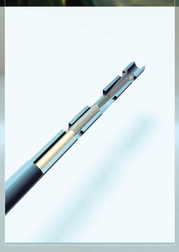
THE NEW SYSTEM IN DIAPHYSEAL FRACTURES TREATEMENT WITH CANNULATED NAILS USING THE LESSINVASIVE TECHNIQUE FOR DISTAL INTERLOCKING

Cimerman M., Kristan A., Kreuh D., Brandoli P., Fius T.



INTRODUCTION

Intramedulary nails with interlocking became the most widely used standard for the fixation of diaphyseal fractures. A diaphyseal area which can be very successfully fixed by using interlocking screws has been significantly enlarged. Placement of interlocking screws is technically demanding and significant exposure to x-rays is necessary.
A patient and the whole surgical team are additionally exposed to radiation using a standard »free hand« interlocking technique.

METHODS

All image diagnostics and existent techniques relate to the "external" view. The entries of the medullary canal of the bone and "internal" problem solving have offered a new perspective and solutions in the long bones surgery. When using the new system which enables the non-invasive technique for distal interlocking it is possible to place distal interlocking screws exactly on the proper position without any exposure to x-rays.

RESULTS

The operation is performed in the standard position, using a traction table if necessary. After reducing the fracture, the nail is inserted into the medullary canal of the long bone. The micro tracer with the attached navigational sensor is inserted into the nail and locked in the proper position, exactly on the distal hole for interlocking. With the help of the external tracer with the attached navigational sensor the proper position for drilling is established.
The special transmitter of the navigational system, placed above the patient table, enables the position and orientation of both tracers to be displayed on the PC monitor in all three planes. The hole is drilled and the distal interlocking is performed. The new procedure takes less than 10 minutes, while the standard procedure takes approximately 30 minutes. The proximal interlocking is performed by standard guidances and conventional technique.

CONCLUSION

The new system enables a complete distal interlocking in all possible situations with all long bones where cannulated nails are used without any need of an image intensifier and exposure to x-rays. The procedure is simple, safe and short, and is in accordance with the 3S surgical principle of Michael DeBakey.

ekliptik
www.ekliptik.si