

Program: Robotic Assisted Spinal Fusion: The Newest Technology in Spine Surgery

Speaker: Richard V. Y. Chua, MD, Clinical Professor of Neurosurgery, University of Arizona School of Medicine

Introduced by: Gonz Chua, MD

Attendance: 89 devices logged in

Scribe: Gonz Chua, MD

Editor: Carl Warner

The Zoom recording of today's presentation can be found on the Scientech Club's website at:

<http://www.scientechclub.org/zoom/488.mp4>

The speaker started the talk on the recent developments in neurosurgery of the spine and asked why not take advantage of new technology as seen in other specialties such as the da Vinci robot in urology, gynecology, general and thoracic surgery. He went on to describe a new system, the Mazor X Stealth System developed by Medtronic, designed specifically for spine surgery.

Dr. Chua described a principle similar to the GPS system to localize anatomy of the spine referencing images from CT scans or MRI providing the opportunity to pre-plan the entire surgery days or weeks before hand. He described his experience with this system for the last two years, being the first to use it in Arizona.

Spinal fusion is done to stabilize the joints in the spine and success of surgery depends on accurate placement of metallic screws. Free-hand surgery has a success rate of 72% versus a 98% or better success rate for perfect placement of screws with the use of robotics.

Robotic placement of the screws allows perfect positioning under CT or MRI guidance with imaging control throughout the procedure providing immediate visual confirmation. It helps cut down complications and allows the use of smaller screws due to its precise positioning method. In addition, there is a reduction in radiation exposure to the patient and medical personnel in the operating room due to the increased efficiency.

He then showed videos of actual operating room scenes with the use of the robot arm placing screws in spinal fusion and patients with imaging before and after the operation. The complication rate is reduced from about 5-10% to less than 2%. Fifty percent of spinal surgeries using robotic assistance are now done on an outpatient basis without an overnight stay. He concluded that robotic assisted fusion increases efficiency, decreases complications, and has better outcomes. He hopes for more technology assistance in the future. Dr. Chua then spent another 30 minutes clearly and patiently answering the many questions from the audience.