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Hospital
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10th International Workshop on Surgical Exploration of the
Mediastinum and Systematic Nodal Dissection



5th Meeting of the Thoracic Oncology, Thoracic
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Society of Pneumology and Thoracic Surgery (SEPAR)



3rd Joint Meeting of the Spanish Society of
Thoracic Surgery (SECT)



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PECTUS UP PROCEDURE

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NEW GENERATION OF THE PECTUS UP SURGICAL KIT

The Pectus Up is a set of stainless steel components designed for Pectus Excavatum treatment in a extrathoracic way. In this demonstration we will elevate the sternum into its right position.

List the advantages of technique:

- Minimally invasive extrathoracic technique
- Simplicity of execution
- Reduced risk of damage
- Reduced blood loss
- Hospital stay 2-3 days
- No ICU stay
- Reduced post-operative pain
- General analgesic medication. No need of morphine
- Quick recovery. 1 week post-op the patient can go back to school, university, work.

Summarize briefly:

Pectus Up consists of placing a sternal plate attached to the sternum and an implant, the Pectus Plate, at the subpectoral level, which are coupled to each other with the help of a lifting system that allows to raise the sunken chest towards a more anatomically correct position. These elements will be attached to the sternum and costal cartilage and will maintain their new position after the operation.

Pectus Up is indicated for children and adults with varying degrees of complexity in terms of sternal depth, asymmetry, and sternal rotation, as long as the clinical evaluation of each case suggests it.

Most important points about how you use the material:

Surgery is customized for each patient according to the information obtained from the CT scan. We will be able to choose among different sizes of implant and screws for each patient. CT scan review to assess whether Pectus Up is indicated. Its analysis guides us on the size of the plate

and the screws to be used during the intervention, as well as the asymmetry of the Pectus excavatum, the rotation and the sternal thickness, and the maximum elevation of the sternum. Explanatory video of the surgical technique and key steps:

Once the appropriate implant has been chosen, we will draw on the patient's skin:

1. The end of the sternum and the xiphoid appendix
2. The central point of the implant where the incision will be made.
3. The shape of the chosen plaque on the patient's chest.

All this will guide your location and maintain your longitudinal alignment. The length of the plate and the width of its wings define the length and width of the subpectoral pocket, which must be done so that the plate is perfectly placed. At the same time, this size of the wings is the one drawn on the skin to define the length of the incision.

Make the incision according to the mark done earlier, about 4cm.

Dissection of pectoral muscle is followed by creating sufficient subpectoral pocket to fit the implant underneath it. Left pocket is larger than the right one in order to introduce the implant. Once the implant fits in the pocket properly, use the electro scalpel to establish the lifting point on the drawn mark. Then the implant is removed.

The first step is to place a plate on the sternum (sternal plate) and secure it with specific screws (sternal screws). The use of the positioner is recommended, as it will serve as a guide for the correct insertion of the screws.

Following the fixation of the sternal plate, the Ball joint is fastened to the central part of sternal plate. The next step is to introduce again the Pectus Plate in the desired position. Now, the lifting system is assembled to the Ball joint.

First, the bolt and the nut (lifting system) must be assembled together. Then the sphere at the bottom of the bolt is introduced into the Ball joint. Once all the pieces are assembled, the rotation of Nut around the Bolt allows a significant rotation and this will facilitate the lifting of the sternum. The Nut should be twisted till reaching the plate. Each full turn of the nut equals 2mm of lifting. From the CT scan measurements turns are already forecasted.

The last step ends when the sternal plate fits perfectly into the implant. From here, the plate fixing screws are inserted into each hole of the implant and screwed into the sternal plate.

Last step is to remove the lifting system by unscrewing the nut and taking out the bolt from the ball joint. After that, unscrew the ball joint from the sternal plate.

To finish the surgery both pectorals will be sutured together as well as the skin. Before closing the incision it is recommended to use a drainage to avoid seroma for 48h maximum.