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Extended Abstract

Challenges in initiation and running a ENT, head & neck robotic surgery program in our country

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Abstract

To initiate and run the robotic program successfully has been a very challenging task for us. This program at our hospital which is one of the largest corporate hospitals in India started two and half years ago. We have done 110 cases so far. In developing countries like India starting such a program involved high costs of training as there is no ENT, Head and Neck training program here and non-availability of trained surgeons is added disadvantage. Running the program successfully has also been met with challenges. There are various reasons or drawbacks here as to not having very large numbers in our series despite having excellent feedback from almost every patient that underwent robotic surgery at our setup.

This cohort study used clinical registry data from Michigan from January 1, 2012, through June 30, 2018. Trends were characterized in the use of robotic surgery for common procedures for which traditional laparoscopic minimally invasive surgery was already considered a safe and effective approach for most surgeons when clinically feasible. A multigroup interrupted time series analysis was performed to determine how procedural approaches (open, laparoscopic, and robotic) change after hospitals launch a robotic surgery program. Data were analyzed from March 1 through April 19, 2019.

Hospitals participating in the MSQC perform more than 90% of all surgical procedures in Michigan. The MSQC maintains a clinical registry using a standardized data collection platform, validated case-sampling methods, and trained nurse data abstractors at each participating site.

Data accuracy is maintained through rigorous training, internal data audits, and annual site visits by MSQC program staff. This data source allowed us to identify robotic procedures with greater precision and accuracy than is possible using claims data. This study was approved by the University of Michigan institutional review board, which deemed the study exempt from informed consent owing to use of secondary data.

This study was designed and reported in adherence to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline. Recent advancements in robotics technology have allowed more complex surgical procedures to be performed using minimally invasive approaches. In this article, we reviewed the role of robotic assistance in Otolaryngology and Head and Neck Surgery. We highlight the advantages of robot-assisted surgery and its clinical application in this field.

Recent advances in equipment and surgical techniques have made minimally invasive surgery (MIS) a well-tolerated and efficient technique in several fields of surgery. It has several advantages over standard surgical approaches, including more rapid recovery, lower rate of postoperative infection, decreased pain, better postoperative immune function, and cosmetic results [1–3]. In this way, robotic-assisted surgery (RAS) has gained popularity in several surgical specialties and many institutions are now investing in medical robotic technology for applications in general, urological, cardiac, gynecological, and neurological surgery. This new and exciting technology has been shown to be safe, have better or comparable outcomes, and can be cost effective when compared with conventional surgical approaches [1–3]. This has raised interest in its use in other surgical fields, such as otolaryngology and head and neck surgery.

Head and neck and several airway procedures have been associated with a large amount of surgical dissection with associated large surgical incisions. This can result in major tissue damage, functional impairment, and a decreased quality of life [4]. However, with minimally invasive approaches, the improved video imaging, endoscopic technology, and instrumentation has provided the surgeon with multiple endoscopic access points. While the advance of endoscopic technology has increased surgeon capabilities, the technique still has several challenges associated with it. Examples include: (1) the limited range and degree of motion of instrumentation, (2) operative field limited to “line of sight” (3) lack of three-dimensional imaging of the operative field (4) amplification of physiologic tremors, (5) compromised dexterity and (6) mismatched hand-eye coordination [5, 6]. With these challenges in mind, the development of surgical robotics was rooted in the desire to overcome the limitations of current endoscopic technologies and to expand the benefits