

Surgeries performed by robots

Andres Meyers*

Department of General Surgery, University of Catamarca, Catamarca, Argentina

INTRODUCTION

During the first 8 1/2 years of using the Maze method for the surgical treatment of atrial fibrillation, the authors examined the clinical outcomes.

Overview of prior data: About 10% of persons over the age of 60 have atrial fibrillation, which affects 0.4% to 2% of the total population. Significant morbidity and death are linked to it. Pain is caused by the erratic heartbeat, hemodynamics are compromised by the absence of synchronous atrioventricular contraction, and thromboembolism risk is increased by blood flow stasis. The Maze technique was performed on 178 patients between September 25, 1987, and March 1, 1996. The Maze-I procedure was performed on thirty-two patients, the Maze-II treatment on fifteen, and the Maze-III procedure on one hundred and eighty-one patients. Patients were examined for atrial fibrillation and atrial.

DESCRIPTION

Robotic technology is improving dexterity, precision, and stability in surgery. Robots utilise computed tomography and magnetic resonance imaging data to direct equipment to the treatment location during image-guided treatments. In order to plan operations, this calls for novel algorithms and user interfaces. It also calls for sensors to register the anatomy of the patient with the preoperative picture data. Using remotely controlled robots, a surgeon can do minimally invasive surgeries within the patient's body without having to make big incisions. Optimal dexterity under these access limitations requires specialised mechanical designs and sensor technologies. Numerous surgical specialisations can benefit from the use of robots. Robots guided by images can biopsy brain lesions in neurosurgery with little harm to surrounding tissue. Robots are frequently utilised in orthopaedic surgery to accurately fit the femur.

Enhancing patient safety and quality of life is the main goal of successful surgical advancements. In a time when patient outcomes and healthcare budgetary policies are of utmost importance, postoperative outcomes are being examined more closely, and research ought to concentrate on the best therapies in terms of improved quality of life and quicker recovery.

The development of Minimally Invasive Surgery (MIS) is

Address for correspondence:

Andres Meyers,
Department of General Surgery, University of Catamarca,
Catamarca, Argentina;
E-mail: andresmeyers21@gmail.com

Word count: 956 **Tables:** 00 **Figures:** 00 **References:** 00

Received: 04.09.2023, Manuscript No. ipjus-23-14186;

Editor assigned: 07.09.2023, PreQC No. P-14186;

Reviewed: 21.09.2023, QC No. Q-14186;

Revised: 03.10.2023, Manuscript No. R-14186;

Published: 19.10.2023

the single biggest surgical advance in the last thirty years. By fusing several technology advancements, this revolution has drastically altered surgical practise. The surgeon's hands and eyes are replaced with high-definition cameras and microinstruments that are inserted into the body through tiny incisions.

The advantages of this approach include less surgical trauma and incision-related problems such surgical-site infections discomfort, and hernias, shorter hospital stays, an earlier return to normal activities, and better cosmetic results.

Robots are mechatronic devices, which combine mechanics, electronics, and informatics. They can be physically operated using mechanical or computer-based interfaces, or they can be programmed to carry out specified jobs or task sequences automatically.

The da Vinci® system was developed instead of the Zeus® robot following the merging of computer motion and surgical intuitive. From the perspective of the patient, there are a few distinctions between this robot and the Zeus® robot. Firstly, it is a smaller platform that moves on wheels. It is furnished with three (or four, depending on the version) robotic operating arms that may be docked around the operating table. The surgeon's console, which has a stereoscopic 3D immersive camera that provides a tenfold magnified vision and is controlled by the surgeon for steady and accurate navigation, is the main advance over the Zeus® robot. Endowrist® (Intuitive Surgical) technology is used in ergonomic grips to replicate human hand movements more naturally. It is evident that improved dexterity and ergonomics

In the 1970's, robotics was used in surgery as part of a military project supported by the Defence Advanced

Research Project Administration (DARPA) and approved by the National Aeronautics and Space Administration (NASA). The goal was to replace the surgeon's physical presence by providing care to soldiers in combat zones or astronauts in spacecraft. Robots under control might operate in safe surgical pods in the case of natural disasters.

The initial robotic generation introduced into the operating room was intended to carry out precise activities guided by images. An altered PUMA 200 industrial robot (programmable) was created in 1985.

CONCLUSION

The surgical robotic system is a remarkable technological marvel. In order to make setup easier and offer more features including near-infrared technology, it has undergone upgrades recently. The most recent model, the da Vinci Xi™ system, which was introduced in 2014, is more ergonomically structured and less bulky. But it still has significant technical flaws, with force feedback being absent.

Titan Medical (Toronto, Ontario, Canada) was developing all-in-one robotic systems that appeared to be prospective rivals of da Vinci®. Titan True Touch Technology™, a patented haptic feedback technology, was included in the Amadeus Composer™ (fitted with articulated instruments intended for surgery in confined places in thoracic, pelvic, and ear, nose, and throat surgery) and the Amadeus Maestro™ (4 arms). Nevertheless, due to possible patent infringement, the business recently halted the development of these prototypes, which featured a configuration very similar to the Da Vinci. Instead, it is currently manufacturing a unique single-access robotic device.