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3D Navigation & Imaging: Intraoperative CT & MRI

3D Navigation and Imaging use advanced technology to guide surgeons during spine surgeries. It involves real-time imaging techniques like **Intraoperative CT (Computed Tomography)** and **Intraoperative MRI (Magnetic Resonance Imaging)** to ensure precision, safety, and better outcomes.

Why is 3D Navigation Important in Spine Surgery?

The spine is a delicate structure that protects the spinal cord and nerves while supporting the body. Even the smallest error during surgery can impact your movement and quality of life.

3D navigation and imaging give surgeons a clear, live view of your spine during the operation. This ensures:

- Precise placement of screws and implants.
- Minimal damage to surrounding tissues.
- Improved safety and better surgical outcomes.

What is Intraoperative CT?

Intraoperative CT scans provide detailed, 3D images of your spine during surgery. These images help surgeons adjust their approach in real-time, ensuring:

- Accurate alignment of spinal structures.
- Correct positioning of surgical tools.
- Reduced chances of complications.

What is Intraoperative MRI?

Intraoperative MRI offers soft-tissue imaging during surgery. It provides high-resolution images of the spinal cord, nerves, and discs. This is particularly useful for:

- Removing tumors.
- Fixing herniated discs.
- Treating conditions like spinal stenosis.



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Benefits of 3D Navigation & Imaging

1. **Enhanced Accuracy** : Surgeons can see detailed images of your spine, reducing the risk of mistakes.
2. **Minimally Invasive Surgery** :With better guidance, the surgery can be done through smaller incisions, leading to faster recovery.
3. **Real-Time Adjustments** :If anything changes during surgery, these tools allow surgeons to adapt immediately.
4. **Improved Safety**: By avoiding critical nerves and tissues, this technology ensures a safer procedure.
5. **Better Outcomes**: Patients experience less pain, quicker recovery, and better long-term results.

How Does 3D Navigation Work During Surgery?

1. **Pre-Surgery Imaging**
CT or MRI scans are taken before surgery to map the spine.
2. **Real-Time Guidance**
During surgery, 3D images guide the surgeon, ensuring tools and implants are positioned accurately
3. **Post-Surgery Verification**
After the procedure, imaging confirms that everything is in the right place.

Common Conditions Treated with 3D Navigation

- Spinal fractures
- Scoliosis (curvature of the spine)
- Herniated discs
- Spinal tumors
- Spinal stenosis



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Why Choose Dr. Shankar Acharya for 3D Navigation Surgery?

1. **Experience:** With 30 years as a spine surgeon, Dr. Acharya combines expertise with cutting-edge technology.
2. **Advanced Facilities:** Sir Gangaram Hospital is equipped with state-of-the-art 3D navigation and imaging systems.
3. **Personalized Care:** We focus on your unique needs, ensuring a safe and successful treatment.
4. **Trusted Results:** Thousands of patients from urban and rural areas have benefited from Dr. Acharya's care.

FAQs

1. Is 3D navigation safe?

Yes, it is completely safe and enhances the safety of your surgery by providing real-time guidance.

2. Will I feel anything during imaging or surgery?

No, you will be under anesthesia during the procedure and won't feel any discomfort.

3. Is it available for all spine surgeries?

While it's not necessary for every surgery, it is especially useful for complex or delicate procedures.

4. Does it increase surgery costs?

While it may add a small cost, the benefits in safety, precision, and recovery often outweigh the expense.

5. How long is the recovery?

Recovery depends on the type of surgery. With minimally invasive techniques, recovery is often faster.

Contact Us

If you or a loved one is experiencing neck pain, numbness, or weakness, don't hesitate to reach out. Dr. Shankar Acharya and the team at Sir Gangaram Hospital are here to help you regain your quality of life with expert spine care.

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At [Sir Gangaram Hospital](#), your health and well-being are our top priorities. Let us guide you on your journey to a healthier spine and a pain-free life.

At Sir Gangaram Hospital, we combine compassion with technology to provide the best care for our patients, whether you're from a city or village. Trust us to help you live a pain-free and active life!



SIR GANGA RAM HOSPITAL

Trust of Generations

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Official Website

www.SpineSurgeonInIndia.com