



## The Robotic Industry in Orthopedic Surgery

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Subsequent to the digitalisation of most sectors, including healthcare, and recent weightage on robotics and AI, the orthopedic community has been pushed to include robotics as a part of their routine surgical armamentarium. While many centres have been using the robot in joint replacement surgery for a long time now, it is time we can have some early results and comparisons to non-robotic surgeries. The implant companies have hedged their implant usage and profits by making implant-specific robots. The implant companies also market their own surgeons. The fact that so many implant designs exist is a proof that not one hip or knee implant is particularly superior to the other as far as patient outcomes are concerned. The corporatisation of private hospitals have led to increased robot buying capacity. Introduction of robots in corporate hospitals is deemed to market it effectively with their employed full-time surgeons to increase its usage without any valid literature evidence. This Robot and AI will be used by all corporate hospitals as a major marketing tool and establish certain standards in the public domain. Extra charges for robotic usage and consumables without their acceptance by certain mediclaim TPA's can be a deterrent in the process of selecting the inclusion of robot for joint replacement surgery.

Robot usage unfortunately is linked with being up to date in technological advancement vs being outdated or backward in technological training and usage. I have witnessed many hospitals where computer navigation machine was bought and then was dusted at regular intervals until major articles in western literature revealed no advantage of its usage. The myth that the only way to do a perfect knee or hip replacement is to use a robot has now started to prevail. Training surgeons who learn to do hip and knee

replacement with robotic assistance could be at some disadvantage of skill development and may also be totally dependent on robot with a worry that robotic dysfunction during or prior to surgery can lead to disastrous consequences. It would seem almost mandatory for a trainee to learn the basic joint replacement techniques before getting trained for robotic usage. Unicondylar knee replacement in particular can be a relief with a robotic mill and haptic boundaries.

The robotic usage in hip does not take subsidence into consideration and that might change the outcome later. The acetabular orientation could improve with image-based robots in defects, dysplasia.

Very soon we hope to get softwares for revision hip and knee replacement surgeries. The robotic usage is a revolution in the implant industry and will seriously impact the lives of orthopedic surgeons all around the world in coming years.

PS: I work in institutions where robots are available and I am trained to use and using.