It's important to understand that everyone has unique anatomies and medical conditions.

If you are considering the SRS procedure, your surgeon should develop a personalized surgical plan that addresses your specific needs.

They should also provide clear explanations for the chosen surgical procedures, such as resection, suturing, plating, or combinations of these methods, and how these approaches will contribute to successful surgical outcomes.

As surgical procedures for treating SRS continue to evolve, the following are brief explanations of SRS surgical procedures.

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Resection- Costal Cartilage Excision

Removing the hypermobile tip of the rib cartilage(s) that are causing damage or irritation to the intercostal nerve above.

Permanent suture procedures

- 1. Two Figure "8" nonabsorbable permanent sutures are placed *around* the cartilages and ribs to anchor the rib above to stabilize the slipped rib.
- 2. Two Figure "8" nonabsorbable permanent sutures are placed *through* the cartilages and ribs to anchor the rib above to stabilize the slipped rib.
- 3. Interlocking lattice-type nonabsorbable permanent multiple figure "8" sutures are used to stabilize the *costal margin (to the sternum)*.

PEEK plate procedure-permanent

The PEEK (polyether ether ketone) plate, a high-performance thermoplastic polymer similar in elasticity to human bone, is cut to the required length. It is securely attached to the stable cartilage using self-drilling titanium screws for convergent biaxial fixation. This allows for osteosynthesis with drill-free, monocortical locking screws. The PEEK plate maintains proper chest wall anatomy, preserving intercostal spacing and the angulation of the posterior rib head while preventing non-anatomic angle changes at the anterior site.

Titanium plate procedure-permanent

Cartilage is removed from the slipped rib(s), and customized sections of a titanium plate are placed vertically and secured by titanium plates screwed to the bone to stabilize the hypermobile ribs.

Titanium Mesh & Plate procedure-permanent

The pre-contoured titanium mesh implants feature a titanium mesh that is secured by titanium plates screwed to the bone. This mesh is flexible and cannot compress in on itself, preventing the ribs from slipping. The titanium plates are positioned horizontally along each rib, ensuring they do not compromise your flexibility.

Polypropylene Mesh-permanent

Nonabsorbable and permanent, this material is constructed from the same knitted polypropylene monofilament as Polypropylene Suture. It resists degradation by tissue enzymes and maintains its strength indefinitely, helping to stabilize the ribs.

Cartilage for a spacer with permanent sutures

A resection of cartilage from the slipped rib is used as a spacer, secured with permanent sutures, to stabilize it.

Biosorbable plate procedures

- 1. <u>Biosorbable plate</u> cut to length and secured vertically to the ribs with a permanent suture through the ribs to provide stabilization.
- 2. <u>Modified costal margin reconstruction "3.0" procedure</u>: Cartilage is resected from the slipped rib and used as a spacer. An injection of demineralized bone matrix is then applied around the area. Following this, two customized sections of a biosorbable plate are positioned and anchored to a stable rib above using permanent sutures for stabilization.
- 3. <u>Costal margin reconstruction "3.0" procedure:</u> Cartilage is resected from the slipped rib and used as a spacer. The BioBridge (biosorbable) long plate is then positioned vertically through the ribs and anchored to the stable ribs to stabilize the costal margin, using permanent sutures to hold. *This procedure has experienced a high failure rate due to fragile plates*.