



E-ISSN: 2707-8353  
P-ISSN: 2707-8345  
IJCRO 2023; 5(1): 07-09  
[www.orthocasereports.com](http://www.orthocasereports.com)  
Received: 09-10-2022  
Accepted: 13-11-2022

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## Re-revision hip replacement in peri prosthesis shaft femur fracture in operated case of cemented total hip replacement

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**DOI:** <https://doi.org/10.22271/27078345.2023.v5.i1a.135>

### Abstract

**Introduction:** Revision surgery differs from original total hip replacement surgery, which is a lengthier and more difficult process. To get a satisfactory result, substantial preparation is required, as well as the use of specialised implants and instruments. Periprosthetic fractures are most commonly caused by a fall and frequently necessitate revision surgery. Most modifications will include the use of customised implants intended to compensate for compromised bone and soft tissue.

**Case Report:** 68-year-old male with bilateral cemented total hip replacement presents with peri prosthetic shaft femur fracture in left side without DNVD which was van-couper type B2 managed with ORIF + Plating + TBW loop which eventually failed, impairing the patient's routine activity, so he came to SMIMER hospital.

**Management:** We performed implant removal + revision total hip replacement with long stem femoral component, which failed post-operatively, therefore the patient underwent Re-revision surgery with inter locking nail femoral long stem component. During repeated follow-ups, the patient expressed satisfaction with his everyday activities.

**Discussion:** Complication are common in revision surgery. Early management is key to rectify intra operative and post-operative complication. Periprosthetic femoral fractures after total hip replacement is a rare but feared complication. Peri prosthetic fracture is managed based on fracture pattern and stem and bone stock.

**Conclusion:** Surgical treatment of periprosthetic fractures, thanks to the introduction of new implants for osteosynthesis and development of new stems for revision endoprotheses, helps achieve ever better results. Of major importance for choosing the treatment method is correct classification of fracture and stem stability.

**Keywords:** Re-revision replacement surgery, peri prosthetic shaft femur fracture, interlocking femoral stem total hip replacement

### Introduction

Revision surgery is different than primary total hip replacement. Revision hip replacement is a longer, more complex procedure. It requires extensive planning, as well as the use of specialized implants and tools, in order to achieve a good result. Peri prosthetic fractures are most often the result of a fall, and often require revision surgery. To determine whether a revision is needed, it requires consideration of several factors, including the amount of remaining bone, whether your implant is loose, and the location of the fracture. Damage to bone and soft tissue around the hip may make it difficult for the doctor to use standard primary hip implants for revision hip replacement. In most revisions, the doctor will use specialized implants that are designed to compensate for the damaged bone and soft tissue.

### Case Report

A 68-year-old male come to us with complain of pain in left thigh, swelling and palpation of implant with history of fall down after operation on left leg which was primary total hip replacement and ORIF + plating + TBW LOOP in same leg. On presentation patient had difficulty in walking and feeling of implant on lateral aspect of thigh. Patient had past history of 3 operation, in which one in right side and two on left side. Patient gave history of fall down after operation on left leg. First after total hip replacement and second after plating in same leg.

He was operated for total hip replacement on left side for bilateral avascular necrosis of hip joint on 29/9/2018. He was operated for total hip replacement on right side on 4/12/2018.

Then patient give history of fall down in bathroom around 2 months after last operation and x ray suggestive of peri prosthetic shaft femur fracture in left side without DNVD. Which was van-couver type B2, for that we operated as a ORIF + plating + TBW loop in o/c/o total hip replacement left side without DNVD on 9/3/2019. On regular follow up of 6-month union was seen in fracture side. On repeat follow up patient gave history of Fall down around December 2019 and x ray done on 18/1/2020 which show plate was off the bone cortex and on 2/1/2021 x ray show proximal screw was no hold on bone and final x ray on 6/7/2022 show plate was totally off to bone except last 2 screw. After this x ray and blood investigation to rule out infection we admitted the patient for revision surgery.

**Primary Surgery**



**Management**

On 2/8/202 we planned for revision total hip replacement. Plan was implant removal + cement removal + long stem femoral component total hip replacement in this peri prosthetic shaft femur left side without DNVD. As there was no intra operative complication in lateral position and patient was ok vitally. In post-operative x ray there was a cortex breach due to weakening in antero-medial cortex due to screw removal while implant removal.



On frequent follow-up, the patient may stand without assistance and walk with a walker, as well as do his daily normal activities.

**Discussion**

Complication are common in revision surgery. Early management is key to rectify intra operative and post-operative complication. Periprosthetic femoral fractures after total hip replacement is a rare but feared complication. Peri prosthetic fracture is managed based on fracture pattern and stem and bone stock. Its incidence ranges from 0.1 to 4%. It occurs most frequently 7 to 8 years after the primary implant and 3 to 4 years after the revision of endoprosthesis implantation. The main risk factor is the loosening of stem of endoprosthesis. Another risk factor is osteoporosis. Age, sex and obesity do not constitute significant risk factors. Stem stability and presence of bone defects are the main criteria in favor of surgical treatment. If the stem remains well fixed, the osteosynthesis is opted for, whereas if the stem is loose, its replacement has to be performed.

**Conclusion**

Surgical treatment of periprosthetic fractures, thanks to the introduction of new implants for osteosynthesis and development of new stems for revision endoprostheses, helps achieve ever better results. Of major importance for choosing the treatment method is correct classification of fracture and stem stability. Poor bone quality is a common feature; therefore, a perfect mechanical fixation is necessary. The long-term results are affected primarily by the patient's age.

**Conflict of Interest**

Not available

**Financial Support**

Not available

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**How to Cite This Article**

Patel S, Rathod J. Re-revision hip replacement in peri prosthesis shaft femur fracture in operated case of cemented total hip replacement. *International Journal of Case Reports in Orthopaedics*. 2023;5(1):07-09.

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