Open Journal of
Clinical & Medical
Case Reports

Volume 6 (2020)
Issue 17

ISSN: 2379-1039

# Successful vaginal delivery in women following total hip replacement: Report of a case and review of literature

Yavana Suriya J*; Gowri Dorairajan

***Corresponding Author: Yavana Suriya J**
Department of Obstetrics and Gynaecology, Jawaharlal Institute of Post Graduate Medical Education and Research, Puducherry, India.
Phone: 91-890-347-9912; Email: dr.yavanasuriya@gmail.com

## Abstract

Pregnancy following total hip replacement is uncommon and the management antenatally and in labour is controversial and challenging. We present the case of a successful vaginal delivery following total hip replacement. Vaginal delivery can be considered in the management of pregnancies with total hip arthroplasty without complications in selected women after assessment of the range of movements, prosthetic condition and severity of symptoms.

## Keywords

Hip replacement in pregnancy, total hip arthroplasty, hip prosthesis, metal on metal replacement, fracture femoral neck

## Case Report

The management of pregnancies following total hip replacement (THR) is challenging. We present the management of a 28-year-old G3P1L1A1 with previous normal delivery and unilateral THR. She underwent THR 2 years back for right sided femoral neck fracture following trauma (Figure 1). In the current pregnancy, there was no history of significant pain in the hip-joint antenatally. Orthopedician opinion was sought to decide on the mode of delivery at term and found to have normal range of abduction and flexion movements at hip-joint. The only concern was whether there will be any implant failure during labour as there are controversies in literature regarding the mode of delivery in such women. The women went into spontaneous labour at 39 weeks and underwent normal vaginal delivery in the standard dorsal position and delivered a 3.5 kg baby uneventfully.

Avascular necrosis of the femoral head, rheumatoid arthritis, trauma, etc. are listed as indications for THR in the young. Hormonal effects, ligamental laxity and the increased calcium requirements during pregnancy may have effect on women with THR. There may be hip and groin pain in pregnant women, which even warrants revision surgeries in patients with persistent pain due to loosening of the acetabular component.

The obstetric difficulties encountered are those with regards to the abduction manoeuvres and positioning at the time of delivery. Nepruez et al have opined that a minimum of 1-year duration is required for regaining maximum range of movements post arthroplasty [1]. Patient's and obstetrician's choice of delivery is speculated to change based on the perception of whether vaginal delivery will have adverse effect on the replaced joint. Another factor affecting the mode of delivery is the disease process may by itself cause deformities of the pelvis precluding normal delivery.

Few studies showed that there was no risk of prosthesis-related complications while few have reported caesarean section as the mode of delivery in view of concerns about stress of delivery on the prosthesis [2]. In a population-based cohort study conducted in Finland there were more adverse pregnancy outcomes such as preterm birth, low birth weight and stillbirth after THR. Elective caesarean section was done in 33% (69 of 204) and of the women who underwent trial of labour 68.9% had spontaneous vaginal delivery, 2.2% instrumental delivery and 39% had emergency caesarean section [3]. As our patient had spontaneous labour with smooth quick progress and a normal pelvic architecture, it was decided to deliver her vaginally with precautions to prevent excess abduction of leg.

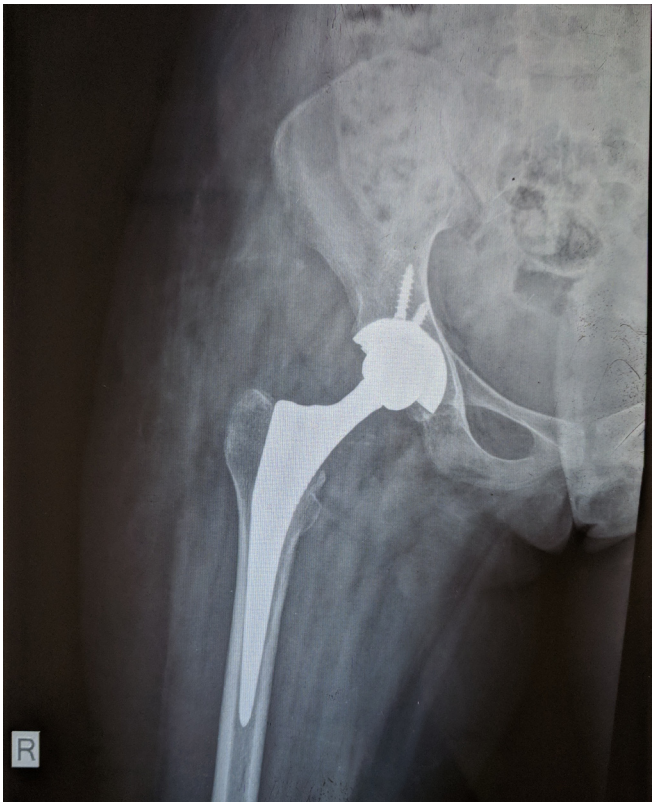


**Figure 1:** X ray showing right side total hip replacement- metal on metal prosthesis.

The impact of THR on fetus is another concern, having noted an elevated fetal chromium and cobalt levels in women with metal- on- metal replacement with trans-placental passage causing anomalies [4] but there were no congenital anomalies in the index pregnancy.

Vaginal delivery is a feasible option in women with THR with acceptable range of motion at hip joint without any deterioration of prosthesis and features of acute pain in hip joint as happened in our case.

**Author's contribution section:** YSJ prepared the first draft of manuscript. GD reviewed and edited the manuscript. YSJ and GD approved the final version of the manuscript.

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**Manuscript Information:** Received: November 04, 2020; Accepted: November 27, 2020; Published: November 30, 2020

**Authors Information:** Yavana Suriya J, Gowri Dorairajan
Department of Obstetrics and Gynaecology, Jawaharlal institute of post graduate medical education and research, Puducherry, India.

**Citation:** Suriya JY, Dorairajan G. Successful vaginal delivery in women following total hip replacement: Report of a case and review of literature. Open J Clin Med Case Rep. 2020; 1713.