



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

Hong Kong Adventist Hospital – Stubbs Road

ANGIE IP

Tel: 3651 8972

Email: angie.ip@hkah.org.hk



新聞稿

膝關節受損非長者專利 年輕患者宜早治保生活
機械臂膝關節手術快、精、準
術後數小時下床 加快復原速度
機械臂手術發展中心促進交流 惠澤醫學界及社群

(香港——2024年11月19日) 膝關節隨著年紀增長，出現退化、勞損的風險將會越高，退化性膝關節炎在年長人士身上往往十分常見，不少長者也會受膝痛的困擾。不過，有醫生提醒，膝關節炎帶來的困擾並非長者專利，年輕人同樣可以飽受膝關節炎的煎熬，部份年輕患者的病情惡化速度更可能會較年長者快，嚴重影響工作，宜正視問題，及早接受治療。除了保守治療，關節置換手術亦是常見的治療方法，為更利於患者康復，減低手術對他們的影響，醫學界在關節置換手術上精益求精，如近年發展日益成熟的機械臂手術系統，精準度就越趨精準，大部份患者可在術後數小時後下床，復原速度加快不少。

有見及此，香港港安醫院—司徒拔道聯同捷邁邦美成立大中華區第一所機械臂手術發展中心，為大中華區及亞太區的骨科醫生提供訓練基地，進行機械臂關節置換手術的相關培訓及學術交流，期望區內日後有更多骨科中心能提供相關手術，令機械臂關節手術可以更為普及，為更多有需要患者提供更具質素的治療效果。

膝關節支撐著人體，不論走、跑、跳等動作均需膝關節的配合，才能順利而靈活地完成動作，但有很多情況均有機會導致膝關節受損，例如意外受傷、出現關節炎如骨關節炎、類風濕關節炎等。雖然年紀越大，膝關節因退化而形成勞損的機會越高，但香港港安醫院—司徒拔道骨科顧問醫生張文康醫生提醒，這並不代表沒有年輕患者。

研究：三成年輕患者飽受膝關節炎困擾

張醫生引述一項加拿大的研究指出，有三成年齡介乎 20 至 54 歲的人士表示患有膝關節炎，估計年輕患者受關節炎困擾的原因主要與運動受傷及肥胖人口增加有關。研究亦指出，年輕患者因而出現疼痛的比例較年長者高，有逾三成 20 至 44 歲患者表示出現嚴重及頻密的關節痛，較其他年齡層高出 3 至 9% 不等；同時也有近 35% 的 20 至 44 歲患者表示因此而影響睡眠，亦較其他年齡層高出 6 至 16% 不等，反映膝關節炎為年輕患者帶來的困擾有機會更大。

另有新加坡研究發現，年輕患者受關節炎或慢性關節問題困擾的比率亦顯著上升，2001 年有 7.4% 年齡介乎 18 至 65 歲的人士表示有關節炎問題，六年後，高達 23.7% 的 18 至 50 歲人士表示深受關節炎或慢性關節問題所困，可見關節問題在年輕人身上呈上升趨勢。事實上，新加坡的研究亦指出，需要接受全膝關節置換術的患者，有近 5% 為 50 歲以下人士，故年輕人切勿誤以為關節問題與自己無關。



張醫生補充，部份年輕個案的惡化速度有機會較年長患者快，出現嚴重膝關節炎的風險或會較高，而往往這批患者正值事業衝刺搏殺期，甚至是家庭支柱，如未有及時求醫拖延治療，不但影響生活質素，更會影響其行走能力、工作表現、家庭及社交，帶來的影響更為廣泛而深遠。因此，張醫生建議年輕患者切勿「死頂」，以免帶來更嚴重的關節問題，「事實上，年輕患者體格一般較佳，復原速度較快，及早接受治療有助更快恢復正常生活，故患者應正視問題。」

年輕患者宜及早治療 加快復常減影響

一般而言，針對膝關節治療主要是運動、藥物、物理治療及膝關節置換術，張醫生表示，出現關節問題時，醫生大多會先建議藥物及物理治療處理，以舒緩症狀及不適；但如關節問題仍未能有所改善，或者症狀嚴重影響日常生活，就有機會需要考慮安排膝關節置換術。「膝關節置換術其實是一個將人工器具安裝至患者體內，替代受疾病影響的膝關節的手術，從而達到減輕疼痛，以及增強膝關節活動機能的目的。」

延誤手術或加劇生活影響、增翻修風險

張醫生表示，有些年輕患者或對人工關節的壽命有一定疑慮，擔心日後或需再度翻修，而延遲接受全膝關節置換術，這個想法或許未必正確。有研究指出，患有膝關節炎的患者術前在心理健康、疼痛感、關節不適、日常生活等各方面均受嚴重影響，但術後均有明顯改善。因此，如患者經醫生評估後，有需要接受手術，應及早進行，以盡可能減低對生活質素的影響。

不過，本港骨科患者的手術治療等候時間長，最長骨科手術輪候時間中位數甚至長達 4 年以上，偏偏膝關節炎患者的治療時間越拖延，病情則越受累，如何加快治療效率，惠及患者成為醫學界的一大目標。近年廣泛應用於各專科的機械臂手術應運而生，常用於膝關節置換術的機械臂結合多項科技，包括電腦智能運算、3D 立體解剖影像、全時定位追蹤導航、多動向機器人手臂等，在多項技術的配搭與輔助之下，膝關節置換術越趨精準、安全、患者預後恢復更理想，有望提升治療效率，加快患者回復正常生活的時間。

機械臂輔助關節置換術達三大優勢 助患者重拾正常生活

張醫生指出，應用機械臂於膝關節置換術可達至三大優勢，首先在手術前透過分析影像，可以製作術前詳細規劃報告協助醫生計劃手術，此外手術中可以精準計算截骨位置，減低出現截骨過多或者偏離的情況，而機械臂系統還可以客觀評估軟組織平衡的情況，比單純依靠醫生觸感經驗更為準確，從而因應患者韌帶的柔韌度，將人工關節位置作個人化調整。有研究指，假體放置的準確性由 80% 提升至 95%，效果相當理想。

正因手術的精準度有所提升，手術時需要切開的軟組織及相關軟組織創傷亦較小，這些均有利加快患者的康復速度，可以達到術後數小時下床，協助他們加快



回復到正常生活的進度，對於仍需為工作打拼的年輕患者而言，就能進一步減低對他們生活的影響。不僅如此，張醫生亦指出，機械臂輔助膝關節置換術，出現嚴重併發症的風險同樣較傳統手術為低。把握機械臂手術帶來的優勢，能有效輔助患者盡快重拾正常生活，更可減輕家人的照顧壓力與負擔，甚至促進改善家庭關係。

綜觀機械臂應用於膝關節置換術可以提升手術的準確度、加快患者康復、縮短手術住院日數，減低嚴重併發症風險，加上預視未來對於膝關節置換的需求越來越大，相信在可行情況下，採取機械臂應用於膝關節置換術將成為未來大趨勢，有望惠及更多有需要的患者。張醫生期望，飽受膝關節痛困擾的患者均可把握早診早治的時機，及時接受手術，回復原有的生活質素。

個案分享

患者背景

50 多歲男士，任職地盤
地盤工作引致身體勞損，包括膝關節

患病經過

初時，左腳先出現疼痛，及後右腳亦出現疼痛，情況持續約 5 至 6 年，期間仍如常工作
不能長久站立，需休息坐下緩解痛楚
走樓梯及斜坡時腿部感到酸軟疼痛
須服用止痛藥舒緩痛楚，惟效果欠佳
曾嘗試透明質酸注射，仍未能改善病情
最後安排雙膝同時接受機械臂全膝關節置換術
術後約三小時已可下床

對機械臂手術的看法

醫生詳細解釋令他信任機械臂手術
認為成效好，復原更快

有關 ROSA 機械臂手術卓越發展中心

香港港安醫院—司徒拔道與捷邁邦美合作，成立大中華區首個「ROSA 機械臂手術卓越發展中心」。為大中華區及亞太地區的骨科醫生提供機械臂關節置換手術的訓練基地，進行相關的培訓及學術交流，期望為機械臂關節手術的普及化及發展作出貢獻。



有關機械臂外科中心

香港港安醫院—司徒拔道走在醫療創新的前沿，致力善用高端醫療科技儀器，不斷尋找提升病人護理和治療效果的方法。我們於 2024 年成立了 機械臂外科中心，引入了最新的機械臂系統，包括全港首部可應用於全脊椎的機械臂手術系統、全新的全膝關節置換術機械臂以及第四代達文西機械臂手術系統。這些系統能夠廣泛應用於神經外科、骨科、泌尿外科、外科和耳鼻喉科等領域，為各種疾病和病情提供適合的機械臂輔助手術服務，例如機械臂輔助脊椎手術、機械臂輔助關節置換手術和腫瘤切除等複雜手術。未來，我們還將積極探索其他專科手術上的應用，帶領先進技術並推動卓越醫療。

傳媒聯絡

香港港安醫院—司徒拔道

葉小姐 (Angie Ip)

電話：3651 8972

電郵：angie.ip@hkah.org.hk