 months as observed in the current case. The cases were followed up for 2 years without any recurrences [6].

These studies along with the present case study strengthen the use of polidocanol as a definite advancement over previous sclerotherapy treatments. The need for multiple injections and prolonged treatment time are the major disadvantages reported [5,7].

4. Summary

The above case report depicts the effective management of an ABC case using percutaneous sclerotherapy using polidocanol. Although there are numerous reports on its efficacy, there are still voids to be filled regarding its dosage, number of injections, and treatment time. Further randomized studies are needed to validate the clinical and radiological efficacy of sclerotherapy and establish it as a viable and accepted alternative to conventional surgical techniques in managing Aneurysmal Bone Cysts.

5. Abbreviations

ABC: Aneurysmal Bone Cyst; MRI: Magnetic Resonance Imaging

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