



Morbus Perthes

(synonyms: Legg-Calvé-Perthes disease, idiopathic juvenile necrosis of the femoral head)

The term "Morbus Perthes" describes a disease of the child's hip joint.

It is a circulatory disorder of the femoral head, which leads to the local death of bone and cartilage tissue. It is followed by a deformation of hip joint, which is associated with an increased risk of early osteoarthritis of the hip joint.

What are the symptoms of this hip disease?

Typical symptoms are:

- Claudication
- Pain in the hip, thigh or knee
- Restriction of movement of the hip, especially for rotational and spreading movements

When does Perthes' disease occur more frequently?

In toddlerhood.

However, it is a rare cause of hip pain.

What may be reasons for Perthes' disease?

A clear cause is not known, but vascular malformations and clotting disorders, hormonal problems or an increase in pressure in the hip joint or bone are assumed to be factors. Genetic/family involvement is also possible (siblings at increased risk).

What changes can be expected in case of M. Perthes?

- Fluid accumulation in the joint gap
- Displacement/deformation of the femoral head
- Permanent restriction of movement
- Leg shortening, claudication
- Increased and premature wear of the joint (arthrosis of the hip joint)

Which diagnostic measurements are necessary?

This includes a follow-up survey, examination of the patient and execution of X-ray images of the affected hip joint. At early stage magnetic resonance imaging (MRI/MRI) may be useful to detect M.Perthes in the beginnings.

M. Perthes shows several steps. What are they?

The cause of the disease is not treatable.

There are different stages which are seen in X-rays and the whole process takes many months up to four years.



Radiographs are taken approximately every 3-6 months, until the reparation stage is reached. The timing cannot be influenced.

What are the therapy options for M. Perthes?

Primary therapeutic goals are to improve the hip in terms of mobility and to restore joint congruence to avoid deformity of the femoral head and later osteoarthritis. There are several options:

We recommend:

1. Non-surgical therapy:

Reduction of pain, use of crutches and to skip sports (even if painless!). Unencumbered sports such as swimming or gentle cycling and hiking are allowed.

Supportive physiotherapy to maintain/improve the mobility/spreadability of the leg as well as gait training and strengthening of the hip joint-circumferencing muscles.

2. Surgical therapy:

- In case of non-response of conservative therapy, the separation of the tendon of the spreading muscles (M. adductor longus) can be carried out to improve movement.

- To restore the congruency of the hip joint, bone conversion operations are available on the pelvis (acetabulum) and/or on the thigh bone (femur). The shape of femoral head aligns better with the acetabulum, when the femoral head is centred into the joint. Occasionally, the growth plate at the base of the spread muscles must also be closed early in order to improve the lever arm for the muscles and thus avoid a lagging gait pattern.

In case the femoral head is deformed after healing of M. Perthes, damage of the acetabulum and the joint lip, respectively, may occur.

In those situations, arthroscopic or open operations may be necessary in adolescence or young adulthood to improve the contour of the femoral head. In the case of an advanced damage to the hip joint with osteoarthritis, the implantation of a total hip prosthesis is necessary.

The methods of surgical therapy depend on patient age and the deformation of the hip joint.

What is the prognosis in case of M. Perthes?

This is mainly associated to the deformation of the femoral head, the congruency of the hip joint and the range of motion over time.

The most important factor is the patient's age when the first symptoms appear: the older the patients are when they are diagnosed, the more likely they are to expect poor progression/results. Bony changes at the edge of the deformed femoral head as well as a poor spreadability of the leg are poor prognostic factors

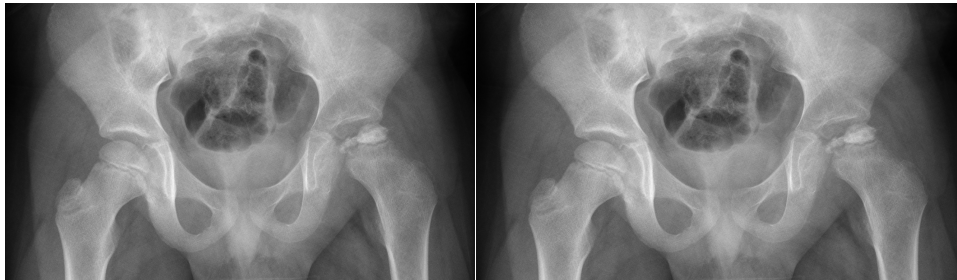


Fig. 1a, 1b: healthy hip joint on patient's right side in comparison to an affected hip joint on the left side with M. Perthes

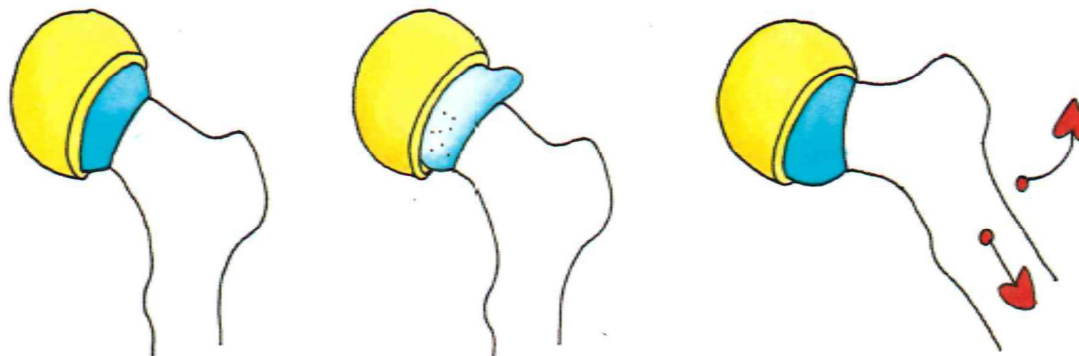


Fig. 2: schematic representation of an affected and already deformed hip head in the middle (2b) in its joint (yellow) as well as healthy hip joints in neutral position (2a) and spread position (2c) (from Ostéochondrite de la hanche von Rémi Kohler, Elisabeth Descubes)