



## პერტესის დაავადების მქონე 7 წლის პაციენტის კლინიკური შემთხვევის აღწერა

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### აბსტრაქტი

პერტესის დაავადება არის ბარძაყის ძვლის თავის სისხლის მიწოდების დროებით შეწყვეტა, რასაც მოჰყვება კოლაფსი და შემდგომი რემოდელირება. შემთხვევების უმრავლესობა გვხვდება 4-დან 10 წლამდე ასაკის ბავშვებში.

7 წლის ბავშვს დაეწყო მტკივნეული კოჭლობა მარცხენა ფეხში. კოჭლობა თავდაპირველად განიმარტებოდა, როგორც ბარძაყის გარდამავალი სინოვიტი. თუმცა, შემდგომმა გამოკვლევებმა აჩვენა, რომ მას ჰქონდა პერტესის დაავადება. ლეგ კალვე პერტესის დაავადება (LCPD) იგივე, იდიოპათიური ოსტეონეკროზი ან იდიოპათიური ავასკულარული ნეკროზი ბარძაყის ძვლის მეტაეპიფიზზე. მკურნალობის მეთოდები მიზნად ისახავს მოძრაობის დიაპაზონის აღდგენას და ბარძაყის თავის ადეკვატური დაფარვის შენარჩუნებას. საჭიროების შემთხვევაში, ოპერაცია კეთდება ბარძაყის თავის ან მენჯის გადაადგილებით, დაფარვის შესანარჩუნებლად. შესაბამისად, არსებობს არაქირურგიული და ქირურგიული მკურნალობის გზები, მათ შორის ბარძაყის მავარიზირებელი დეროტაციული ოსტეოტომია, ინომინირებული ოსტეოტომია, მენჯის ოსტეოტომია, სამმაგი ოსტეოტომია, ხიარის ოსტეოტომია და შელფ აცეტაბულოპლასტიკა(ტაბუხის ბუდის პლასტიკა).

დაავადება ყველაზე ხშირად გვხვდება ბიჭებში, ვიდრე გოგონებში თანაფარდობით 4:1-დან 5:1-მდე. 6 წლამდე ასაკის პაციენტებში დაავადების მართვა და მკურნალობა შედარებით მარტივია. რთულად მიმდინარეობს 8 წელს გადაცილებულ ბავშვებში. ხოლო 6-დან 8 წლამდე ასაკის დიაპაზონში კი პროგნოზი ვარიაბელურია. ამრიგად, ქირურგიული ჩარევის აუცილებლობა მოითხოვს ნიშნების მჭიდრო დაკვირვებას. მას შემდეგ რაც გამოიკვეთება ძირითადი ნიშნები, დინამიური ართროგრაფია საჭიროა მკურნალობის მიდგომის არჩევამდე.

საკვანძო სიტყვები: ლეგ-კალვ-პერტესის დაავადება; ოსტეონეკროზი; მავარიზირებელი დეროტაციული ოსტეოტომია.

## Clinical case report of a 7-year-old patient with Perthes disease

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### Abstract

Perthes disease represents a transient interruption of the blood supply to the femoral head followed by collapse and subsequent remodeling. The majority of cases present between the ages of 4 and 10 years.

A 7-year-old child started having painful limping in his left leg. The limp was initially interpreted as a transient synovitis of the hip. However, when the limp persisted, further investigations revealed that he had Perthes disease. Legg-Calve-Perthes disease (LCPD) is idiopathic osteonecrosis or idiopathic avascular necrosis of the capital femoral epiphysis of the femoral head. Treatment options aim to restore range of motion and maintain adequate coverage of the femoral head. When appropriate, surgery is used to reorient the femoral head or pelvis to maintain coverage. Up to now, different surgical and nonsurgical treatments, including femoral varus osteotomy, innominate osteotomy, pelvic osteotomies, triple osteotomy, Chiari osteotomy, and shelf acetabuloplasty, have been suggested for noncontainable LCPD hips.

Disease occurs most commonly in male patients, with a male to female ratio between 4:1 and 5:1. The disease has a poor prognosis in children over 8 years old, but this group of patients can also benefit from advanced surgical methods. In patients aged less than 6 years, the disease has a generally good prognosis, but in those aged between 6 and 8 years, its prognosis is variable. Thus, the need for surgical intervention requires close observation of signs. Once any head signs are observed, dynamic arthrography is beneficial before choosing the treatment approach.

**Keywords:** Legg-Calve-Perthes disease; Osteonecrosis; Varus derotation osteotomy.

### Case report:

The patient, who had been experiencing movement disorder (lameness) for two months, after X-ray and MRI, was diagnosed with Legg Calve Perthes disease. The patient is a 7-year-old boy. There was no history of trauma and nothing of note in his medical history. The severity of the patient's condition required surgery. So he was admitted to a health institution for surgery.



Fig. 1

Differential Diagnosis: Differential diagnoses that must be considered given the radiographic findings include:

- Infectious etiology including septic arthritis, osteomyelitis, pericapsular pyomyositis
- Transient synovitis
- Multiple epiphyseal dysplasia (MED)
- Spondyloepiphyseal dysplasia (SED)
- Sickle cell disease
- Gaucher disease
- Hypothyroidism
- Meyers dysplasia

Personal diseases: There is no specific disease.

Genetic diseases: No specific disease detected

Physical investigation: Moves to the left side while walking With lameness. Internal rotation and abduction of the left thigh is limited. During flexion, the thigh rotates externally.

Operative Treatment:

Femoral or Pelvic Osteotomy

- Indications: children older than 8 years
- Lateral pillar B and B/C have improved outcomes with surgery compared to A and C
- Studies suggest early surgery before femoral head deformity develops

Valgus or Shelf Osteotomies

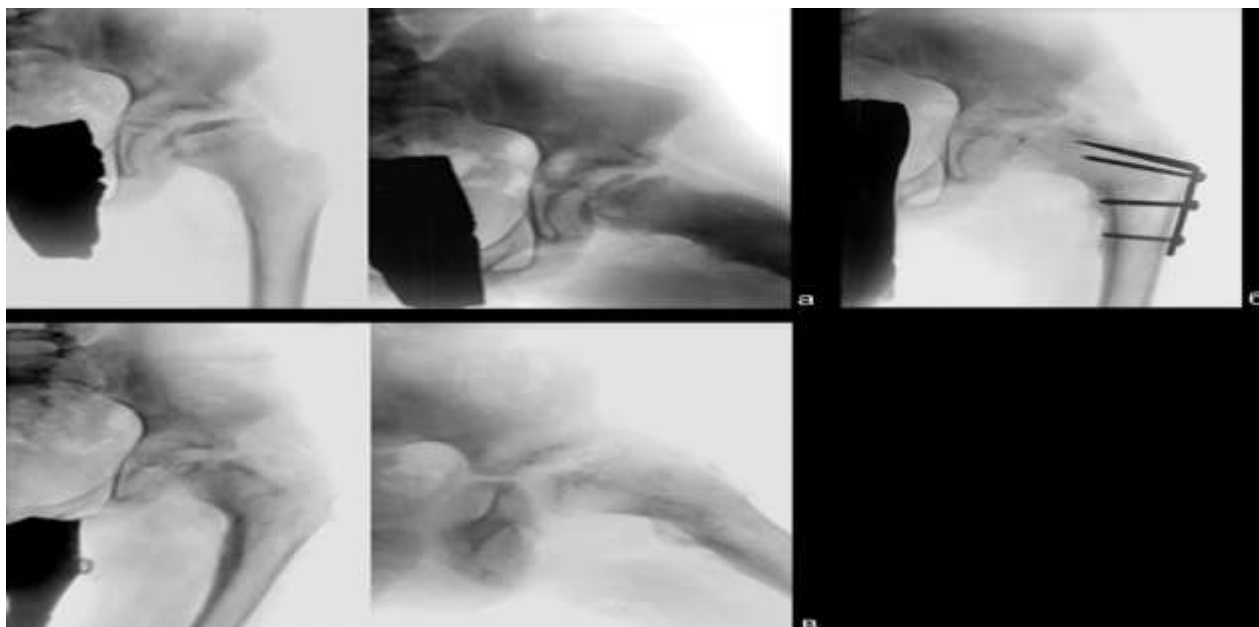
- Indications: children with hinge abduction
- Improves abductor mechanism

Hip Arthroscopy

• The emerging modality for treating mechanical symptoms and/or femoroacetabular impingement

Hip Arthrodiastasis

- Controversial option



**Fig. 2**

Operation:

Surgery Performed: Varus derotation osteotomy

After the necessary cleaning and covering procedures were performed in the supine position under general anesthetics, the left hip was examined under scopy control. It was determined that the abduction movement was open, and the femur pressure ratio was good in abduction and internal rotation. The left hip was entered through a 12cm lateral longitudinal forehead incision and the femur was accessed by passing the wrinkles.

osteotomy was performed from the subtrochanteric region to provide 20 degrees of varus and interior rotation, and osteosynthesis was provided with 1 harris muller plate house screws.. the wound was washed, a drain was installed, the floors were closed, the dressing was done, a short leg cast was written in order to prevent rotation. the patient was awakened.

Post operation:

18.02.2023: 1 day general condition and vital signs are stable. follow-up and treatment continues.

19.02.2023: 2 days klink stable. no additional complaints. pain control is being done. medical treatment has been organised

20.02.2023: 3rd day, the patient's general condition good. his vitals were healthy, he had no symptoms, a discharge plan and prescription were written, and the patient was discharged.

Treatment: Prescription edited

Outcome and follow-up: The child has been asymptomatic but has had a persistent limp for over a year. This has been reported by his parents and observed in clinic. He has never described pain. He is currently reviewed in clinic every 6 months. He has plain film and frog-lateral radiographs of the pelvis performed at every clinic attendance.

Discussion: In a child presenting with a limp, many different causes must be considered. The priority must be to diagnose or exclude those conditions that require urgent or emergency treatment. Trauma (including non-accidental injury) and infection must be considered. If blood tests and radiographs are normal, then most causes of limping that require emergency treatment may be excluded. If the limp resolves within a few days then a presumptive diagnosis of transient synovitis is

reasonable. We also take into account the age of the patient, because surgery usually recommends children over 8 years old. However, the severity of the patient's condition required surgery.

The prognosis of Perthes disease is considerably better in children who acquire the condition at a younger age. From the few reports available a good outcome can be predicted without surgical intervention.

Take home message: Femoral pain in children is often ignored or expected to go away over time.

However, as we saw in this case, even though two months had passed, the child was treated with surgery due to his serious condition. Movement disorders and femoral pain in children need to be taken more seriously. When treating, the doctor should pay attention to the patient's age. Typically over 8 years old, sometimes over 6 years old, can also benefit from advanced surgical methods.

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