



Artificial Intelligence: Blessing or Curse?

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It is said that Artificial Intelligence (AI) has Possibility to change the future of Orthopaedic Surgery like the smart phones have changed our lives.

Artificial intelligence (AI) is a term given by John McCarthy as a theory that computers could ultimately learn to do work recognizing the methods with minimal to no involvement of human beings. AI in recent terms can be redefined as the application of innovations that can give machines the possibility to solve difficulties that requires human intellect. In 1976, Jerrold S. Maxmen wrote that AI would bring the era where the physicians are eliminated in this century. With the exponential advent of computers physicians would be eliminated and AI will over-rule. AI has progressed from being only theory to probable tool. AI has made it possible to have auto pilots and auto drivers without drivers for cars, doing shopping online without being personally present, virtual meetings on Zoom rather than physical meetings.

The advantage of Artificial intelligence (AI) is that it eliminates human errors and makes it full proof. AI helps in medicine by pooling in data, using power of computing and develop own step by step methodology to carry out task successfully. Patient specific Instrumentation makes the life of surgeon very easy. Thus Orthopaedic Surgeons can provide better care to the patients faultlessly. It is a magic wand which eliminates human errors and gives results to perfection. Overall AI helps in diagnosing, deciding treatment and helps in executing surgery to the level of perfection impossible by humans and precision rather than eye balling.

AI includes machine learning (ML) and deep learning (DL). AI makes computers do the work which is humanly not possible and work which is faultless, in short it supersedes performance done by humans. It helps in recognizing the problems and situation, helps in drawing treatment protocol, pre-operative planning and goes to the extent of executing it to the level of perfection.

Maximum usage in orthopaedics is in spinal surgery, joint replacement, difficult Pelvi-acetabular fractures. AI helps in giving consistently good results and eliminates human errors and in consistency due to fatigue.

Robotic surgery especially in joint replacements is becoming norm. Although it is mainly instrument and implant manufacturing company driven, it brings the accuracy of the surgery to a level which is expected out of a perfect surgery.

3 D printing and preparing model on which surgery can be performed so that real surgery can be performed faultlessly.

We are becoming more and more machine and robot dependent, so the skill and art of surgery is vanishing. Robotic Surgery has a long learning curve, exponential cost and reports show that surgery with or without Robot outcome is same or with marginal difference. One step forward is two steps behind a general saying how true or false it is for AI only time can say, or do we need AI to predict it?