

Primary Total Hip Arthroplasty (THA) In A Below Knee Amputee With Neck Of Femur Fracture (NOF) Allows Early Ambulation

¹Tan JB, ¹Ong JH, ¹Ngim HLJ, ¹Chua HS, ¹Lee KH, ¹Zulkiflee O

¹Department of Orthopaedics, Hospital Pulau Pinang, Jalan Residensi, 10990 Pulau Pinang

INTRODUCTION:

THA in below knee amputees is rare and provides unique challenges.

MATERIALS & METHODS:

A 52 year old lady had a below knee amputation (BKA) in 2015. Post-operatively she was ambulating using a prosthesis. In 2017, she fell and sustained a left neck of femur fracture (NOF). She underwent primary hybrid THA via a Southern approach.

RESULTS:

She was able to ambulate using her prosthesis and a walking frame on day 3 post surgery. There were no dislocations or wound complications. Harris hip score at 6 months post surgery was 87. Follow up radiographs show no signs of infection.

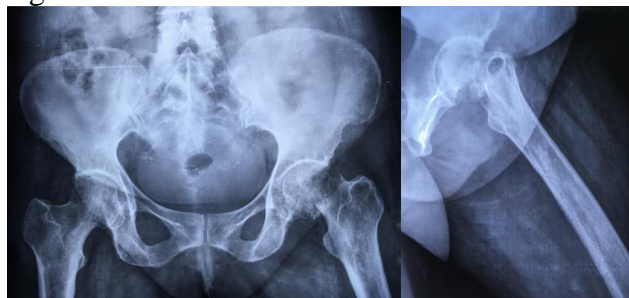


Figure 1: Pre-operative films

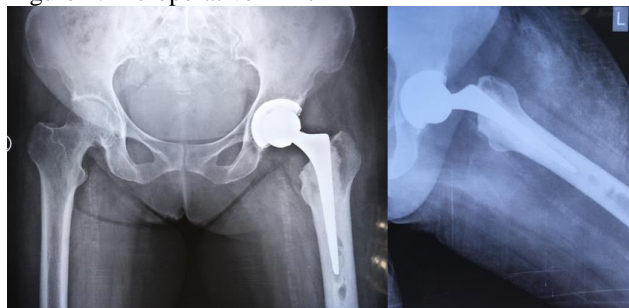


Figure 2: Post-operative films

DISCUSSION:

NOF in BKA patients should be treated with primary arthroplasty due to:

1. High failure rate in patients who underwent fixation due to altered lower limb biomechanics [1]
2. THA allows early ambulation with prosthesis and return to pre-fracture function [1]
3. Higher rate of hip osteoarthritis (OA) in amputees [2]

Challenges:

1. Increased recruitment of hip abductors in amputee gait [3] lead us to choose an approach that avoided abductor injury (Southern approach)
2. Osteopenia in the amputated limb [4] may lead to early failure with cementless stems
3. Positioning and maneuvering of the short stump during dislocation/reduction and stem positioning

CONCLUSION:

Primary THA in BKA patients with ipsilateral NOF using a Southern approach allows good exposure, implant positioning and early rehabilitation while avoiding abductor injury and preempting fixation failure and hip OA.

REFERENCES:

1. Salai M, Amit Y, Chechik A, Blankstein A, Dudkiewicz I. Total hip arthroplasty in patients with below-knee amputations. *The Journal of Arthroplasty*. 2000;15(8):999-1002.
2. Amanatullah DF, Trousdale RT, Sierra RJ. Total hip arthroplasty after lower extremity amputation. *Orthopedics*. 2015 May;38(5):e394-400.
3. Sadeghi H, Allard P, Duhaime M. Muscle Power Compensatory Mechanisms in Below-Knee Amputee Gait. *American Journal of Physical Medicine & Rehabilitation*. 2001;80(1):25-32.
4. Sherk V, Bemben M, Bemben D. BMD and Bone Geometry in Transtibial and Transfemoral Amputees. *Journal of Bone and Mineral Research*. 2008;23(9):1449-1457.