



Press Release

Knee Joint Damage Is Not Just for the Elderly: Young Patients Should Seek Early Treatment for a Better Quality of Life

Robotic Arm Knee Surgery: Fast, Precise, and Accurate

Patients can start non weight bearing walking practice just hours after surgery, Accelerating Recovery

Robotic Surgery Development Center Promotes Collaboration, Benefiting the Medical Community and Society

(Hong Kong — November 19, 2024) As people age, the risk of knee joint degeneration and damage increases. Osteoarthritis of the knee is commonly seen in older adults, and many seniors suffer from knee pain. However, doctors are warning that knee arthritis is not exclusive to the elderly; young people can also endure the challenges of this condition. In fact, some young patients may experience a faster deterioration of their condition compared to older individuals, significantly impacting their work and quality of life. It is crucial to address this issue and seek early treatment. In addition to conservative treatments, joint replacement surgery is a common method for addressing knee issues. To facilitate patient recovery and minimize the impact of surgery, the medical community is continuously improving joint replacement techniques. One significant advancement is the development of robotic arm surgery systems, which have become increasingly precise. Most patients can get out of bed just a few hours after surgery, greatly speeding up their recovery process.

In response to this need, Hong Kong Adventist Hospital — Stubbs Road, in collaboration with Zimmer Biomet, has established the first robotic surgery development center in the Greater China region. This center will serve as a training base for orthopedic surgeons in Greater China and the Asia-Pacific region, providing training and academic exchanges related to robotic joint replacement surgery. The goal is to enable more orthopedic centers in the region to offer these surgeries, making robotic joint surgery more accessible and providing higher-quality treatment for patients in need.

The knee joint supports the body and is essential for movements such as walking, running, and jumping. However, various factors can lead to knee joint damage, including accidents and conditions like osteoarthritis and rheumatoid arthritis. While the likelihood of degeneration increases with age, Dr. Cheung Man-Hong, Steve, an orthopedic consultant at Hong Kong Adventist Hospital — Stubbs Road, emphasizes that there are indeed young patients facing these issues.

Research: One in Three Young Patients Struggles with Knee Arthritis

Dr. Steve Cheung cites a study from Canada indicating that one in three individuals aged 20 to 54 report suffering from knee arthritis. The primary causes of arthritis in young patients are believed to be related to sports injuries and the rising prevalence of obesity. The study also reveals that young patients experience pain at a higher rate than older individuals, with over 30% of patients aged 20 to 44 reporting severe and frequent joint pain—3% to 9% higher than other age groups. Additionally, nearly 35% of patients in this age range indicated that their sleep is affected, a figure 6% to 16% higher than other age groups, reflecting the significant burden knee arthritis places on young patients.



Another study from Singapore found a notable increase in the rate of young patients affected by arthritis or chronic joint issues. In 2001, 7.4% of individuals aged 18 to 65 reported arthritis problems; by six years later, this figure had risen to 23.7% for those aged 18 to 50. This trend highlights the growing prevalence of joint issues among young people. In fact, the Singapore study also noted that nearly 5% of patients requiring total knee replacement surgery were under 50, emphasizing that young people should not mistakenly believe that joint problems do not apply to them.

Dr. Steve Cheung adds that some young cases may deteriorate more quickly than those of older patients, leading to a higher risk of severe knee arthritis. Many of these patients are in critical career-building phases or are family breadwinners. Delaying treatment can not only impact their quality of life but also hinder their mobility, work performance, and social interactions, resulting in broader and more profound consequences. Therefore, Dr. Steve Cheung advises young patients not to "tough it out," as this could lead to more serious joint issues. "In fact, young patients generally have better physical conditions and recover faster. Early treatment can help them return to normal life more quickly, so patients should face the issue head-on."

Young Patients Should Seek Early Treatment to Expedite Recovery and Reduce Impact

Generally, treatment for knee joint issues includes exercise, medication, physical therapy, and knee replacement surgery. Dr. Steve Cheung explains that when joint problems arise, doctors typically first recommend medication and physical therapy to alleviate symptoms and discomfort. However, if the joint issues do not improve or if symptoms severely impact daily life, knee replacement surgery may need to be considered. "Knee replacement surgery involves installing artificial devices to replace the affected knee joint, aiming to reduce pain and enhance joint function."

Delaying Surgery Can Worsen Life Impact and Increase Revision Risks

Dr. Steve Cheung notes that some young patients may have concerns about the longevity of artificial joints, fearing they might need revision surgery in the future, which can lead to delays in undergoing total knee replacement. This mind-set may not be accurate. Research indicates that patients with knee arthritis experience significant negative impacts on their mental health, pain perception, joint discomfort, and daily activities before surgery, but see substantial improvements post-operation. Therefore, if a doctor assesses that surgery is necessary, it should be performed promptly to minimize the impact on quality of life.

However, in Hong Kong, orthopedic patients face long waiting times for surgical treatment, with the median wait for orthopedic surgeries reaching over four years. The longer knee arthritis patients delay treatment, the more their condition deteriorates. Improving treatment efficiency is a significant goal for the medical community. Recently, the widespread use of robotic-assisted surgery has emerged across various specialties. The robotic systems used in knee replacement surgeries integrate multiple technologies, including intelligent computing, 3D anatomical imaging, real-time tracking navigation, and multi-directional robotic arms. With the combination and assistance of these technologies, knee replacement surgeries are becoming increasingly precise and safe, leading to better recovery outcomes for patients and the potential to enhance treatment efficiency, allowing patients to return to normal life more quickly.



Robotic-Assisted Joint Replacement Surgery Offers Three Major Advantages to Help Patients Regain Normal Life

Dr. Steve Cheung highlights three key advantages of using robotic arms in knee replacement surgery. First, pre-operative imaging analysis allows for the creation of detailed surgical planning reports to assist doctors in strategizing the procedure. During surgery, the robotic system can precisely calculate bone resection points, reducing the risk of excessive or misaligned cuts. Additionally, the robotic arm can objectively assess soft tissue balance, providing more accuracy than relying solely on the surgeon's tactile experience. This allows for personalized adjustments of the artificial joint based on the patient's ligament flexibility. Research indicates that the accuracy of prosthetic placement improves from 80% to 95%, yielding excellent results.

With enhanced surgical precision, the need for extensive soft tissue incisions and related trauma is minimized. This contributes to a quicker recovery speed, enabling patients to get out of bed just hours after surgery, which can significantly aid in their return to normal life. For young patients who still need to focus on their careers, this reduces the impact on their daily lives. Furthermore, Dr. Steve Cheung notes that the risk of severe complications with robotic-assisted knee replacement surgery is also lower compared to traditional methods. Taking advantage of robotic surgery can effectively help patients reclaim their normal lives while alleviating the caregiving burden on family members and potentially improving family relationships.

Overall, the application of robotic arms in knee replacement surgery enhances surgical accuracy, accelerates patient recovery, shortens hospital stays, and reduces the risk of serious complications. Given the increasing demand for knee replacements in the future, it is expected that the adoption of robotic-assisted techniques will become a significant trend, benefiting more patients in need. Dr. Steve Cheung hopes that those suffering from knee pain will seize the opportunity for early diagnosis and treatment, allowing them to undergo surgery and restore their quality of life promptly.

Case Study

Patient Background

A man in his 50s, working in construction.

Medical History

The physical demands of his job resulted in bodily wear and tear, particularly affecting his knees. Initially, he experienced pain in his left leg, which later extended to his right leg. This condition persisted for about 5 to 6 years, during which he continued to work as usual. He struggled with prolonged standing and needed to take breaks to relieve the pain. Climbing stairs and walking on slopes caused significant discomfort in his legs. He relied on painkillers for relief, but the effectiveness was limited. He also tried hyaluronic acid injections, but his condition did not improve. Ultimately, he underwent robotic-assisted total knee replacement surgery on both knees.

Post-Surgery Recovery

Approximately three hours after the surgery, he was able to get out of bed.

Thoughts on Robotic Surgery

The doctor provided a detailed explanation of the robotic-assisted procedure,



which helped him trust the technology. He believes the results are excellent and that recovery is faster compared to traditional methods.

About the ROSA Robotic Surgery Center of Excellence

Hong Kong Adventist Hospital — Stubbs Road has collaborated with Zimmer Biomet to establish the first "ROSA Robotic Surgery Center of Excellence" in the Greater China region. This center aims to provide a training base for orthopedic surgeons from Greater China and the Asia-Pacific region in robotic-assisted joint replacement surgeries. It will facilitate relevant training and academic exchanges, with the goal of contributing to the popularization and advancement of robotic joint surgery.

About the Robotic Surgery Center

Hong Kong Adventist Hospital — Stubbs Road is at the forefront of medical innovation, dedicated to leveraging advanced medical technology to continuously improve patient care and treatment outcomes. In 2024, we established the Robotic Surgery Center, incorporating the latest robotic systems, including the first robotic surgical system in Hong Kong applicable to the entire spine, a new robotic system for total knee replacement, and the fourth generation of the Da Vinci robotic surgical system.

These systems are designed for broad applications across various specialties, including neurosurgery, orthopedics, urology, general surgery, and otolaryngology. They provide robotic-assisted surgical services for a range of conditions, such as robotic-assisted spinal surgeries, joint replacement surgeries, and complex tumor resections. In the future, we will actively explore the application of robotic technology in other specialized surgical fields, driving advanced techniques and promoting excellence in healthcare.

Media Enquiry

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