DOI: https://doi.org/10.54393/pjhs.v6i2.2899

PAKISTAN JOURNAL OF HEALTH SCIENCES
(LAHORE)
https://thejas.com.pk/index.php/pjhs
ISSN (E): 2790-9352, (P): 2790-9344
Volume 6, Issue 02 (February 2025)

The Intersection of Robotic Surgery and AI: Revolutionizing Healthcare

OPEN ACCESS

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ARTICLE INFO

How to Cite:
Anwar, M. A. (2025). The Intersection of Robotic Surgery and AI: Revolutionizing Healthcare. Pakistan Journal of Health Sciences, 6(2), 01. https://doi.org/10.54393/pjhs.v6i2.2899

Integrating robotic technology and advanced intelligence systems in surgery into a suite of precision, efficiency and improvement in patient outcomes represents a new era in surgery. Surgical procedures are undergoing these developments that are changing the procedures and have great potential for innovation in techniques and protocol streamlining.

In particular, modern robotic surgical platforms help surgeons during complex procedures including minimally invasive surgery. Because of how precise, dexterous and minimally invasive these systems are, they not only shorten patient recovery time, but there is reduced blood loss and smaller incisions. The da Vinci system is certainly one of the Halls of Movers. Computational intelligence takes these systems to the next level by broadening their capabilities and conceiving new space in the field of surgical practice.

Real time assistance for robotic surgery is gained by intelligence based systems which led to increase in robotic surgery efficacies. Extensive data is processed by advanced algorithms, patterns are found, and suggestions are provided to guide surgeons around operating table.

For instance, these systems can use medical imaging to generate three-dimensional visualizations of organs and tissues with great detail and thus help surgeons plan surgery more accurately. When the surgery is on, the technology follows the surgical field to suggest the best instrument position and to minimize risks. These algorithms also can find potential complication earlier, so surgeons can perform remedial procedures.

Advanced computing and robotic surgery promises tremendous advance in patient care. Together these technologies minimize invasive approaches and decrease the risk of infection, scarring, and protracted recovery periods. Less pain, shorter hospital stays and faster recoveries for daily activities are typical for patients. Beyond that, the systems learn and get better, getting increasingly more precise and personal with each procedure.

Whilst robotic surgical systems currently have a high cost, this does so far prevent wider spread adoption in resource constrained settings. However, as more and more computational help becomes a fundamental piece of the surgery puzzle, it is necessary to think about data privacy, algorithmic bias and etc that can ensure ethical activity.

However, the future of robotics and intelligent endo surgery seems bright. While these technologies are not just helping to refine surgical capabilities, they are revolutionizing patient care making procedures safer, more precise and less invasive. This integration will certainly have an impact on our modern era of medicine.