SAFETY ACTION NOTICE

TIBIAL NAIL SYSTEMS WITH OBLIQUE PROXIMAL LOCKING SCREWS: RISK OF PERONEAL NERVE DAMAGE

SUMMARY

Peroneal nerve damage may be caused when performing locking of a tibial nail which has oblique proximal locking screws. Recommended precautions are given.

BACKGROUND

1. Tibial nail systems are used in trauma orthopaedic surgery for the internal fixation of tibial shaft fractures. The nail is a metal rod which is placed in the intramedullary canal of the tibia.

2. Proximal and distal locking screws are used to hold the nail in place. Some manufacturers use oblique proximal locking screws, i.e. the locking screws pass through the nail at an angle which is not a right angle.

3. An incident has been reported in which peroneal nerve damage was caused while locking a tibial nail with oblique locking screws. The procedure was carried out to repair a closed displaced fracture of the middle third of the right tibia.

4. Holes were drilled for two oblique proximal locking screws anteromedial to posterolateral (see Figure 1, page 2). During the drilling of the lower hole, a sudden contraction of muscles in the leg and foot occurred and after the operation the patient was noted to have foot drop.

5. Subsequent investigation revealed the drill bit had been advanced too far during the drilling procedure and had damaged the deep peroneal nerve. The surgeon considered that there was nothing to indicate when the drill bit penetrated the second cortex. The Instructions For Use provided with the implant did not recommend the use of an image intensifier when performing proximal locking, in common with other makes.

ACTION

6. This notice should be brought to the attention of all appropriate managers, staff and users.

7. Care should be taken to avoid peroneal nerve damage when performing the locking of a tibial nail using oblique proximal locking screws, particularly when drilling from anteromedial to posterolateral.

8. It is recommended that an image intensifier is used when performing proximal locking to avoid inserting the drill too far.

Suggested Distribution

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REFERENCES


**Figure 1**: direction of anteromedial to posterolateral (schematic - not to scale)