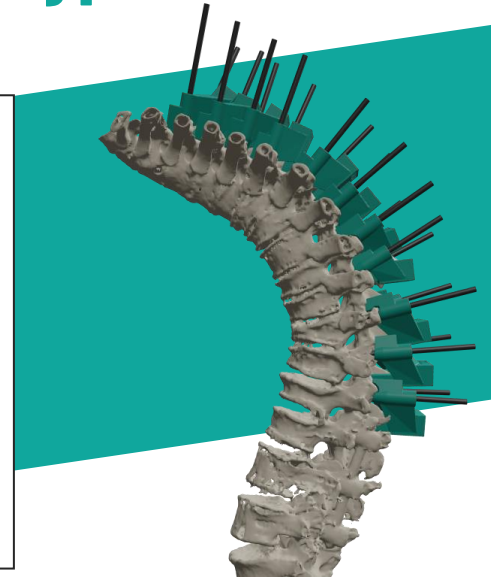


## Congenital thoracic hyperkyphosis

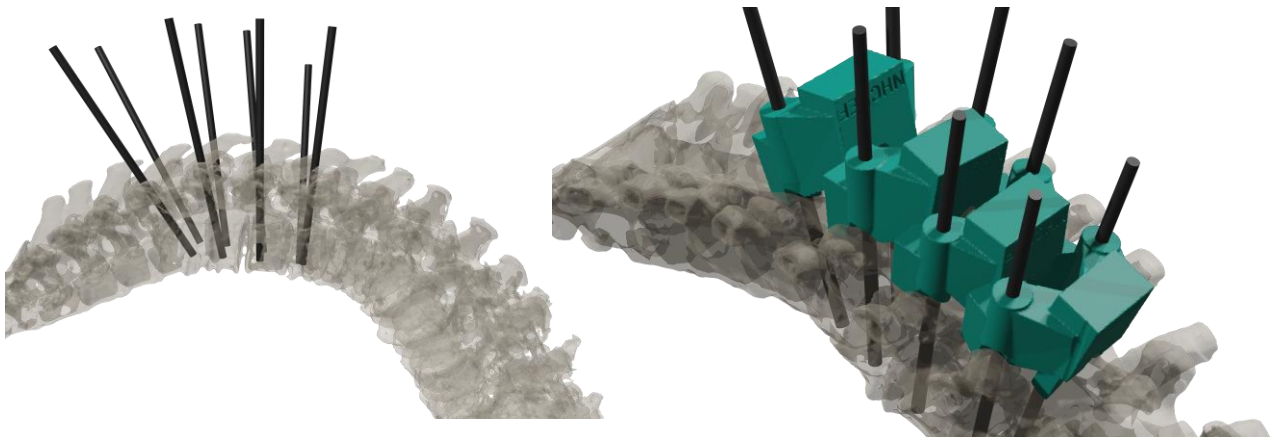
**Lumbar degenerative disease** is a term used by physicians to describe the natural degeneration of the lumbar spine overtime.

It includes conditions such as **spondylosis** (degeneration of the spinal discs as in osteoarthritis), **spinal stenosis** (narrowing of the spinal canal and the openings through which nerve roots exit) and **spondylolisthesis** (forward sliding of the vertebrae).

In those cases where surgery is required, the use of **TOR JIG® S** system enables an easy and fast pedicle screws placement.



<b>Surgeon</b>	Dr. Antonio Luis Mostaza Saavedra
<b>Hospital</b>	San Juan de Dios (León)
<b>Patient</b>	57 years old - woman, with severe thoracolumbar pain, deviation in the anterior and lateral plane of the spine, as well as breathing difficulties.
<b>Pathology</b>	Congenital thoracic hyperkyphosis
<b>Treatment</b>	Spinal cord decompression and T3-L1 instrumented arthrodesis with transpedicular screw cementation and recovery of the patient's normal position.
<b>System used</b>	<b>TOR JIG® S</b> : Anatomical biomodel and 11 personalized surgical guides.



**TOR JIG® S**

**Personalized surgical guides system for pedicle screws placement**

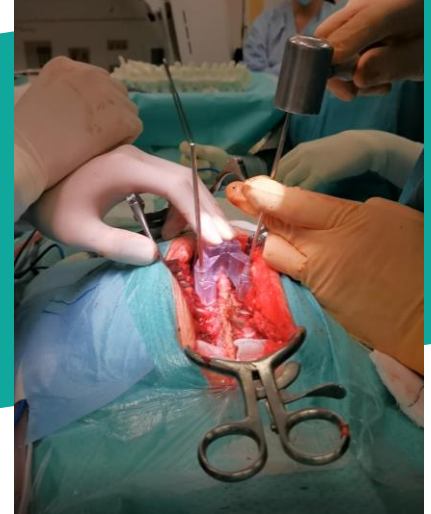
## Surgical planning

- Screws position and orientation are marked according to the surgeon's prescription.
- 3D anatomical model is made.
- Personalized surgical guides are designed for each case. Finally, the biomodel and the guides are manufactured via 3D printing.

## Surgical process

Due to the huge deviation that this patient's anatomy presented, and the great number of vertebrae that needed to be arthrodesed, the surgery was raised to be very long and complex.

Thanks to the use of **TOR JIG® S** system, more confidence and security in the outcome of the intervention was achieved, operating times were shortened as well as the X Ray exposure of patient and professionals.



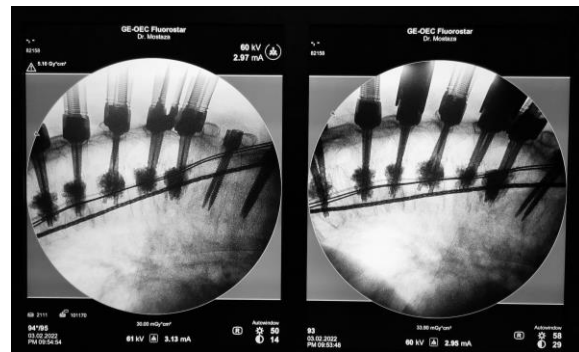
## Performance

The surgery was successfully completed. Just days after the intervention, patient showed a remarkable improvement of the position in the coronal and sagittal planes. The pain had decreased and patient's wandering had improved.

It is important to mention that the patient had very small pedicles, so the biomodel and guides were really useful when the surgeon had to place the pedicle screws correctly and with total accuracy.



Preoperative CT



Intraoperative monitoring

Information about the device. Custom Made Medical Device: Device made to be used on a patient by a practitioner for the surgical treatment of a pathology, being an invasive surgical product, transient use class IIa. Rule 6, Annex VIII, MDR.