

# Case of Sciatic Nerve Palsy from a Right Prosthetic Hip Dislocation

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## Introduction:

- One of the most common early complications after a total hip arthroplasty is the dislocation of the prosthesis [1]. Dislocation occurs when the head of the femur moves out of the acetabulum in any circumstance. The incidence of dislocation of the prosthesis arises in about 2% of patients within 1 year of operation [2]. In 75% of the cases, the prosthetic head dislocates posteriorly [3]. Patients report a sudden onset of pain with snapping feeling, followed by inability to walk or bear weight on the leg, and can present with leg shortening with either external or internal rotation. Risk factors for displacement of a hip prosthesis include advanced age, accompanying neurologic disease, and impaired compliance [2]. Subsequently, patients can deal with various complications such as infections, fractures, heterotopic ossification, and nerve injury.

## Case Diagnosis:

- 63 year old Male with history of recent right total hip arthroplasty, right medial meniscectomy who presented to the emergency room with intense pain in the right hip after standing up from a chair. On presentation, patient was unable to bear weight on the right lower extremity and had profound weakness. Initially had no associated paresthesia. Patient had a Right THA done two weeks prior and was recently discharged from acute rehabilitation. CT imaging demonstrated right prosthetic hip dislocation which resulted in sciatic nerve palsy.

## Case Description:

- On discharge to acute rehabilitation, patient had continued weakness in his right foot and donned a Bledsoe brace. Muscle strength for RLE dorsiflexion 0/5 and plantarflexion 1/5. Patient had limited ambulation, developed paresthesia, and had an antalgic gait with decreased foot clearance. During the rehabilitation course, therapy focused on functional mobility, gait training, transfer training and education on hip precautions. Pain was controlled with a combination of acetaminophen/roxicodone, muscle spasms improved with tizanidine. Patient had functional improvement in RLE during rehabilitation course, improvement in sensory deficits, increased endurance and was fitted with an ankle-foot orthosis.

## Imaging:

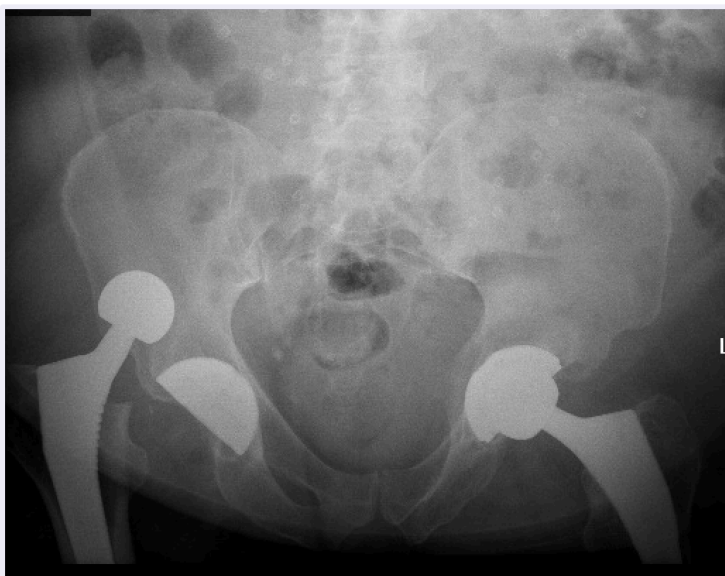


Figure 1: X-ray - Anterior displacement of the femoral portion of the right hip replacement



Figure 2: X-ray - Anterior displacement of the femoral portion of the right hip replacement. No fracture.



Figure 3: X-ray - Status post right total hip arthroplasty. No periprosthetic fracture.

## Discussion:

- The sciatic nerve is the most commonly injured nerve in posterior hip dislocations with innervation to the biceps femoris, semitendinosus, semimembranosus, and adductor magnus. The incidence of sciatic nerve palsy following total hip arthroplasty has been reported to be 1.5%, which could increase to 3% to 8% in revision THA[4]. Furthermore, the incidence of sciatic nerve palsy in dislocated hip replacement is <0.1%, making it a rare occurrence [5]. Neurological recovery is dependent on the level of nerve damage that is present. Complete, or essentially complete, recovery occurs in approximately 41% and another 44% have only a mild deficit. Approximately 15% have a poor outcome which can include weakness that limits ambulation and/or persistent dysesthesia [6]. Patients who develop symptoms and get immediate care can have better outcomes by ensuring the nerve is decompressed. The return of some motor function immediately or within 2 weeks of the procedure have shown to be good prognostic factors for overall recovery [6].

## Conclusion:

- Prosthetic hip dislocations leading to sciatic nerve palsy is a rare occurrence with an overall low prevalence rate. Functional recovery is based on severity of nerve compression and the time it takes to decompress the nerve. Rehabilitation plays a vital role in improving functional recovery with primary focus on muscle strengthening, gait training, and awareness/education of hip precautions.

## References:

1. Biedermann R, Tonin A, Krismer M, Rachbauer F, Eibl G, Stöckl B J Bone Joint Surg Br. 2005 Jun; 87(6):762-9.
2. Dargel J, Oppermann J, Brüggemann GP, Eysel P. Dislocation following total hip replacement. Dtsch Arztebl Int. 2014;111(51-52):884-890. doi:10.3238/arztebl.2014.0884
3. Zahar A, Rastogi A, Kendoff D. Dislocation after total hip arthroplasty. Curr Rev Musculoskelet Med. 2013;6(4):350-356. doi:10.1007/s12178-013-9187-6
4. Hasija R, Kelly JJ, Shah NV, et al. Nerve injuries associated with total hip arthroplasty. J Clin Orthop Trauma. 2018;9(1):81-86. doi:10.1016/j.jcot.2017.10.011
5. Ng J, Marson BA, Broodryk A Foot drop following closed reduction of a total hip replacement Case Reports 2016;2016:bcr2016215010.
6. Schmalzried TP, Noordijn S, Amstutz HC. Update on nerve palsy associated with total hip replacement. Clin Orthop Relat Res. 1997 Nov;(344):188-206. PMID: 9372771.

