Haemophilic Arthropathy: Diagnosis and Treatment of Subchondral Knee Cyst

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INTRODUCTION

The presence of subchondral bone cysts is one of the radiological markers of advanced haemophilic arthropathy. These cysts cause severe pain as well as restricted range of movement, loss of bone stock and deterioration of the quality of life. We evaluated the results of the surgical treatment of a subchondral knee cyst after three months.

The procedure consisted of **aspirating the contents of the cyst**, **rinsing the cavity** and **packing with impacted morselized bone graft**.

The 54-years-old patient had **severe haemophilia A** and history of recurrent bleeding, mainly in the knee. A minimally displaced joint fracture was detected by M.R.I.
The patient also had pronounced genu varum. We decided not to correct this deformity because of inadequate bone stock resulting from the size of the cyst.

The indication for surgical treatment was based of the size of the **cyst**, which was **larger than 50% of the size of the tibial plateau**.

DIAGNOSIS

> RADIOLOGIC EVALUATION

THE ARNOLD HILGARTNER X-RAY SCALE WAS USED.

0. Normal joint.
I. No skeletal abnormalities. Soft-tissue swelling is present.
II. Osteoporosis and overgrowth of the epiphysis. No cysts, no narrowing of the cartilage space.
III. Early subchondral bone cysts, squaring of the patella, widened notch of the distal femur or humerus, preservation of the cartilage space.
IV. Findings of stage III, but more advanced; narrowed cartilage space.
V. Fibrous joint contracture, loss of the joint cartilage space,

> RADIOLOGIC EVALUATION

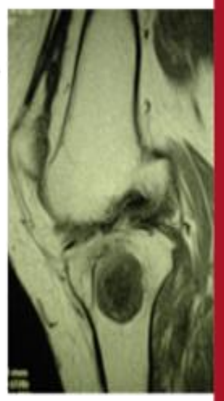
extensive enlargement of the epiphysis, substantial disorganization of the joint.

The patient was classified at stage IV

> MAGNETIC RESONANCE IMAGING

SOLER ET AL CLASSIFIED THE HAEMOPHILIC ARTHROPATHY IN FOUR TYPES BASED ON M.R.I.

I. Minimun accumulation of hemosiderin.
II. Great accumulation of hemosiderin and isolated chondral erosions.
III. Chondral destruction, bony erosions, subchondral cysts.
IV. Severe joint damage, osteoarthritis secundary, ankylosis.



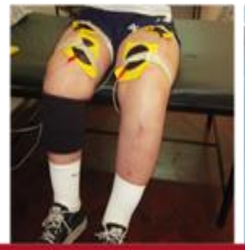
The patient was classified type III

MATERIALS AND METHODS

The patient underwent **two different stages of physical therapy**:

>The **pre-operative** stage:
- Strengthening the upper and lower limbs
- Instruction in the use of crutches

>The **post-operative** stage:
- Isometric exercises
- Assisted active mobilization
- Elongation of hamstring muscles
- Electrostimulation
- Open and closed chain in exercises
- Gait rehabilitation
- Resistance exercises



WE APPROACHED THE CYST DISTALLY, MAKING AN INCISION IN THE ANTERO INTERNAL SIDE OF THE TIBIA.

THE CONTENTS OF THE CYST WERE ASPIRATED AND THE CAVITY WAS RINSED WITH SALINE SOLUTION.

THE CYST WAS PACKED WITH IMPACTED MORSELIZED BONE GRAFT.

THE PROCEDURE WAS DONE WITH AD HOC MATERIAL, UNDER FLUOROSCOPY.

RESULTS

>After three months, the patient had **no joint pain** and had **improved his activity level**.

>The range of **movement increased by 40º** (from 70º-110º).

>Signs of **allograft resorption** were **not detected**.

FINAL RADIOGRAPHIC CONTROL NOTES THE PERSISTANCE OF A SMALL CYSTIC IMAGE.

EVALUATED BY CAT A SMALL MARGINAL CYST, WITHOUT COMMUNICATION WITH THE CYST TREATED, WAS DISCOVERED.

IT CONCLUDES THAT ANOTHER APPROACH WOULD HAVE BEEN REQUIRED TO FILL IT.

CONCLUSION

The treatment of subchondral bone cyst by applying morselized bone graft

>**alleviates pain**,

>**enlarges the range of movement** and

>**increases bone stock**,

there by **improving the patients quality of life**.

Bibliography: • **Arnold WD**, Hilgarther MW Hemophilic Arthropathy J Bone Joint Surg (Am) 1977; 59: 287-305. | • **The official journal of the World Federation of Haemophilia**. Vol 16. Sup 5. July 2010.