

Gadget aid to spine surgery

A STAFF REPORTER

Calcutta: A device that provides real-time 3D image of a person's anatomy during a spine surgery making the surgery more precise was recently introduced at a city hospital.

The Rs 6-crore machine — a combination of an imaging component called "O-arm" and a navigation part called "S8 Navigation System" — guides a surgeon and assists in placing an implant or screw exactly where it should be without damaging any blood vessel or nerve in the area.

The machine allows minimally invasive surgeries instead of open surgeries, something that minimises blood loss, chance of infection and duration of hospital stay, doctors said.

The retractable O-arm can move around the operation table taking a 3D image of the area to be operated. The image is superimposed on the one taken by a camera that goes in through one of the four holes done on a person's body during microsurgery. A composite view comes alive on a screen to guide the surgeon.

A farmer had twisted his neck after falling while carrying a load of vegetables on his head in August.

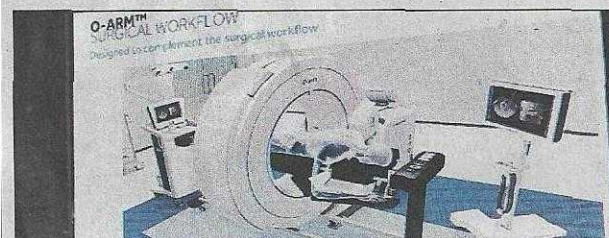
He was discharged within three days of being admitted to the hospital. Screws were fixed to join the first two vertebrae, C1 and C2, which had dislocated, Sisir Das of AMRI Hospitals, Mukundapur, where the machine has been installed, said.

The man would have needed at least a 10-day hospital stay if not for the machine, Das, the hospital director and head of neurosurgery, said. "The neck is a very sensitive area. It was important that the brain stem, the upper cervical cord and vertebral artery weren't damaged while fixing the screws.... Also, the bone through which the screws passed was only 3mm wide."

But the machine assists the surgeon and ensures chances of mistakes go down, he said.

Fifteen spine surgeries using the machine since it was installed at the hospital in August have been successful.

The 3D images produced by the machine's O-arm imaging device make a lot of difference in surgery, a neurosurgeon of another private hospital said. Most hospitals use the C-arm, which produces 2D images of low resolution and these images can't be merged with the ones taken by the camera that goes inside the body.



A presentation slide explaining how the machine at AMRI Mukundapur works. Picture by Sanat Kr Sinha