TECHNOLOGY OFFER

NEW SYSTEM OF OSSEOUS FIXATION

Sumarry of the offer

A Research Group from the Andalusia Public Health System (SSPA *as per its Spanish acronyms*) has developed a new system of osseous fixation intended for the skeletal traction or fracture reduction.

Description of the offer

The skeletal traction is an invasive procedure advised as temporary treatment in certain osseous fractures, which consist basically on the traction of the bone lengthwise in order to immobilize, avoiding the muscle shortening and favouring the consolidation. In order to perform the mentioned traction, it is necessary to set fixation points in the fractured bone. The procedure used currently is the use of the Kirschner needle and stirrup.

A Kirschner wire consists on a needle or a slender structure of metal which is transversely inserted through the bone. Following, it is hold tight from both ends in order to avoid that these are bent when applying the traction. In order to hold it tight, it is used the so called Kirschner stirrup, which is horseshoe-shaped and consist on a mechanism which enables to set and hold the needle tight. Finally, one of the ends of the wire is connected to the Kirschner stirrup and by means of a pulley system it is applied weight to the other end of the wire in order to traction the bone.

This procedure has a number of inconveniences since the insertion of the Kirschner wire may cause injuries in the vasculonervous structures as well as osteolysis and/or infection in the bone. Furthermore, the placement and tighten procedure usually requires an engine and must be performed in an operating theatre. Besides, when dealing with a fracture reduction, it is necessary to apply certain compressive strength to join the fracture edges and for such purpose, some forceps devices are used which are handled by the respective handles. The inconvenience of this procedure is that the handles may be in the middle of the surgical field, thus, being uncomfortable for the surgeon. Another problem consist on the temporary stabilization of the ileosacral join in polytraumatized patients and hemodynamically unstable patients, and for such purpose, it is used the Ganz pelvic clamp, however, it may involve complications due to the difficulty level for its placement, the difficulty faced when finding the insertion point with perforations in the iliac wing, the risk of neurovascular injuries, etc.

The new system of osseous fixation developed consist on a fixation device based on a C-shaped clamp including an elastic stirrup for the skeletal traction or the fracture reductions and an opening tensor specially designed for the handling of the mentioned fixation device.

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Advantages of the offer

Among the advantages offered by the new system developed, it is worthy to mention the followings:

- It is slightly **easier and simpler** to use than the devices currently known.

- It avoids the need of going through the bone completely, involving the respective injuries **risk reduction** in the vasculonervous structures, osteolysis and/or infection.

- As the fixation device has no handles, the surgical field remains free and therefore, it makes easier the surgeon task.

- The development of the opening tensor specially designed to adapt it to the fixation device, **improves significantly the device handling**.

- In the stabilization procedure of the ileosacral join, this new system avoids the sharp punch to fix it to the bone in the Ganz pelvic clamp, since it is possible to use **rounded edges stems** thanks to the compression strength performed by the elastic stirrup.

Intellectual Property

This technology is protected by utility model.

What we are looking for?

We are looking for a partner interested in a license and/or a collaboration agreement to further develop and exploit this innovative technology.

Classification

Activity/Type: Medical device.
Pathology: Musculoskeletal disorders.

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