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## TREATMENT AND REHABILITATION OF A CASE WITH HIP ARTHROPLASTY ON THE BACKGROUND OF BILATERAL NEONATAL OSTEOMYELITIS (RIGHT HIP REPLACED)

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### Abstract

The aim of this article is to present the surgical treatment and rehabilitation progress of a young male patient who had suffered from bilateral neonatal osteomyelitis of the hip joints, with more severe damage on the right side. At the age of 26, the patient underwent total right hip arthroplasty, accompanied by a 3 cm femoral osteotomy and a 6 cm femoral lengthening procedure to address limb length discrepancy. Complications included sciatic nerve injury resulting in drop foot and knee joint stiffness, which persisted even after 9 months, with extension still limited to minus 15 degrees. This report documents the medical management, detailed physiotherapy plan, and progressive outcomes over a 9-month period.

**Keywords:** *Hip arthroplasty, neonatal osteomyelitis, drop foot, post-operative rehabilitation, sciatic nerve injury.*

### Introduction

Neonatal osteomyelitis is a rare but potentially destructive pathology for joint development. When the hip joints are affected, it may lead to severe structural deformities and limb length discrepancy. Hip replacement in young patients presents both surgical and rehabilitative challenges. This case illustrates such a challenge, managed through a multidisciplinary approach.

### Case Presentation

A 26-year-old male with a history of bilateral neonatal osteomyelitis presented with a severe deformity of the right hip joint and a limb length discrepancy of 6 cm. In September 2023, he underwent surgery in Germany including:

1. Total right hip arthroplasty
2. 3 cm femoral osteotomy
3. 6 cm total femoral lengthening

The main complication was sciatic nerve injury due to excessive intraoperative stretching, resulting in drop foot. Rehabilitation began on the second post-operative day with passive mobilization of the hip joint, passive movements of the talocrural joint, isometric quadriceps exercises, positioning with a pillow between the legs, bed mobility, standing with two crutches, and walking with a foot orthosis in the shoe. The patient showed complete loss of active dorsiflexion and lack of sensation in the hallux and lateral toes, with sensory deficits following the path of the deep fibular nerve and involvement of the tibialis anterior.

## **Progress**

- At 3 months: Partial return of sensation in lateral toes, but not in the hallux. EMS stimulation applied twice daily to tibialis anterior and extensor digitorum.
- At 6 months: Partial return of active dorsiflexion and toe extension (except hallux longus).
- At 9 months: Walking with one crutch (occasionally), continued use of AFO during ambulation, improved muscle tone and dorsal flexion, but no recovery of hallux longus. Knee extension deficit persisted (up to 10 degrees). Rehabilitation continues.

## **Discussion**

This case highlights the complexity of managing patients with a history of neonatal osteomyelitis, where late interventions demand combined surgical and long-term physiotherapeutic approaches. Drop foot secondary to sciatic nerve injury is a known complication requiring individualized rehabilitation, including EMS, correct positioning, early mobilization, and orthotic support.

## **Conclusion**

Early and structured rehabilitation plays a key role in functional recovery following complex surgical complications. Multidisciplinary treatment supported by physiotherapy protocols and neuromuscular monitoring can lead to satisfactory clinical outcomes in young adults with severe sequelae of neonatal osteomyelitis.

## **Conflict of Interest**

The author declares no conflict of interest.

## **Ethics**

The patient provided written consent for the use of clinical images for academic and publication purposes.

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