

# Complications After High Tibial Osteotomy: Open versus Closing wedge osteotomy

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## Purpose

We compared the incidence and severity of postoperative complications after open and closing wedge high tibial osteotomy.

## Patients and Methods

From 1988 to 2004, total 104 patients(104 cases) of closing wedge high tibial osteotomy and 93 patients(93 cases) of open wedge high tibial osteotomy from 2003 to 2006 were investigated. All patients were followed up more than one year postoperatively. An average age was 57.0 years old(17-77) and 50.8 years old(21-77) each, ratio between male and female was 16:88 and 36:59, mean follow up duration was 25.3 months(12~110) and 19.4 months(12~54). Postoperative complications were divided two groups according to severity. Peroneal nerve injury, tibial nerve injury, compartment syndrome, deep infection, non-union and metal breakage were included as severe complications. And peripheral nerve injury such as saphenous nerve, superficial wound infection, extension lag due to increment of posterior slope, joint instability, skin irritation due to metal were classified as mild complications.

## Results

As severe complications, in closing wedge technique there were 7 cases (6.7%) of peroneal and tibial nerve injury, 6 cases (5.8%) of non-union, 1 case (1.0%) of deep infection, 1 case (1.0%) of compartment syndrome and 1 case (1.0%) of metal breakage. On the other hand in open wedge technique there were 2 cases (2.2%) of peroneal and tibial nerve injury. As mild complications, in closing wedge technique there were 6 cases (5.8%) of peripheral nerve injury such as saphenous nerve injury, 2 cases (1.9%) of superficial infection, 3 cases (2.9%) extension lag by increment of posterior slope, 1 case of joint instability. In open wedge technique, 9 cases (6.8%) of peripheral nerve injury, 3 cases (3.2%) extension lag by increment of posterior slope, 2 cases (2.2%) of joint instability, skin irritation due to metal were reported. In closing wedge technique, 16 cases (15.4%) of severe complications and 12 cases (11.5%) of mild complications were reported, however 2 cases



(2.2%) of severe complications and 16 cases (17.2%) of mild complications were detected in open wedge technique.

## Conclusion

The incidence of postoperative severe complications that can cause additional operative management or permanent disability, was much higher in the patients underwent closing wedge high tibial osteotomy.