Scoliosis surgery is a medical procedure performed to correct an abnormal curvature of the spine called scoliosis. Scoliosis is characterized by a sideways or lateral curvature of the spine, which can be caused by various factors, including congenital conditions, neuromuscular diseases, or idiopathic origins. Scoliosis surgery is typically considered when the curvature progresses significantly, is painful, or affects the patient's quality of life and cannot be managed effectively through non-surgical means.

Here are the key aspects of scoliosis surgery:

1. Evaluation: Before considering surgery, a patient undergoes a thorough evaluation, including physical exams, medical history review, and imaging tests like X-rays or MRI scans to assess the extent and nature of the scoliosis. The surgeon will determine the type of scoliosis, the curvature's angle, and the location of the curve in the spine.

2. Surgical Options: There are different surgical techniques to address scoliosis, with the most common procedures being spinal fusion and instrumentation.

Spinal Fusion: Spinal fusion is the primary surgical approach for scoliosis. It involves joining together (fusing) two or more vertebrae with bone grafts, rods, hooks, wires, or screws. This creates a solid, immobile section of the spine, preventing further curvature progression.

Instrumentation: Metal instrumentation like rods, screws, and wires are used to straighten and support the spine during fusion surgery.

3. Surgery Planning: The surgeon carefully plans the surgery, considering the specific curvature, the patient's age, general health, and the optimal approach to correct the deformity. The surgical team may use computer-assisted navigation to enhance precision.

4. Anesthesia: Scoliosis surgery is performed under general anesthesia, which means the patient is asleep and doesn't feel pain during the procedure.

5. Procedure: During the surgery, the surgeon accesses the spine through an incision in the back. The affected vertebrae are then corrected and fused together using bone grafts and instrumentation. Sometimes, multiple incisions are made along the spine, allowing for greater correction.

6. Recovery: After surgery, patients typically stay in the hospital for several days to recover. They may be asked to wear a back brace for a period to support the spine while it heals.

7. Rehabilitation: Physical therapy is an essential part of the recovery process. Patients learn exercises to strengthen the back muscles and improve flexibility.

8. Post-Surgery Care: After discharge from the hospital, patients will have follow-up appointments with the surgeon to monitor the healing process. These appointments may continue for an extended period.

9. Risks and Complications: As with any surgery, there are potential risks and complications associated with scoliosis surgery, including infection, blood loss, nerve damage, and implant failure. These risks are typically low, and the benefits of surgery often outweigh them.

10. Long-Term Outcome: The goal of scoliosis surgery is to correct the curvature, prevent further progression, and improve the patient's quality of life. The long-term outcome depends on the patient's age, the severity of the scoliosis, and the surgical technique used.

Scoliosis surgery is usually considered a last resort when other treatments, such as bracing, have not been effective, or when the curvature is severe and causing health issues. The decision to undergo surgery is made collaboratively between the patient, their family, and the medical team. It is important to consult with a spine specialist to determine the most appropriate treatment plan for individual cases of scoliosis.

A meta-analysis concludes that antifibrinolytics lead to statistically significant reductions in perioperative blood loss, intra-operative blood loss, reduced fresh frozen plasma requirements and reduced post-operative blood loss with TXA¹⁾.

1)

Karimi S, Lu VM, Nambiar M, Phan K, Ambikaipalan A, Mobbs RJ. Antifibrinolytic agents for paediatric scoliosis surgery: a systematic review and meta-analysis. Eur Spine J. 2019 Feb 9. doi: 10.1007/s00586-019-05911-8. [Epub ahead of print] Review. PubMed PMID: 30739188.

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