

Conventional to Robotic Surgery-robotic Evolution



Robotic surgery or robot-assisted surgery is new, exciting, highly advanced surgical technique, and a viable option for patients requiring complex surgical procedures.

It is a keyhole procedure same as done in laparoscopic surgery and it offer significant benefits as compared to traditional open surgeries:

- More control and decreased blood loss
- More precision and flexibility
- Faster recovery with lesser pain
- Aesthetically good
- Early return to normal activity
- Very less chances of infection.

Works with two methods:

- Telemanipulator (direct method)
- Computer controlled (indirect method).

It is very well-known that the first robot-assisted surgery was done by ARTHROBOT which was used and developed in Vancouver in 1983. After this PUMA560 was used, in 1985, by Kwoh *et al.* to perform neurological biopsies with greater precision. After this numerous robot-assisted surgeries performed with PROBOT, ROBODOC, etc. were used in various countries.

Surgery assisted with robots is often heralded as new technology and revolution in the field of surgery. Nowadays, it is one of the most talked topics in every specialties and super-specialties in the field of surgery.

The evolution in robotic surgery again takes a new arm when telesurgery was combining with robotics. Telesurgery well known as Remote surgery is a form of telepresence (Set of technology which allows a person as if they were present to give the appearance of being present). After use of remote in robotic surgeries again the new term was as remote robot-assisted surgeries.

The only important point in remote assisted robotic surgeries is requirement of both rapid and accurate transmission of information. Such type of surgeries like laparoscopic surgeries

are performed under the guidance of images displayed on the monitor using inbuilt camera in devices.

A robotic-assisted surgery gives a surgeon both the choices either perform surgeries with the assistance of robotics (computer controlled) or perform the surgery with telepresence synchronizing robotic-assisted surgery. Both the technologies have the potential to enhance precision and dexterity in complex surgical procedure and most important is it helps to perform a surgical procedure from a remote distance with the help of telepresence.

The only current limitation of remote robotic-assisted surgery that most of the hospitals, trauma centers, etc., are not well equipped with asynchronous transfer mode fiber technology requires for remote surgery.


Enhancement of this adroitness in robotic surgery can be accomplished by making this surgery available worldwide, with accuracy, precision, endurance, and cost-effective.

Anand Kumar

Department of Oral and Maxillofacial Surgery, Career Post graduate Institute of Dental Sciences, Lucknow, Uttar Pradesh, India

Address for Correspondence:

Dr. Anand Kumar,
17/12, Indira Nagar, Lucknow,
Uttar Pradesh, India.
E-mail: editor.ijdms@gmail.com

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