STUDENTS' CORNER
LETTER TO THE EDITOR

# Harnessing the power of artificial intelligence: A new door for quick surgery in Pakistan

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*Madam*, Artificial intelligence (AI) has the potential to transform surgery in Pakistan, improving results, reducing complications, and increasing patient safety. Deep learning, a branch of machine learning, can assist surgeons in making wise judgments. Pubmed and Research Gate discuss the promise of AI in surgery. Incorporating AI in healthcare systems can expedite diagnosis and management while avoiding injudicious resource allocation.

AI-based techniques in cardiology, nephrology, and neurology enable high-accuracy detection of cardiovascular disease risks, kidney disease treatment, and epileptic episode identification. Neurological devices like bispectral index monitor (BIS) and Near-infrared spectroscopy (NIRS) utilize advanced technology for reliable monitoring and objective diagnosis of neurological issues.[1] AI uses electronic data and neural network methods to evaluate operating room logistics, time management, and anesthesiologist activities using electronic data and neural network methods.[2] AI algorithms are effectively detect minute differences for accurate diagnosis, with studies showing high specificity, sensitivity, and inter-operator repeatability. AI can be used to train and assess neurosurgical residents and early mid-career surgeons, improving diagnosis and 3D simulation labs.[3] Surgeons play a crucial role in adopting AI-based technologies for surgical care by partnering with data scientists to capture novel clinical data and generate meaningful interpretations. They should demand transparency and interpretability in algorithms to hold AI accountable for its predictions and recommendations.AI advancements in plastic surgery practice, research, and education offer opportunities for improvement. Combining AI-enabled decision-making tools with predictive analytics and human intuition, surgeons can make real-time decisions based on 3D planning, anatomical localization, and navigation.[4] While current AI tools cannot perform complex surgical procedures, advancements may enable them to perform more complex tasks in the future.

Pakistan is a significant market for AI-based solutions, utilizing technology in various industries to address challenges and boost demand. The country has enhanced its self-security systems, including AI-powered missiles, cyber security, and effective cameras.[5] AI allows tasks to be completed more precisely and efficiently, with machine learning and deep learning being advanced subtypes. In developing countries like Pakistan, AI tools are needed for patient-centred diagnosis and treatment assistance, especially in emergency surgery such as cardiac illnesses or life threatening bleeding caused road traffic accident. Hence insuring patient receive care timely. An appropriate budget should be allocated for AI technologies in the health sector.

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