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THE IMPORTANCE OF POSTOPERATIVE CARE IN CONGENITAL HIP DISLOCATION

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ABSTRACT. Congenital hip dislocation is a part of the disorders of the hip's development, with acetabulum development dysplasia and hip's subluxation (it remains some contact between articular surfaces). Undiagnosed in time, congenital hip dislocation can have a serious impact on psychic development and on social life, on patient's family because of the sequels (members' inequality, femoral head's necrosis, hips' osteoarthritis, lump walk), that are harder to threat. That is why it is important that the family members, the family's doctor, the orthopedic doctor and the physical therapist to colaborate for the physically, mentally and intellectual development of the patient.

Keywords: congenital hip dislocation; surgical intervention; gypsum immobilization; physical therapy

INTRODUCTION

The paper analyzes a group of 142 patient aged 0-3 years with a boy/girl report of 12/1, congenital hip dislocation on the right side (50%), 30% left and 20% bilateral. In the study were included patients with congenital hip dislocation "de novo" and were excluded congenital hip dislocation from neurological affections (IMO, Arthrogryposis, myelomeningocele) and teratological dislocations (dislocated hip before birth, with limited movements and irreducible at birth).

The patients are coming from urban and rural environment: 60% urban environment and 40% rural environment, and in what concerns the patient's life conditions, 65% of the patients come from less favored families. From the family's history, surprising, we can observe that 2 patients, sisters, aged 2.6 and 1.6 years have bilateral congenital hip dislocation – both of them came at the orthopedic doctor at the same time. The mother also had bilateral congenital hip dislocation.

CLINICAL EXAM

Most of the patients came to the orthopeedic doctor after the age of walking (1 year), except 2 of them who had 7 and 9 months, when the parents observed the lumped walk and at the clinical exam we discovered the members' inequality (< = 2 years), positive Valcozzi sign, short thigh, limited abduction, asymmetric thigh and nappy folds, vulvar slit's deviation towards the affected part, the line that connects the umbilicus, the iliac centrosuperior spleen and the big trochanter interrupts, because the big trochanter is ascending (there is the risk that not treating the congenital hip dislocation to lead to deviations of spinal column), and by walking we can observe the positive Trendelenburg sign (on the affected part – in unilateral dislocation), inefficiency of the gluteal middle muscle - the first one to contract in congenital hip dislocation), respectively "duck walk" in general bilateral dislocations.

In a detailed clinical exam on the patients we can observe in 50%-55% of the cases the association with tal valgus leg, metatarsus adductus and, rarely, torticolys.

THE IMAGING INVESTIGATIONS

The pelvis X-ray films show:

- Small cotiloid, undeveloped, flattened;
- Cervical obturator arch interrupting;
- The inclination angle of the acetabulum, which normally is 20 degrees, crosses 30 degrees in all the investigated cases;
- Small femoral head, flattened, placed in the external superior quadrant (Ombreddanes quadrangles), with neocotiloid presence;
- Retroversion of femoral cervix;

The hip ultrasound shows:

- The delay of the femoral head's nucleus calcification, that is dislocated;
- The interposition of the head and acetabulum with the labrum and the capsule;
- Deficient acetabulum;
- The second angle smaller than 45 degrees;
- The third angle bigger than 77 degrees.

THE SURGICAL THREATMENT

In all the studied cases it was absolutely necessary the surgical hreatment, orthopedical reduction not being indicated because of the interposed anatomical elements between the head and the cotiloid (capsule, circular tendon, pulvinar fat tissue).

The patients aged less than one year and six months, maximum two years (for those with overweight figure, cellular subcutaneous tissue wick represented) and those who had a femoral head not placed in a very high position we appealed at the reduction on the inguinal way, using perpendicular incision on the adductor muscle, respectively the anatomy of these muscles to see the capsule.

The other patients suffered the Smith Peterson reduction (anteromedial), immobilizing the space

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between the tailor muscle and the fascia's tendon, with the identification and the sectioning of the directly tendon and rejected the femoral right muscle.

In the medial reduction, but also in the anteromedial one, the patients with pelvic X-rays that had shown a bending angle of the acetabulum over 35 degrees have benefitted of pelvic osteotomy Butee and Pemberton (Smith Peterson way), harvesting graft from the right iliac crest. There where cases where, although the bending angle of the acetabulum was very big, it was necessary to give up on the pelvic osteotomy, the further radiological evolution proving it's necessity (limited potential of development of the acetabulum, although the head was reposed in the cotiloid).

Fig 1. Initial pelvis X-ray

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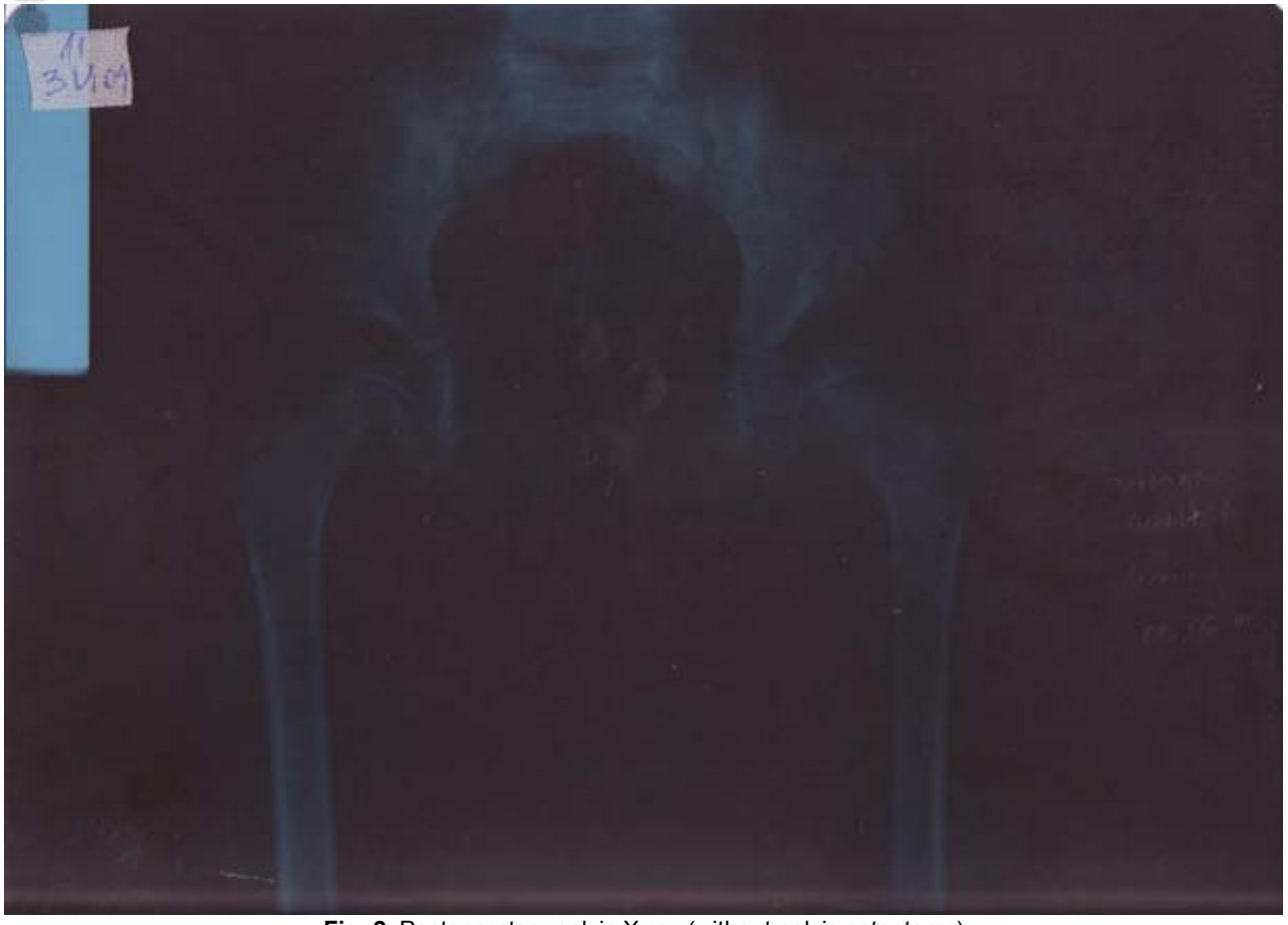


Fig. 2. Postoperatory pelvis X-ray (without pelvis osteotomy)

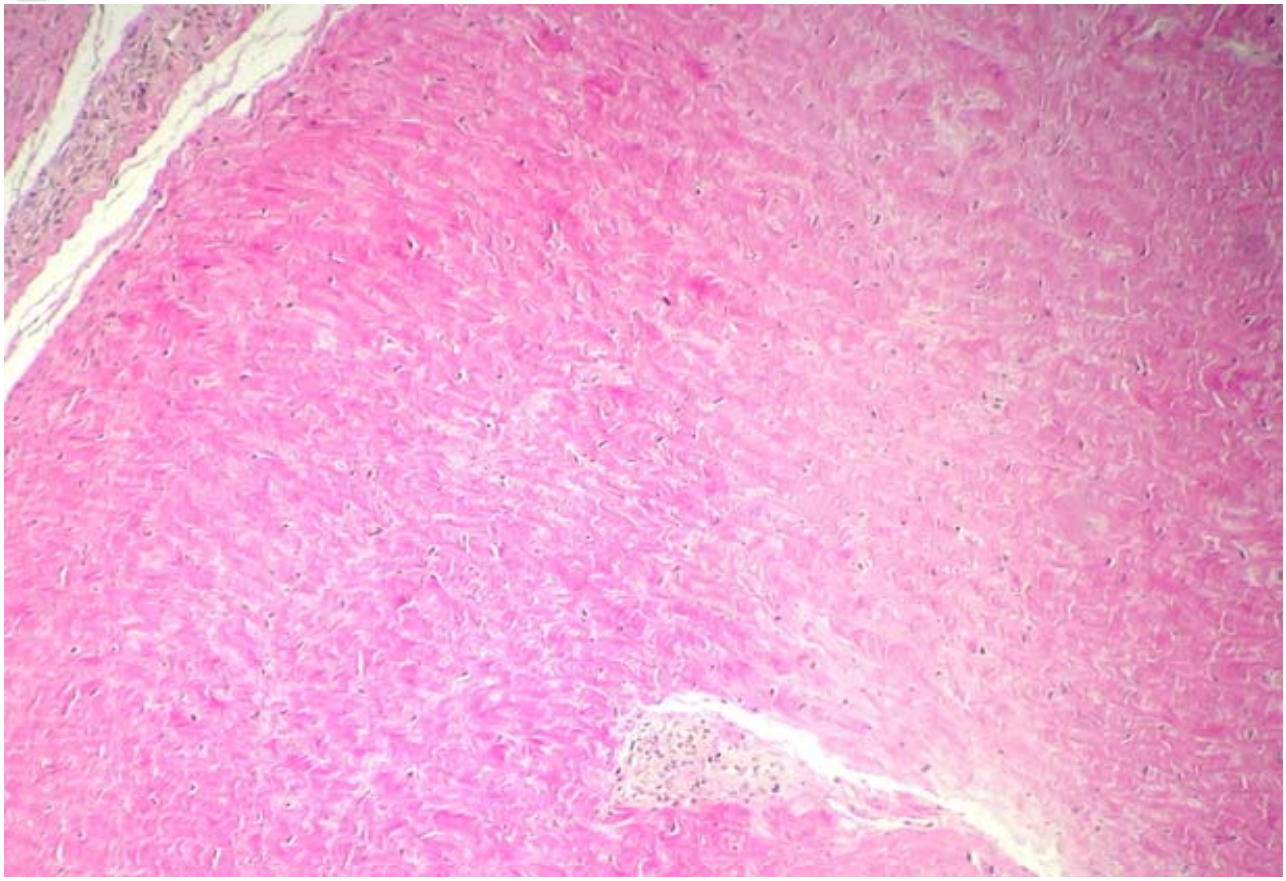
Fig. 3. Initial pelvis X-ray

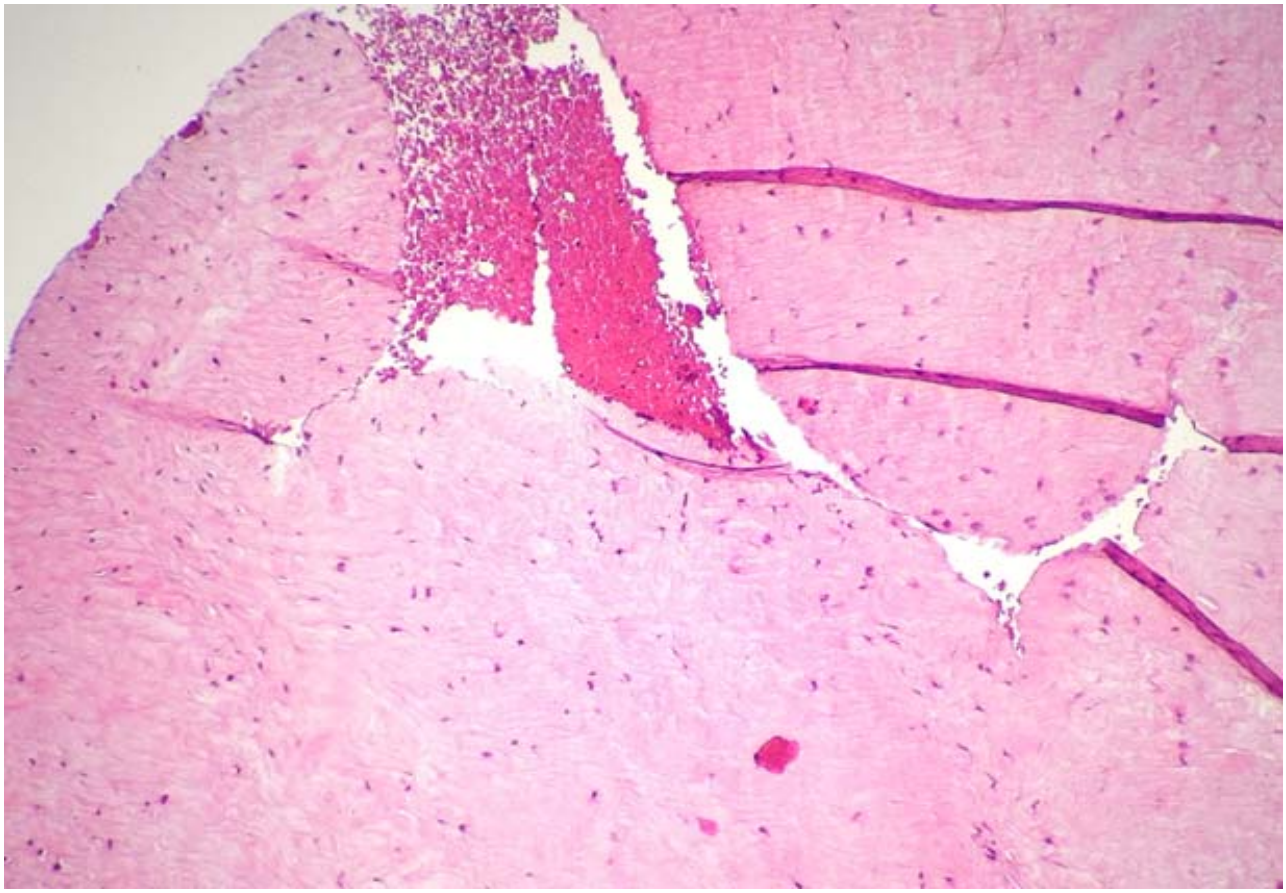
Fig. 4. Postoperatory pelvis X-ray (with pelvis X-ray)

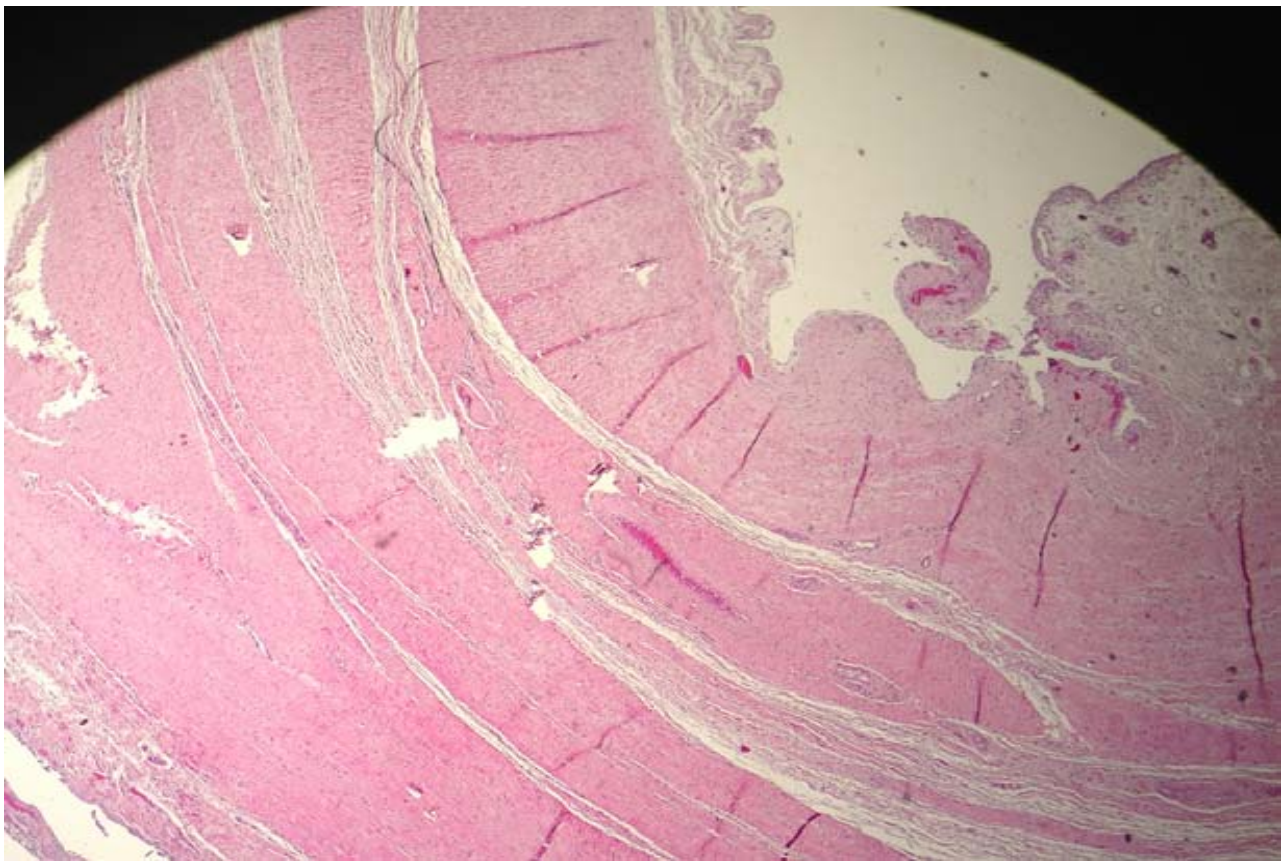
In the operation it was determined the presence of a thick fibrous excessively capsule, with an isthmus between the head and the cotiloid, a round long tendon, connecting the head and the cotiloid, thick well vascularized (it bleeds when it is sectioned), in some cases was determined the absence of the round tendon, cotiloid occupied by fat tissue, excessively, eversed labrum occupying the cotiloid, crossed hypertrophic tendon and pressured. The periarticular muscles also, (especially the pelvic muscles, retracted and iliac) – all these anatomical elements are interposing on the orthopedically reduction of the femoral head in the cotiloid, and so they have to be removed.

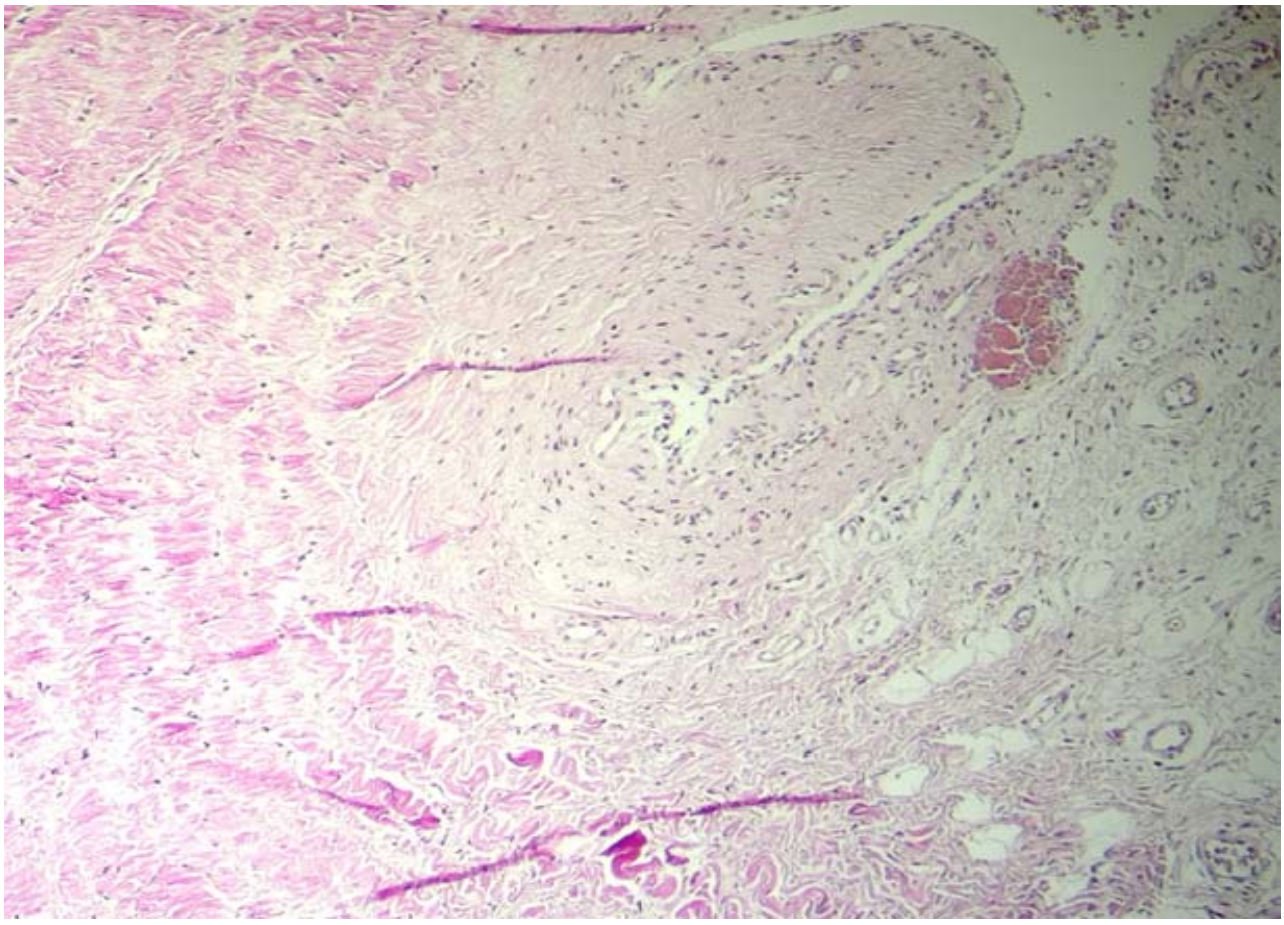
We aldo discovered a small deficient cotiloid, bog head comparatively with the bumped cotiloid (head cotiloid congruency), in some areas there was missing the articular cartilage.

All the anatomical elements that were opposing reduction were removed and sent to the anatomic pathological exam where there was discovered the replacing of the normal tissues with fibro fat tissue, connective vessels, haemorrhage areas and dystrophic injuries on the muscular fibers.









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POSTOPERATIVE CARES

Postoperative, all patients were immobilized in gypsum pelvipedios apparatus for a period of 30-45 days regarding the next factors discovered postoperative and intraoperative, clinical and radiological: the patient's age, dislocated femoral head's position (low, high), acetabulum's inclined angle (Whisberg's triangle) and respectively the femoral head's covering angle postoperative, the patient's overweight, small deficient cotiloid, big head – the cotiloid-head incongruity, performing the pelvic osteotomy harvesting graft from the iliac crest, the graft integration degree.

The immobilization position is 45° abduction, internal rotation 15°, flexion 15-20° (the position that maintains the head in the cotiloid, and as long as this position is maintained longer it raises the potential of the cotiloid's development.

Although it mustn't be exceeded the 30-45 days period of immobilization in pelvipedios gypsum apparatus because it appears muscular ligaments retractions, muscular hypertrophics that make difficult further recovery.

Then, the patients were immobilized in plaster knees with abduction wrist and internal rotation 1-2 months until 1 year postoperative (variations between 7 – 14 months according to the radiological evolution of the head – cotiloid binomial, in the abduction wrists and internal rotation. The last two types of plaster immobilization allow the mobilization of the hip's joints, and so prevent the stiffness and allow the hip's muscle massage.

After one year, the abduction's wrist and the internal rotation are applied only at night, the patient could walk.

Postoperative a major importance has the kinetotherapy, so the cooperation with a very good and experimented physiotherapist in the children's hip pathology, but also the cooperation with the family (many belongings are scared of these plaster immobilizations, especially of the pelvipedios apparatus that affects the patient's hygiene because it is hard to perform it in optimal conditions) that have to understand the importance of the plaster apparatus and also of physiotherapy (regular checks to the therapist surgery, the prolonged affection it is hard to endure by the entire family). In the case that the parents don't afford to go to the kinetotherapy/physiotherapy, they are encouraged to perform these exercises/technical massages at home, personally and it takes a long time dedicated to the patient.

So the family's cooperation is very important for a better clinical evolution of the patient's and for a mental and social favorable integration.

Only in two of the cases from the studied group it was discovered at the postoperative radiography done at 30-45 days after the surgical intervention the relaxing caused by the removal of the gypsum apparatus at home (the parents not undestranding it's importance). It was proceeded to the surgical reintervention, both patients benefited at the firs intervention of inguinal approach, and at the second one it was decided the Smith Patterson approach, involving Pemberton pelvic osteotomy harvesting graft from the iliac crest. On this time the parents understood the necessity of gypsum apparatus, that if it wouldn't have been removed at home, contrary the doctor's indications it would be avoided a physical, mental, surgical and aesthetic stress for the patient, but also for the surgical team.

CONCLUSIONS

In the studied group the patients came from unfavored environments, but also from better life conditions environments, having acces to periodical ultrasound investigations, but still the dislocation was visible after the walking age. So the hip ultrasound without a clinical proper exam can be wrong interpreted.

The surgical intervention represents half of the runway to cure congenital hip dislocation, avoiding sequels and mental and physical proper development of the patient and social integration. The other half of the runway is represented by postoperative cares: plaster immobilizations, physio-kinetotherapy, spa cures, periodical check ins and radiological controls. The family – orthopedic doctor – therapist is necessary and good for the patient.

The belongings/the family have to understand the necessity of gypsum immobilizations and to respect the doctors indications, even though the care of a immobilized patient is though and stressful mentally and physically for the patient, but also for the other family members. But is preferable to maintain the gypsum immobilization for 30-45 days and not to proceed to a new surgical intervention or the sequels of the untreated congenital hip dislocation or postoperative post cares.

The physiotherapist has an essential role, after the orthopedical surgeon, in the congenital hip dislocation treatment. The recovery of the joints' mobility and the muscle tonicity represents the next step in the dislocation's treatment, after the restoration of the head in the cotiloid.

The kinetotherapist has to be familiarized and experimented with this pathology of the children's hip because the sudden maneuvers could redislocate the femoral head.

The patients with limited possibilities can be periodical hospitalized for recovery in specialized services and the parents can be taught by the physiotherapist how to proceed with certain maneuvers/massages.

The congenital hip dislocation represents o development disorder of the hip very complex and for it's healing it is necessary a very well trained and united team with members like: family, neonatologist, sonographer, orthoped doctor, kinetotherapist.

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