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Tibial polyethylene insert locking mechanism in posterior stabilized arthroplasty can fail with or without trauma

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Modular knee replacement systems allow intra-operative flexibility in component choice. Tibial polyethylene inserts locking mechanisms have been developed to reduce micro-motion and backside wear of the tibial insert.

Case report: We describe a case of failure of the locking mechanism in a posterior stabilised primary knee replacement 6 years after the initial surgery. There was a previous history of trauma 9 months before presentation. Radiographs confirmed failure of the locking-bar with migration to the medial side of the knee. The tibial insert and locking-bar were revised, and the patient made a full recovery.

Conclusion: Locking mechanism is essential to reduce back wear in modular total knee arthroplasty systems. However, disengagement between the polyethylene insert and the metal base plate has been reported in early and late stages after surgery.

Clinical Message: This case report describes one mode of failure to be considered when a patient presents with a painful knee replacement. Similar case has been reported in 2012 by E. Thienpont without a history of trauma. We are not aware of any similar case reports in the English literature. Diagnosis of a locking-bar failure can be easily diagnosed by anteroposterior radiographs.

Keywords: Modular knee replacement, failure of the locking mechanism, posterior stabilized primary knee replacement.

Biography

Shady Hermena is trauma and orthopaedic middle grade in Yeovil District Hospital NHS Foundation Trust. Shady was graduated from the faculty of medicine at Assiut University in Egypt in 2007. He completed his basic training in trauma and orthopaedic surgery in Egypt. He was awarded a master's degree in trauma and orthopaedic surgery from Assiut university (Egypt) after completing primary research evaluating the results of using the Triple Neurotization technique for reconstruction of upper trunk brachial plexus in adult injuries. In 2016 he was awarded the membership of the royal college of surgeons of England. In 2017 he moved his training to the UK and started to work in the NHS.

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