

# TOTAL KNEE ARTHROPLASTY IN A PATIENT WITH IPSILATERAL TRANS TIBIAL AMPUTATION

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## INTRODUCTION:

Osteoarthritis is a commonly occurring ailment among the elderly and the obese population. Studies have shown that more than 80 % of the worldwide population suffers from this disease. Lower limb amputation is becoming a commonly performed surgical procedure in various situations. Norvet et al showed that knee osteoarthritis also occur in amputees, with the contra-lateral limb being affected more than the ipsilateral limb[1]. Accordingly, we report a case of a trans tibial amputee who underwent bilateral total knee replacement, with the first one for his contralateral limb and the second one for the ipsilateral limb.

## CASE REPORT:

A 71-year-old gentleman presented to our arthroplasty unit with complaints of worsening right knee pain. 38 years back, he was involved in an industrial injury which resulted in him undergoing a trans tibial amputation of his right lower limb. 4 years prior to this presentation, he underwent a left total knee replacement for osteoarthritis. Following the diagnosis of osteoarthritis of the right knee, we proceeded to perform a total knee replacement surgery.

Intra operatively, we used patient specific instrumentation to achieve the bone cuts and limb alignments required in arthroplasty surgery. Post operatively, the range of movement had improved, particularly the flexion of his knee. 6 weeks after his knee replacement surgery, his knee pain had alleviated and he is back to ambulating with the same prosthesis, with a well healed surgical wound.

## DISCUSSIONS:

Total knee replacement surgery has long been a saving grace to many patients suffering from debilitating osteoarthritis. This should not be an exception to amputee patients. In literature, cases of performing total knee replacement on

an amputated stump only amounts to 4. The rarity could be due to the requirement of the high level of skill and surgical planning to execute this surgery.

The bone cuts were achieved with the help of patient specific instrumentation navigation. The resultant jig that we designed after studying the patient's detailed anatomy of his femur and tibia was produced via 3D printing. After sterilization, this jig was used intra operatively to perform the cuts. PSI has many advantages, from allowing surgeon itself to carry out pre operative planning without a technician, to providing the ability to tailor the implant specifically to patient's anatomy.[2] Additionally, bone cuts are not dependent on patient positioning and alignment during surgery, thus giving the surgeon more control of the procedure.

## CONCLUSION:

Knee Osteoarthritis affects a huge part of our population, which includes amputees as well. Planning a total knee replacement as the treatment of choice for amputee patients should not be held back due the anticipated technical difficulties in the surgery. PSI should be considered, as it proves to have many benefits when utilized appropriately and in an accurate manner.

## REFERENCES:

1. Norvell DC, et al. The prevalence of knee pain and symptomatic knee osteoarthritis among veteran traumatic amputees and nonamputees. Archives of Physical Medicine and Rehabilitation, 2005. 86(3): p. 487-493.
2. Hafez MA, Moholkar K. Patient-specific instruments: advantages and pitfalls. SICOT-J, 2017. 3: p. 66.