

Hip surgery at DMO

The hip area is the biggest orthopedic problem in patients affected by DMO. If it is necessary to adjust other floors of the lower limbs, the DMO always proceeds from the center to the periphery, i.e. in the direction of the hips - knee - ankle.

Surgery is divided into surgery **on bones** and surgery **into soft tissues** – muscles, tendons, aponeuroses. When it is necessary to perform an operation on both, we always start with the muscles.

The most serious condition is **dislocation**, which can be **congenital** or **neurogenic - secondary**. The prevalence of subluxation and dislocation in patients with DMO is 2.6–28% depending on the type of DMO.

A child is not born with an adult's hip - for proper development, adequate physiological load with a correct and even pull of the surrounding muscles is important. Physiological development is lacking in DMO, which is why there are so many hip joint disorders. Hip joint geometry disorder is caused by an uneven pull between adductors and abductors. The ischiocrural muscles have an even greater influence on subluxation than the adductors. M. rectus femoris tilts the pelvis into anteversion and affects the position of the patella, insufficiency of the abductors is manifested in the Trendelenburg test. M. iliopsoas pulls the joint laterally and in subluxation can even have luxation consequences.

The most common forms of DMO are operated on, where the **"scissors gait"**, occurs due to the excessive pull of the adductors when the lower limbs cross over each other when walking. Due to the adductors and medial ischiocrural flexors, during growth in spastic patients, **there is no reduction in the angle of anteversion and valgus of the upper end of the femur**. The acetabulum becomes vertical. The Wiberg angle is negative. We call it ***coxa valga antetorta neurogenes***, to which subluxation to dislocation may be added. A neurogenic defect is considered to be the only case where the findings on the hip joints were normal within 6 months and signs of lateral migration of the hip, changes to the roof of the head and angular deviations of the proximal end of the femur were caused by a pathological pull of the adductors or weakness of the hip muscles. In a primary dislocation, the geometry of the joint is congenitally changed, in neurogenic dislocations it is the result of uneven muscle tension.

In addition to subluxation or dislocation, DMO also has typical adduction contracture, semiflexion contracture of the hips, semiflexion of the knees and internal rotation in the hip joint. Of course, the pelvic segment affects the adjustment of all segments below it, and without proper adjustment in the hips, we will never achieve an ideal physiological gait

Muscle surgery

Muscle surgery is performed on the adductor longus, brevis, some fibers of the adductor magnus, gracilis, semimembranosus, semitendinosus muscles, and the pectineus muscle is never operated on. Prolongation, tenotomy or transposition, or distalization of the beginning of the muscles, is most often performed. It is operated on from 3.5 years of age at the earliest, until then targeted application of botulinum toxin to specific muscles is carried out. Contraindications to surgery are dyskinesia. The dyskinetic form must never prevail over the spastic form. Adduction contracture is alleviated by closed or open adductor tenotomy. The goals according to Thom are the following: elimination of hip contractures, improvement of "scissor-like" gait, reduction of the development of coxa valga antetorta, reduction of spasticity, prophylaxis of spastic hip dislocation. Exercises on the muscles are basic or preparatory exercises for hip joint replacement.

Bone surgery

Neurogenic dislocation does not occur overnight. First, a decentred position arises, which is assessed according to the **Wiberg angle (CE - center edge)**, which indicates the degree of coverage of the femoral head by the acetabular socket. It is given by a vertical line passing through the center of the femoral head and a line that intersects the center of the femoral head and the upper edge of the acetabulum. Decentration is followed by subluxation and dislocation. The pit physiologically covers the entire head. If not, **the socket typically becomes vertical** and the **acetabulum recedes** due to pressure and traction on the growth cleft.

Interventions

- **Blood reduction** of the hip joint, simultaneously with femoral osteotomy or acetabuloplasty;
- **varis osteotomy** – rarely used, a wedge is cut above the trochanter in the neck, the femur goes into adduction and will increase adductor dysfunction;
- **derotational subtrochanteric osteotomy** – the bone is cut above the trochanter and the femur is rotated, used to correct anteversion;
- **acetabuloplasty (Dega, Pemberton)** – in the case of instability of the position of the head with a tendency to lateral migration;
- **osteotomy of the pelvis (Salter, Steel, Chiari)** – in the case of instability of the position of the head with a tendency to lateral migration.

With an unfavorable prognosis and a severe condition of a patient with DMO, palliative operations are indicated, e.g. **osteotomy Schanz, Girdleston, Milch**. is most often used in **Schantz osteotomy** – the head of the femur is moved away from the iliac blade by performing an abduction osteotomy in the subtrochanteric region, sometimes the femur is shortened, and the trochanter becomes the new head. It is used for pain or contractures.

Endoprosthesis implantation is possible in adults, but all contractures in the hip joint area must always be released.

Links

Related Articles

- Children's Cerebral Palsy

Related Articles

- KRAUS, Josef. *Cerebral Palsy*. 1. edition. Grada, 2004. ISBN 80-247-1018-8.
- KOLÁŘ, Pavel. *Rehabilitation in clinical practice*. 1. edition. Galén, 2009. 713 pp. ISBN 978-80-7262-657-1.