

# ADVANCE BRAIN & SPINE SURGERY CENTRE



## Dr. Rahul Singh

M.S., M.Ch. Neurosurgery (P.G.I. Chandigarh)  
Senior Brain and Spine Surgeon  
Neuro Website : [www.neurosurgondrrahul.com](http://www.neurosurgondrrahul.com)

## A Giant Step Forward In Neurosurgery

### Neuro Navigation



**KRISHNA HOSPITAL & RESEARCH CENTRE**

3-136, Guru Nanakpur, Haldwani-263141 (Nainital) U.K.

Neuro Appointment No. 8171010848, 8057820649 Neuro Helpline - 8191989000

# NEURO NAVIGATION

**A Giant Step Forward In Neurosurgery and Spine surgery.**



## **What is Computer Assisted Navigation in Neuro and Spine Surgery ?**

In much the same way GPS helps a driver navigate on the road, computer assisted surgery (CAS) technology guides a surgeon on the patient's anatomy during a procedure. This is the reason CAS is commonly referred to as surgical navigation. In neurosurgical procedures, precision is of the utmost importance and even a millimetre matter. With computer assisted surgery technologies great heights can be achieved in terms of precision and visualization. Neuronavigation software creates a 3D computer model of the patient's own unique anatomy which guides the surgeon to more accurately place implants based on the patient's unique anatomy. With neuronavigation the surgeon can track the exact position of instruments and implants in relation to the patient's anatomy, enhancing the overall precision of the procedure. It allows better visualization of anatomy, which is particularly important when minimally invasive techniques are used. In procedures where multiple X-rays might be used (such as spine and trauma surgeries, neuronavigation may limit the number of X-rays taken and lessen the amount of radiation exposure. Computer assisted surgery is cutting-edge medical technology that offers many benefits to both the surgeon and the patient.



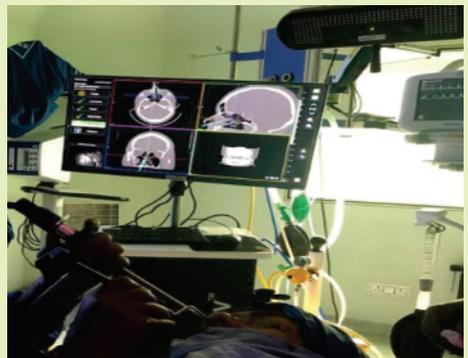
**What are the computer assisted Navigation Neuro surgeries ?**

### **BRAIN SURGERY**

- Frameless biopsies
- Glioma excision
- Aneurysms and AVM surgeries
- Transnasal removal of tumour (Pituitary adenoma)
- Skullbase procedures
- Pediatric Brain tumours
- Ventriculo Peritoneal Shunts.
- Evacuation of Haematoma.
- M.V.D. for Trigeminal Neuralgia.



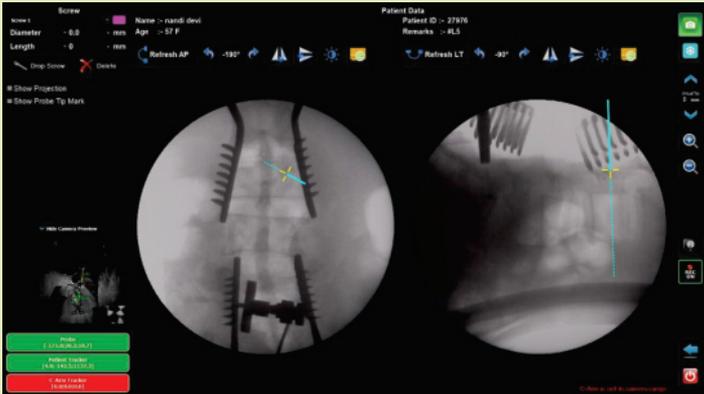
**Brain Tumour Biopsy**



**Pituitary adenoma (Transnasal approach)**

# SPINE SURGERY

- Spine Fracture Fixation and reduction
- Prone positioned surgeries Spine fixation Deformity correction (Scoliosis, Kyphosis, Lordosis).
- Odontoid fracture Fixation
- Cranio Vertebral Junction surgeries.
- Spinal tumours.
- Listhesis correction.



C.P. angle-Acushe Schwannama

## Benefits of Computer Assisted Surgeries:

- More precision in surgery.
- Faster recovery and early return to normal activities
- Less surgical risk
- Less blood loss and fewer blood transfusions
- Less complications
- Shorter hospital stay
- Smaller incisions and minimal scarring.
- Less radiation risk during spine fixation.