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BONE CYST- CONSIDERATION OVER ONE CASE AND LITERATURE REVIEW

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Abstract: *Bone cysts are a rare pathology at children. When these are encountered diagnostic and treatment option come into discussion. We present a case report of an adolescent boy that had undergone surgery for a cyst lesion. We shall discuss the surgical treatment options and procedure and we shall review the literature.*

Key words: *cyst lesion, surgery, adolescent.*

1. Introduction

Bone cysts are different analysed by some authors as a dystrophy while others look at it as being a benign, lytic tumor. They have a liquid content, localised usually at the proximal metaphysis, specially at the humerus and femur bones [2].

The treatment of bone cysts varies among medical institutions and physicians [12].

2. Case report

We present a case report of a 16 year old adolescent that presented at the Emergency department of The Clinical Childrens Hospital Brasov for difficult walking associated to pain.

Clinical exam was completly normal with the exeception of slight walking difficulties. The hip Xray revealed a gigantic cyst localised in close proximity of the right femur. The cyst had an index of 5. This value had a high risk for fracture even at a small trauma.

Fig. 1. *Initial X ray*

The patient refused CT scan becouse of radiation and he also refused the MRI due to the fact that he was clasutrofobic.

First choice treatment was the classic surgical intervention with elastic osteosynthesis and own bone graft. The patient refused the procedure due to the multiple sites for grafts. He also refused osteosynthesis because there were two

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needed procedures, the second one for the material ablation.

The only agreed procedure was the artificial graft but to the patient there were given complete explanations regarding all the surgical and recovery implications of this special procedure. Informent consent was taken from the patient and also from his parents. All performed lab exams, were in normal range.

Surgery was performed under orotraheal intubation and general anestesya. The cyst was discovered and a portion of 6-8 cm^2 was taken off then we intervene in the interior of the cyst.

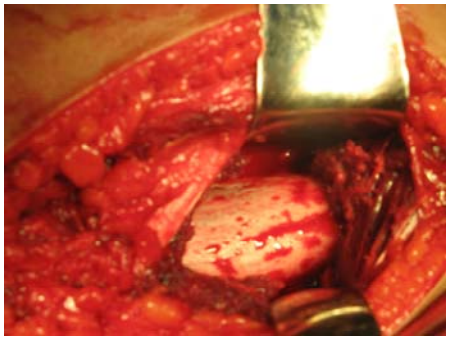

Fig.2. *Cyst exposure*

Fig.3. *Opening the cyst*

All liquid content was evacuated and the whole cyst was completly and carefully curretaged. A number of 5 bone graft recipients "Osteoset" along with a mixture of blood and homogenous solution were then introduced into the former cavity of the cyst.

Finally Kriptonite was applied in order to close the operation.

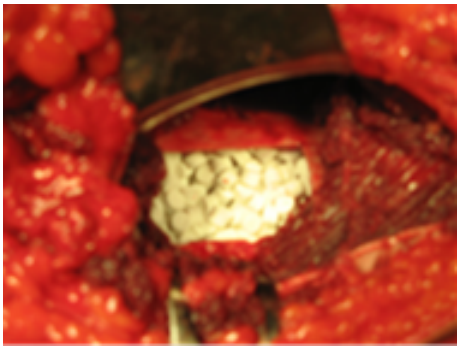

Fig. 4. *Osteoset introduction*

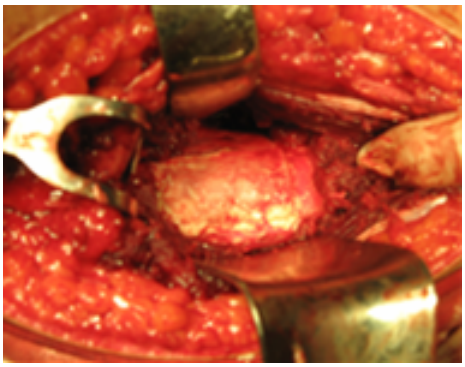

Fig.5. *Kriptonite applied*

After the surgical procedure for 60 days the bone was immobilised.

Fig. 6. *Immediate postop aspect*

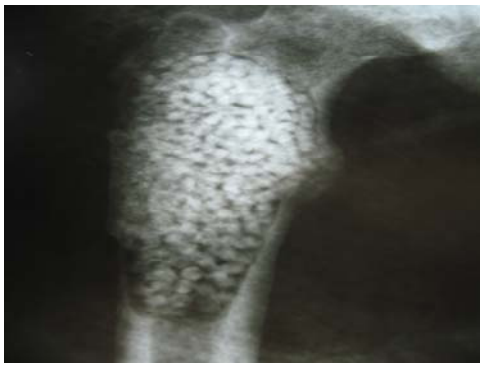

Fig. 7. *2 month postop aspect*

The evolution was favorable and after this period imobilisation was taken off and phisiotherapy along with different types of movements and mobilisation were performed in order to fully recover the leg.

After another 28 days he remained with a slight disconfort and pain at walking.

After 6 month he was completly recovered with a full range of motion.

Fig. 8. *6 month postop aspect*

Fig. 9. *1 year postop aspect*

3. Discussion

There are several reports regarding the incidence of cysts in literature and among different children populations [3]. Etiopathogeny is not well known some authors consider it a developmental problem, other local inflammation, or tumoral tissue [8].

The periostum is normal while the the cortical area of the bone is fragile, usually fractured when arriving at the doctor.

The most important and frequently encountered cysts at children are the juvenile ones along with the aneurysmal cysts [9].

Clinically it is asymptomatic, discovered accidentally due to minor trauma in most of the cases (97%). The clinically silent ones need only surveillance while those becoming symptomatic need surgical treatment [11].

Radiologically we see a cystic, unicameral lesion, well delineated, characterized by Beck triad: clarity and transparecncy, a fragile cortical area, the growth cartilage is in a good state.

From all modern radiological exams, the computer tomography may bring data due to its capabilty in measuring the cystic wall, the extension of the cyst [10].

Differential diagnoses has to be done with all the other osteolytic lesions, the dysplasic and the tumoral ones [4].

Also we had to differentiate with all the other causes our case.

In regard to their evolution the small cysts tend to heal spontaneously until the adult age due to the filling of the bone cavity with bone tissue. Healing occurs spontaneously or due to a fracture that heals.

Larger cysts that have a cystic index above 4 (the raport between the cysts surface and the double of the bone diameter) does not heal spontaneously and fracture often, specially when they are localised at the lower limb.

Our case had an index of 5 and had high risk of fracture even at a small trauma. Treatment consisted for several years in surgical treatment along with osseous graft from the patients bone ribs or peroneus. The method had its limitation with a lot of failures that are due to grphons resorbtion. Corticosteroids injection or bone marrow injection lead to recovery at these group of children specially when the diagnose was done under the age of 10 years [6].

Surgical treatment based on elastic osteosynthesis with a artificial bone graft gained lately more attention and became a treatment method. However the study of Canavese et al showed that percuttaneous curretage compared to steroid and autologous bone marrow injection had the highest recovery rate [1].

In a study of Hunt et al radiographic findings have shown that more than 75% in patients using percutaneous curretage and bone grafting while more than 95% cured completly after the second procedure [5].

Although there are reports that state that after graft intervention pain maybe the major complain we did not have this issue at our patient [7].

4. Conclusion

We present a case report of a adolesecent boy at whom a bone cyst was accidently discovered and artificial graft was performed. The adolescents evolution was with complet recovery.

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