Surgery using Laparoscopy, Endoscopy, and Robots

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Abstract

Robotic cardiac surgery skill training is either low or nonexistent in residency curriculum, in contrast to other surgical residency training programs, such as thoracic surgery. A review of resources like PubMed, MEDLINE, and Google was done to determine how much training in robotic heart surgery residents had received. Scholar. The training courses for robotic cardiac surgery offered by cardiothoracic surgical societies and published papers were reviewed. There is hardly any training available for residents in robotic heart surgery. Implementing simulation training, enforcing hour requirements, and constructing wet/dry lab model training in a graduated manner are strategies to establish proper robotic heart surgery training for residents.

It will be crucial to give residents specialized training and opportunity to hone their robotic heart surgery skills as the practice of robot-assisted cardiac surgery spreads.

Keywords: Biomarkers • Cognitive impairment • Homocysteine level • Multiple sclerosis • Physical disability

Introduction

Even while the area is still expanding, there are still very few institutions that have robotic cardiac surgery programs, and even fewer that have integrated robotic training into their surgical curricula. It is not unexpected that minimally invasive procedures are used considering the technical difficulty of heart surgery and the amount of practice needed to develop fundamental operating proficiency. It is true that cardiothoracic surgery trainees should be required to show proficiency in open surgical procedures before being given the chance to expand their technical knowledge using minimally invasive approaches. It makes sense in this regard to place less of a focus on learning minimally invasive technical skills when preparing for cardiothoracic surgery. This understanding should not be used as an excuse to keep cardiothoracic surgery trainees from actively participating in the use of cutting-edge surgical methods, like robotically assisted heart surgery. Instead, it is the responsibility of the surgical experts to impart their knowledge to the upcoming generation of cardiothoracic surgeons in order to guarantee the continuous progress of this modern surgery.

Although several cardiothoracic surgical training programs expose their residents and fellows to robot-assisted surgery, greater research and the construction of surgical curricula for residents are necessary given the increased use and expanding applications of robotic heart surgery. Our goal was to determine the extent to which residents had been trained in robotic heart surgery and to talk about how to get them ready for the impending change. Residents receive training in robotic cardiac surgery sessions. Since robotic-assisted cardiac surgery is still a relatively new field of surgery, those currently in training who want to use these methods in their own practices when they graduate and/or complete their fellowships will almost certainly need to pursue additional education.

However, residents and fellows who are interested in a chance for earlier exposure to and continued development of their operative skills in robot-assisted surgery throughout their training could not only help make them more competitive when applying for attending positions where minimally invasive cardiac surgery programs are well-established, but they could also make themselves more appealing among other institutions that are interested in enhancing the diversity of their surgical practices.

The steep learning curve and requirement for additional post-graduate training or mentorship while transitioning from a trainee to an attending surgeon with autonomy can be minimized by giving residents and fellows a solid foundation and familiarity with the fundamentals of robot-assisted cardiac surgery. The challenges of health insurance regulations, institutional budgetary constraints, and the constrained government funding for public hospitals make it difficult to build viable robotic programs. However, in order to lower the price of robotic heart surgery, some hospitals have adopted hybrid procedures. Additionally, cost-effective techniques such employing Chitwood clamps rather than aortic endoclamps are helpful tactics to lower the cost of robotic surgery. As a result, prior difficulties and costs associated with equipment upkeep, the patient volume to pathologic indication ratio, and the complexity of training operating room staff are becoming obsolete. As patents expire, the cost of buying consoles decreases, and so do institutional and patient attitudes and cultures around this technology. Concerns about robotic surgery's price are steadily dissipating. while fostering safe, competent, and effective.

During residency, robotic heart surgery training is essentially nonexistent. It will be crucial to give residents specialized opportunities for cardiothoracic surgery training as robot-assisted heart surgery becomes more prevalent. Develop their robotic heart surgery expertise. Maintaining a competitive edge in this rapidly evolving, technologically driven industry while understanding the needs of our patients and their shifting health contexts will help us understand where we stand, and especially how we stand between them and their cardiac surgical disease. The future of many trainees may not have included robotics, but it is our responsibility to prepare our residents and fellows for a new world where both institutions and patients are expected knowledge in this field. Residents who are given the opportunity to work closely with robots during simulation training, lab skill development, or as first assistants will develop into skilled attending more quickly and successfully.

Conclusion

During residency, robotic heart surgery training is essentially nonexistent. It will be crucial to give cardiothoracic surgery residents specialized opportunity to advance their abilities in robotic cardiac surgery as robot-assisted cardiac surgery becomes more prevalent. Whether it's minimally invasive, endovascular, hybrid, or e-learning and simulation training, keeping up with this rapidly evolving, technologically driven industry will teach us where we stand and, more importantly, how we stand between our patients and their cardiac surgical disease. During residency, robotic heart surgery training is essentially nonexistent. It will be crucial to give cardiothoracic surgery residents specialized opportunity to advance their abilities in robotic cardiac surgery as robot-assisted cardiac surgery becomes more prevalent. Whether it's minimally invasive, endovascular, hybrid, or e-learning and simulation training, keeping up with this rapidly evolving, technologically driven industry will teach us where we stand and, more importantly, how we stand between our patients and their cardiac surgical disease.

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