



## Editorial

### Robotic Surgery Beginning of a new Era in Surgery

The term 'Robot' has always fascinated society and we look with curiosity at some of the programmed robots doing a repetitive act in industries and also in our day to day life. Karel Capek, a Czech play writer is credited with using the term 'Robot' for the first time in the history of robots. He introduced biological entities created in a factory that he coined the term 'Robota' meaning 'a slave'.

Later we saw various forms of robots being shown in fiction movies starting with "Metropolis", the first and most popular robotic movie to the recent one namely "Star Wars". The robots were mostly depicted as creatures having multiple arms and supernatural powers. General Motors used the Robots in 1948 in their vehicle manufacturing unit and this idea was taken up by the surgeons later to do a target stereotactic surgery of the brain in 1985 with a surgical robot called 'Unimate' and this was the beginning of robotic revolution in surgery. In 2000, the "Da Vinci" robot got FDA approval and was introduced for urological surgery and cancer surgery. The cost of "Da Vinci" is to the tune of almost 2 million USD with additional cost of on customs and maintenance cost of nearly 1 Crore of INR a year and that made it unaffordable to general surgeons and its use was limited to megacities. In the last two years, we have seen emergence of surgeon and patient friendly robots and the most popular of these robots is the "Versius" being marketed by CMR from Cambridge.

The surgical robots are electromagnetic devices that can transmit surgeons hand movements to the tip of the instrument without surgeon being near the patient. Thus very precise dissection and suturing is possible under 3D vision with the surgeon sitting on the console and without any tremors of human hand.

It took nearly a decade of planning for me to bring the first surgical robot to the northeast India and it was greatly due to the personal interest of CEO of CMR Cambridge Mr. Mark Slack that we could install the third "Versius" of the country and at present we are proud to be the one of the leading centers of India doing maximum robotic surgeries in the country

Robotic surgery presently is being used greatly for gastro intestinal, liver, Hepatobiliary and gall bladder, urological procedures, cancer, gynaenocological & esophagus, colon, and gland surgery.

Robotic machines are expensive, and the cost of disposable used is also higher, but with the emergence of new robots and with increasing numbers of cases being done, the cost is likely to come down soon and I am confident robots will be seen in many small towns of the country in the hands of senior surgeons who would try to benefit the society with their robot assisted tremor-free young hands.

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With the emergence of single hole surgical robots, Robotic endoscopy capsules and robots with Artificial Intelligence, we are going to see a tech revolution that would revolutionize the way we treat diseases.

I am waiting for a day when my robot would perform my job on external magnetic control or on my voice command and that would be the end of the era of surgical knife.

Thank you all for your continued support.

**Prof. Subhash Khanna**