

## What is the best treatment of aneurysmatic bone cysts? Study comparing curettage, Ethibloc and Aethoxysclerol

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### Introduction:

Aneurysmatic bone cysts are benign, but often rapidly expanding osteolytic multicystic lesions. Treatment options are surgical with a curettage combined with cancellous bone grafting or percutaneous: aspiration and injection with a sclerosing agent. Often these cysts need multiple percutaneous treatments. It is still unclear what the optimal treatment strategy for these bone cysts is.

### Material and methods:

We conducted a comparative retrospective study between 1985 and 2014 of 169 consecutive treatments in 92 patients with primary aneurysmatic bone cysts at skeletal sites, comparing the treatment of curettage, Ethibloc and Aethoxysclerol

The first group (CUR) of 31 patients was treated with curettage and cancellous bone grafting. The second group of 37 patients (ETH) was treated with percutaneous injection of Ethibloc® (Ethicon-Johnson - Johnson). The third group of 25 patients was treated with percutaneous aspiration and injection with Aethoxysclerol (AET) (auromacrogol 400 (polidocanol) chemische Fabrik Kreussler unc Co GmbH).

Treatment for each group was time dependant. Patient treated before 2004 were initially treated surgically, patients treated between 2004 and 2008 initially Ethibloc and after 2008 Aethoxysclerol was used. Ethibloc and Aethoxysclerol were percutaneously performed under general anaesthesia and with CT guidance. In case of a partial response after percutaneous treatment, a second procedure was performed until symptoms resolved. In case of growth of the cyst, a curettage was performed

Outcome measures were recurrence of the cyst, number of treatments needed, clinical results, and radiological results (0-25% decrease, 25-50% decrease, 50-75% decrease, 75-100% decrease).

Clinical success in all three groups was defined if all of the following criteria were met: decrease of the size of the cyst, absence of clinical symptoms, and lack of recurrence of growth.

Statistical analysis was done by comparing success rates with a chi square analysis. Furthermore a Kaplan-Meier analysis was done with success as outcome.

### Results:

Clinical success rate of group CUR, AET and ETH, was 67%, 80% and 83%, respectively. Treatment with either Ethibloc or Aethoxysclerol had a significant higher success rate compared to curettage and cancellous bone grafting (p value 0,034). There was no significant difference between Ethibloc and Aethoxysclerol. Patients with an unsuccessful surgical treatment (12 patients) were successfully treated with second surgical procedure in 58% and in 42% of those cases success was achieved with Aethoxysclerol. The mean number of percutaneous treatments needed was 2,8 (range 1-7 treatments) without significant differences between group ETH and AET. In patients treated with either ETH or AET, success was achieved after a single treatment in 24% of the cases.

Complications were noted: one pulmonary embolism in the ETH group, 1 fracture in group AET (humerus), 3 infections and 1 nerve (superficial peroneal nerve) injury in the CUR group.

### Conclusion:

Percutaneous treatment with a sclerosing agent, like Ethibloc and Polidocanol, is a safe and successful in aneurysmatic bone cysts. Although multiple percutaneous treatments are sometimes needed, curettage can be avoided in 80% of the cases.

Survival Functions

