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### Rehabilitation and postoperative complications after opening wedge high tibial osteotomy

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**Introduction:** High tibial osteotomy in cases of early osteoarthritis and spontaneous osteonecrosis of the knee may enable joint preservation and knee function recovery. Opening wedge high tibial osteotomy using a locking compression plate and  $\beta$ -tricalcium phosphate is a technique that provides excellent early fixation and enables shorter postoperative rehabilitation with fewer serious complications. We performed opening wedge high tibial osteotomy on 135 patients between 2010 and 2013.

**Methods:** Here we report our postoperative rehabilitation program after opening wedge high tibial osteotomy and describe the postoperative complications. A total of 135 patients (39 men, 96 women) underwent opening wedge high tibial osteotomy between January 2010 and December 2013.

**Results:** Our rehabilitation program, which included active movement of the ankle, was started on postoperative day 1. Weight bearing was permitted starting on day 2 to the extent that it did not cause pain and the patients started transitioning to a wheelchair. Joint range of motion training focusing on active movement was also started. On day 3, patients started using parallel bars or a walker for gait training to the extent that it did not cause pain. The aim was for each patient to be able to walk on crutches 1 week after surgery and on a single crutch 2 weeks after surgery. Postoperative complications included leg discrepancies in 64 cases, intraoperative fracture in 20, infection in four, cutaneous necrosis of the surgical wound in three, and non-union in one. In most cases, leg discrepancy was within the 1–2 cm range and was correctable with a silicone shoe insole. Intraoperative fracture did not necessitate any changes to the postoperative rehabilitation program as long as it did not involve the joint surface. If a fracture involved the joint surface, 2–3 weeks without weight bearing was required. The infections were all merely superficial and did not affect postoperative rehabilitation, but repeat surgery was necessary for the patient with non-union.

**Conclusions:** We believe that opening wedge high tibial osteotomy, which we introduced in 2010, is a surgical procedure that requires only a short period of limited movement and features very few potential postoperative complications requiring changes to the postoperative rehabilitation program.

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