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Message from the Chief Editor

Dear MAS Members and Friends,

It is my pleasure to welcome you to the **9th issue of Scope Insight**, with **Dr Robin, Associate Chief Editor, serving as the Editor of this issue.**

Every newsletter is more than a collection of articles—it is a reflection of our community, our shared experiences and the continued evolution of sports surgery. In this issue, Dr Robin has brought together a diverse selection of contributions spanning professional journeys, service development, surgical innovation, education and academic growth.

Our **Member Spotlight** features **MEJ GEN Dato' Dr Mohammad Amirrudin bin Hamdan (R)**, while other articles take us from the sporting field to the operating theatre, from rebuilding arthroscopy services to experiences as international faculty. We also explore the evolution of knee osteotomy, advances in shoulder surgery, innovative surgical techniques and lessons from a journey of academic productivity.

These stories remind us that progress in our specialty is not driven by techniques alone, but by **people who are willing to learn, share and inspire the next generation.**

Looking Ahead: MAS-ASSA ASM 2026

I warmly invite all MAS members to join us in **Penang, 26–28 November 2026**, for the **MAS-ASSA Annual Scientific Meeting**, themed **“Sports Surgery 2026: Bridging Idealism with Realism.”**

With prominent speakers from across **ASEAN** and invited international faculty, the meeting will be an excellent opportunity to exchange knowledge, challenge our thinking and build meaningful collaborations across the region.

Let us come together in Penang to learn from one another, share our experiences and shape the future of sports surgery together.

My sincere appreciation to **Dr Robin for editing this issue**, to all our contributors for generously sharing their knowledge and experiences, and to the **various industry partners whose support through newsletter advertisements has helped make this publication possible.** Your continued support is greatly valued by MAS.

I hope you enjoy this issue and find inspiration in the stories and ideas within its pages.

See you in Penang!

Warm regards,
Assoc. Prof. Dr Teo Seow Hui
Chief Editor
MAS Newsletter

Dr Robin Low Chin Aun
Pantai Hospital Cheras
Associate Chief Editor of the issue



Malaysian Arthroscopy Society

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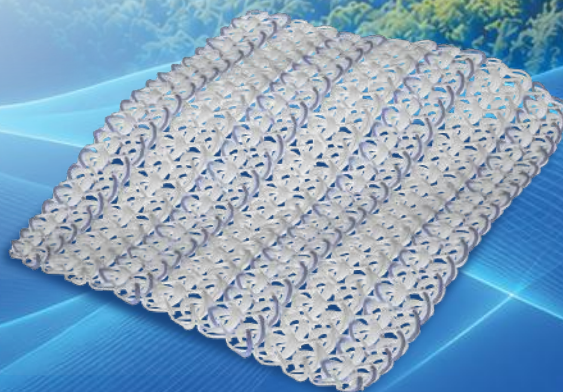
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Member Spotlight

A Conversation with **MEJ GEN DATO' DR MOHAMMAD AMIRRUDIN BIN HAMDAN (R)**

By Dr. Robin Low Chin Aun
Pantai Hospital Cheras



FUN FACT

Name:

Mej Gen Dato' Dr Mohammad Amirrudin bin Hamdan (R)

Current Place of Practice:

KPJ Ampang Puteri Specialist Hospital
ALTY Orthopaedic Hospital

Years in Practice:

33 years

Alma Mater:

- **Secondary:** Royal Military College (RMC), 1981–1985
- **Undergraduate:** Universiti Kebangsaan Malaysia (UKM), graduated 1993
- **Postgraduate:** Universiti Kebangsaan Malaysia (UKM), graduated 2000
- **Fellowship:** Fellowship in Arthroscopy, Australia, 2001

Past Leadership:

- Commanding Officer, Mizan Military Hospital
- Deputy Director General, Malaysian Armed Forces Health Service
- President, Malaysian Arthroscopy Society (MAS), 2017 & 2019

Favourite Procedure:

Arthroscopic and reconstructive surgery of the shoulder, knee and ankle

Go-to Arthroscopy Instrument:

"Anything!"

Three words that describe your operating style:

Thorough. Fast. Safe.

OT Music Preference:

Sentimental and love songs

Favourite Sports Teams:

Liverpool FC & New Zealand All Blacks

ORIGIN STORY & MENTORSHIP

What first drew you to arthroscopy?

“Love at first sight.”

Sometimes an entire career can be summed up in four words.

For Dato’ Amir, arthroscopy immediately captured his imagination — the ability to enter a joint through small portals, understand pathology from within and reconstruct what had been damaged was something that resonated with him from the beginning.

But there was also a very personal reason behind that fascination.

Was there a specific “aha” moment when you knew arthroscopy was your calling?

“When I tore my left ACL following a soccer match during medical school.”

Long before he would reconstruct the ligaments of countless patients himself, Dato’ Amir experienced a major sporting injury firsthand.

That torn ACL became more than an injury. It gave the future sports surgeon an appreciation of the patient’s side of the journey — from injury and uncertainty to treatment, rehabilitation and ultimately recovery.

And somewhere along that journey, an interest became a calling.

THE MENTORS WHO SHAPED THE SURGEON

Who were your most influential mentors, and what lessons from them still guide your hands in the OT today?

Two areas of surgery, and three internationally respected teachers, left a lasting impression.

Prof Dr Joe de Beer and **Prof Dr Kim Seung Ho** profoundly influenced his approach to **arthroscopic reconstructive surgery of the shoulder**.

From **Prof Sandro Giannini**, he developed an appreciation for the evolving science of **cartilage regeneration and implantation**.

Their influence extended beyond individual procedures.

They reinforced an important principle that has stayed with Dato’ Amir throughout his career: surgery continues to evolve, but advancement must always be built on sound surgical principles and scientific evidence.

THE CRAFT

“INNOVATION IS NECESSARY — BUT IT MUST BE SUPPORTED BY EVIDENCE.”

What is a common mistake you see among early arthroscopic surgeons, and how can they correct it?

Dato’ Amir’s answer is immediate.

Young surgeons can sometimes become **too easily influenced by every new surgical technique or implant that appears**.

His advice?

Be patient.

Innovation is essential for the continued advancement of surgical techniques and skills. But novelty alone does not make something better.



..... continue on page 6

**“Innovation needs to be supported by evidence
— from both basic science and clinical science.”**

He also identifies another weakness that is becoming increasingly important - **the erosion of fundamental clinical skills.**

Before the MRI, before the arthroscope and before choosing an implant comes the ability to properly assess the patient.

“Practise and master your clinical skills. Strengthen your basic knowledge. Don’t hesitate to read further and seek the opinion of a more senior surgeon.”

Technology can assist a surgeon.
It cannot replace one.

With more than three decades of experience, how do you continue to challenge yourself and improve your skills today?

The answer is characteristically straightforward:
“Keep practising, and always strive to remain a safe and competent surgeon.”

Experience does not remove the need for practice.

If anything, Dato’ Amir believes seniority brings an even greater responsibility to maintain standards.

For him, competence is not a destination reached after a certain number of years or operations. It is something that must continually be earned.

**“
Innovation
Is Necessary
— But It
Must Be
Supported
By Evidence
”**

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BEYOND THE OT

After decades of surgery and military service, how do you keep yourself fit and active today?

These days, Dato' Amir has traded some of his more vigorous sporting pursuits for something a little more sustainable.

Golf. Strength training. And keeping active.

“At this age, I love to play golf and regularly practise body strengthening and toning to keep myself fit and healthy.”

Sometimes it is about knowing how to keep yourself strong enough to continue doing what you love.

MESSAGE TO THE NEXT GENERATION

What is the one area that you believe young surgeons should start investing in right now?

For Dato' Amir, the answer begins not with equipment or technology, but with **teachers**.

“Learn from the experience and knowledge of your teachers.”

Surgical training is built on knowledge handed from one generation to the next, and young surgeons should take full advantage of the experience available around them. But there is one principle he repeatedly returns to:

Be a safe and competent surgeon.

And for anyone aspiring to become a sports surgeon, there is one technical foundation he believes deserves particular attention: **arthroscopic orientation**.

“To be a good sports surgeon, arthroscopic orientation is one of the most valuable skills to master.”

Before the complex reconstruction comes orientation.

Before innovation comes fundamentals.

Before speed comes control.

And before everything else comes safety.

After 33 years in medicine, Dato' Amir's story is a reminder that longevity in surgery is not built merely on the number of operations performed or the positions one has held.

It is built on **discipline, repetition, curiosity and respect for fundamentals**.

His career has travelled from the Royal Military College to medical school, from an ACL injury on the football field to arthroscopic surgery, and from the operating theatre to some of the highest leadership positions within the Malaysian Armed Forces Health Service.

Yet his message to the surgeon standing at the beginning of that journey remains remarkably simple:

Learn from your teachers.

Master your fundamentals.

Respect the evidence.

And always be safe and competent.

Perhaps after more than three decades in surgery, those are still the fundamentals that matter most.



Sports I Played Made Me A Better Surgeon

By Dr Jonas Fernandez, Hospital Putrajaya

As an orthopaedic surgeon, I spend much of my day treating damaged knees and shoulders. MRI scans, clinical examinations and surgical techniques are all fundamental to my work, but there is another part of my training that cannot be learnt from textbooks or operating theatres. It comes from years spent on the playing field.

Before I became a surgeon, I was an athlete.

Over the years, I have competed in taekwondo, played competitive hockey, completed a full marathon and, more recently, challenged myself by completing the REDLINE Fitness Challenge. Along the way, I have also experienced significant injuries myself, including fractures and an ACL reconstruction. These experiences have shaped not only how I approach sport, but more importantly, how I understand my patients.

There is a saying that doctors should never assume they know what a patient is feeling. While that remains true, having lived through the physical and emotional journey of injury certainly provides a perspective that goes beyond anatomy.

When an athlete tells me that their knee “gave way” during a sudden change of direction, I immediately picture the movement. In hockey, rapid pivoting, cutting and deceleration are repeated hundreds of times in a match. These are precisely the movements that place enormous

rotational forces across the knee, challenging the anterior cruciate ligament (ACL), menisci and surrounding stabilisers. I understand why a seemingly innocent twist while the foot remains planted can completely destabilise the knee.

Likewise, my years in taekwondo taught me how explosive rotational movements can generate tremendous stress across the lower limb. Every spinning kick, every landing after a jump and every rapid change in body position demands exceptional neuromuscular control. A fraction of a second is often all it takes for the knee to move in a direction it was never designed to go. Many ACL injuries occur without any direct contact, and having experienced those mechanisms personally allows me to appreciate exactly how devastating they can be.

The same principle applies to shoulder injuries.

Having trained across different sports, I appreciate that athletes rarely describe symptoms in textbook language. Instead, they say things like, “I can’t generate power anymore,” or “My shoulder feels loose when I reach overhead.” These descriptions often reveal more than imaging alone because they reflect functional limitations during real sporting activities.

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Endurance sports have taught me different lessons altogether.

Completing a marathon requires months of disciplined training, careful pacing and respect for recovery. It reinforces that performance is built gradually, not overnight. The same philosophy applies after surgery. Whether following ACL reconstruction or rotator cuff repair, rehabilitation cannot be rushed. Every phase serves a purpose, from restoring motion to rebuilding strength, proprioception and confidence before returning to sport.

More recently, completing the REDLINE Fitness Challenge reminded me that modern fitness places unique demands on the body. Functional fitness combines running, lifting, pushing, pulling and explosive movements with very little recovery between stations. It challenges not only cardiovascular fitness but also joint stability, coordination and muscular endurance. Experiencing these demands first-hand allows me to better appreciate the expectations and goals of today's recreational athletes, many of whom expect to return to high-intensity training rather than simply become pain-free.

Perhaps the greatest lesson that sport has taught me, however, has nothing to do with ligaments or muscles. It is empathy.

An injury is rarely just a torn tendon or ruptured ligament. For many athletes, it represents interrupted dreams, missed competitions and uncertainty about the future. The greatest challenge is often psychological rather than physical. Fear of re-injury frequently persists long after the tissues have healed.

Having stood on both sides of the consultation table, I recognise these concerns. I understand the frustration of delayed progress, the anxiety before returning to sport and the temptation to push rehabilitation too quickly. These experiences influence the conversations I have with my patients every day.

For me, every kilometre run, every hockey match played, every taekwondo bout contested and every fitness challenge completed has ultimately served one purpose, to become a better doctor for the athletes who place their trust in my care.



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Suppan et al. BMC Musculoskeletal Disorders (2026) 27:209
<https://doi.org/10.1186/s12891-026-09588-1>

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From The Shakes To The Scope:

Rebuilding Kajang's Arthroscopy Service

By Dr. Sashi Darshan Balakrishnan, KPJ Kajang

Formed in the Floodwaters

"Thrown into the river, and you learn how to swim."

That was exactly how it felt when I started my specialist gazettement at Hospital Kajang. As the oldest hospital in the state of Selangor, its historic corridors had seen decades of medical history, but modern arthroscopy surgery was not part of its current repertoire. No one was doing it. In a quiet corner of the operating theatre sat an old, box-like arthroscopy tower—covered in dust and completely unused.

Then came the spark. My Head of Department, Datin Dr Mashayati approached me with a direct question: Would you like to restart the arthroscopy services here in Kajang?

It was a daunting request, but I took it as a challenge. I set out to equip myself with the necessary skills, completely unaware of the incredible journey of mentorship and teamwork that was about to unfold.

The Patience of a Master

I was eager, but I was green. I knew I needed help, and support came from an unexpected place. Professor Nizlan from Universiti Putra Malaysia (UPM) generously agreed to travel all the way to Kajang just to guide me.

Looking back, those initial sessions must have been agonizing to watch. My hands were shaky, and my camera work was chaotic. I was making everyone in the operating theatre seasick with the unnecessary, jerky movements of the arthroscope.

Yet, Prof Nizlan never lost his temper. Crucially, he did not do what many senior surgeons do—he never grabbed the scope out of my hands. Instead, he stood by, patiently watching me struggle, stepping in only when he knew I absolutely needed the lifeline.

The spirit of collaboration grew even stronger when Mr Raymond and Dr Johan from UPM began dropping by to assist with cases. It was a beautiful, healthy partnership between the Ministry of Higher Education (MOE) and the Ministry of Health (MOH). I absorbed knowledge like a sponge from



The first knee arthroscopy in Kajang with Prof Nizlan

these elite surgeons, and month by month, my skills slowly began to improve.

Standing on My Own Two Feet

This intensive mentorship went on for months. I would diligently schedule a dedicated surgical list, and Prof Nizlan would faithfully show up to watch over my shoulder.

Then came the milestone. After months of watching me progress, Prof Nizlan turned to my HOD and gave the ultimate vote of confidence: *"He's okay. Let him do basic knee arthroscopy on his own."*

From that moment on, the training wheels were off. I scouted for cases, discussed the pathologies with Prof Nizlan beforehand, listed them up, and got them done.

It Takes a Village (Even at 3:00 AM)

Of course, rebuilding a service from scratch is never a solo achievement. Our surgical lists were frequently packed to the brim. Yet, the accommodating anesthetists at Hospital Kajang

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always found a way. If a patient came in with a locked knee, the team would coordinate seamlessly; sometimes, we would finally call the case up at 3:00 AM, right after the more life-threatening emergencies were cleared.

I owe the surgeon I am today to Prof Nizlan and the UPM team. But just as importantly, I owe a massive debt of gratitude to the scrub nurses, the floor staff, and the anesthetists in Hospital Kajang who patiently put up with my initial struggles and extended surgeries.

If you ask me what I miss most about my time in the Ministry of Health (KKM), it isn't just the surgeries. It is the beautiful spirit of teamwork. It is that profound sense of togetherness—knowing that when you are thrown into the river, an entire team will stand on the bank to make sure you learn how to swim.



With the entire Kajang team, UPM team and Mr Harjeet



With Prof Nizlan and Dr Johan

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Reflections of an International Faculty Member:

The Knee Arthroscopy Cadaveric Course

By Dr Chan Kok Yu, Gleneagles Hospital Penang

On 16 July 2026, the Smith & Nephew Academy in Singapore hosted an international-level Knee Arthroscopy Cadaveric Instructional Course. I had the privilege of serving as one of six international faculty members, alongside my Malaysian colleague Dr Moganadass Muniandy (Sunway Medical Centre, Penang). The academy is a state-of-the-art facility, boasting a large cadaveric laboratory that accommodates up to 12 stations.

An International Faculty

The faculty comprised six experienced arthroscopic and sports surgeons, who stepped away from their busy practices to teach and learn from one another. It was a priceless experience. I knew two members personally: Dr Moganadass Muniandy, my fellow Malaysian colleague, and Dr Sunil Guppur Kini from India. Dr Sunil and I completed our clinical fellowship together 16 years ago at Tan Tock Seng Hospital (TTSH), Singapore, under the same mentor. It was great to meet him again after so many years. The faculty was completed by Dr Nguyen Minh Duc (Vietnam), Adj Asst Prof Wang Ming (Singapore), and Dr Sheetal Gupta (India).

Delegates From Diverse Countries

We trained a diverse group of 23 skilled delegates: six from Vietnam, four from Indonesia, four from the Philippines, four from Malaysia, two from Singapore, and three from Sri Lanka. Because most of the participants already possessed sound arthroscopic foundations, we could focus on refining advanced techniques. Their enthusiasm made teaching a pleasure.

A Full Day of Advanced Training

The course balanced rigorous theory with hands-on application:

Morning Session: Following a warm welcome from the hosts, the morning featured lectures on meniscus repairs (ramp lesions, root repairs, bucket handle, and radial tears) by Drs Gupta, Moganadass, Nguyen, and Wang. Moving to the lab, each faculty member guided three to four delegates across two adjacent stations. I mentored two Malaysian delegates and one

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Image 1: Group photo of the faculty (seated) and participants. Seated from left to right: Drs Sunil Guppur Kini, Nguyen Minh Duc, Wang Ming, Sheetal Gupta, Chan Kok Yu, Moganadass Muniandy

Sri Lankan delegate through various meniscus repair procedures, followed by a Q&A session moderated by Dr Sunil.

Afternoon Session: I had the honour of delivering two lectures on rectus femoris tendon graft harvesting and PCL reconstruction. In the subsequent lab session, I taught my delegates anatomical ACL tunnel placement, posteromedial (PM) portal creation, and safe PCL reconstruction. The day concluded with an interactive Q&A on ACL reconstruction and Lateral Extra-articular Tenodesis (LET), moderated by Drs Gupta and Sunil.

Full Circle: Giving Back to the Profession

Teaching this course brought back fond memories. Sixteen years ago, I was a clinical fellow at TTSH learning the art of arthroscopy. I owe immense gratitude to my mentor, A/Prof Lee Keng Thiam (Head of Sports Surgery at TTSH), who shaped my career.

Now, as a senior sports surgeon focusing on knee and shoulder arthroscopy at Gleneagles Hospital Penang, I feel a deep obligation to mentor the next generation. I am grateful to Smith & Nephew for this invitation, and I look forward to supporting future educational opportunities in our field.



Image 2: Dr Chan Kok Yu teaching his delegates in the cadaveric lab



Image 3: Dr Moganadass Muniandy delivering his lecture



Image 4: Question and Answer session moderated by Dr Sunil Gurbur Kini

Hands-On, Up Close:

The 2nd MAS Shoulder Arthroscopy Cadaveric Workshop 2026

Advancing Shoulder Arthroscopy Through Hands-On Training and Mentorship

By Dr Mohd Firdaus Bin Abdullah, Hospital Kuala Lumpur

Building on the resounding success of its inaugural workshop in 2025, the **Malaysian Arthroscopy Society (MAS)** proudly returned with the **2nd MAS Shoulder Arthroscopy Cadaveric Workshop** - an electrifying two-day deep dive into cutting-edge arthroscopic surgical technique held on 8–9 August 2026 at the state-of-the-art Simulation and Skill Training Centre (SSTC) and the SACC Skills Lab, Hospital Kuala Lumpur (HKL). Now in its second edition, the workshop carried forward the hands-on educational philosophy established during the inaugural course, blending focused lectures, expert faculty demonstrations, and extensive cadaveric practice within a small-group learning environment.

The two-day programme welcomed **16 participants** from an orthopaedic background, attracting both local and international delegates, including **4 participants from Indonesia**. Practical training was conducted across eight cadaveric tables, each equipped with one shoulder specimen and two participants. Building on the legacy of its first edition, the workshop upheld its signature **2:1 participant-to-cadaver ratio**, ensuring maximum hands-on time for every surgeon. Furthermore, each table was staffed by two dedicated instructors from the esteemed faculty, delivering an excellent instructor-to-participant ratio and providing real-time, personalised guidance, troubleshooting, and expert tips throughout every procedure. This intimate learning setup was consistently highlighted by participants as the most valuable aspect of the course.

The first day began with an opening ceremony graced by the Director of Hospital Kuala Lumpur, **Kol. Bersekutu (PA) Prof. Dato' Dr. Harikrishna K.R. Nair**, who delivered an inspiring and warm welcome address. The Organising Chairman, **Dato Dr Shahrul Azua**, then greeted the participants with a briefing on the workshop's objectives, followed by remarks from current MAS President **Col. Dr. Kok Choong Seng**, setting an encouraging tone for the two days ahead.

From there, the scientific programme moved into shoulder instability with **Dr. Hisham Masdar** presenting the approach and suture techniques for arthroscopic Bankart repair. **Datuk Dr. Mohd Asri** followed with a discussion on management options for SLAP lesions. The learning then moved directly into the cadaveric laboratory, where

faculty demonstrations of anterior and posterior Bankart repair and SLAP repair were followed by dedicated participant hands-on sessions.

The afternoon programme shifted towards the subacromial space and rotator cuff. **Dr. Mohd Nizlan** discussed the approach to subacromial decompression, acromioplasty and distal clavicle excision, while **Assoc. Prof. Dr. Teo Seow Hui** addressed the treatment of partial-thickness rotator cuff tears. **Maj. Gen. Dato' Dr. Mohammad Amirrudin** subsequently shared techniques for supraspinatus tendon repair and the indications for interval slide release. Once again, the lectures transitioned directly into practical training, covering subacromial decompression, acromioplasty and distal clavicle excision, partial-thickness rotator cuff repair with an augmentation patch, as well as supraspinatus repair and interval slide release.

The second day expanded the programme into further aspects of rotator cuff, biceps and instability surgery. **Dr. Azmi Abdul Latiff** began with the approach to subscapularis tendon tears, followed by **Dr. Bazam Abdul Rani**, who presented various techniques of biceps tenodesis. Faculty demonstrations were again followed by participant hands-on practice, allowing the surgical principles discussed during the lectures to be applied directly at the cadaveric table. The latter part of the programme focused on more

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Group photo with the Director of Hospital Kuala Lumpur, Kol. Bersekutu (PA) Prof. Dato' Dr. Harikrishna K.R. Nair, together with faculty members and participants of the 2nd MAS Shoulder Arthroscopy Cadaveric Workshop 2026.

advanced reconstructive techniques. **Dr. Siti Hawa Binti Tahir** discussed 'how and when' to perform the remplissage procedure, while **Dr. Ng Wuey Min** shared his approach to managing massive rotator cuff tears using superior capsular reconstruction (SCR). Extended practical sessions on remplissage and SCR brought the two-day programme to a fitting conclusion, giving participants valuable time to practise these technically demanding procedures under close faculty supervision.

Participant feedback:

"It was an exciting workshop and one of the best cadaveric arthroscopy courses I have attended. As this was my first MAS workshop, the programme and cadaveric specimens exceeded my expectations. The instructors were very supportive and encouraged us to get as much hands-on experience as possible. I hope the workshop continues every year and that more of my colleagues from Indonesia will have the opportunity to join in the future."

Dr Bima Purwanto

*Dr. Soetomo General Academic Hospital,
Surabaya, Indonesia*

The return of the MAS Shoulder Arthroscopy Cadaveric Workshop for a second consecutive year represents another important milestone in the Society's commitment to practical surgical education. Building on the foundation established in 2025, the second edition retained one of its greatest strengths — **high-quality, small-group cadaveric training with close faculty mentorship**. With only two participants working on each cadaveric shoulder under the supervision of two table instructors, participants had ample opportunity to perform the procedures themselves, ask questions and receive immediate feedback. This interactive format also allowed faculty to share practical tips and surgical pearls that are often difficult to convey through conventional lectures alone.

More than simply learning a series of arthroscopic procedures, the workshop provided an environment for participants to refine their techniques, strengthen their surgical decision-making and build greater confidence in shoulder arthroscopy. It also created a valuable platform for participants and faculty to exchange experiences, discuss challenging cases and develop professional connections within the shoulder surgery community. The participation of international delegates further enriched this experience, encouraging cross-border learning and stronger professional ties across ASEAN. The success of this second edition further reinforces the value of cadaveric training in bridging the gap between theoretical knowledge and its application in the operating theatre. As we look ahead to the 3rd edition in 2027, MAS remains committed to building upon this momentum and

strengthening the workshop as an important platform for hands-on education, mentorship and collaboration in shoulder surgery across ASEAN.

The successful completion of the **2nd MAS Shoulder Arthroscopy Cadaveric Workshop** would not have been possible without the dedication and collaboration of the faculty, organising committee and supporting teams. On behalf of the organising committee from Hospital Kuala Lumpur, I would like to express my heartfelt gratitude to the Malaysian Arthroscopy Society (MAS) for the trust and opportunity to organise the 2nd MAS Shoulder Arthroscopy Cadaveric Workshop, and extend my warmest congratulations to MAS on reaching this important second milestone.

My sincere appreciation goes to our Organising Chairman, **Dato' Dr. Shahrulazua Ahmad**, Co-Organising Chairman, **Dr. Siti Hawa Binti Tahir**, and our advisors, **Col. Dr. Kok Choong Seng** and **Maj. Gen. Dato' Dr. Mohammad Amirrudin Hamdan**, for their invaluable guidance and support. Special thanks also go to our industry partners (Icon Medic, CONMED, AM Meditech, Smith & Nephew, Afrah Medical Supplies (AMS), and Arah Tenang) for their continued support of surgical education. Finally, my heartfelt appreciation goes to the organising committee, Arthroscopy & Sports Injury Unit (ASIU) HKL, SACC Skills Lab team, HKL staff, and everyone working behind the scenes. It was your dedication, teamwork and collective effort that made this second edition a great success!



Participants and faculty members of the 2nd MAS Shoulder Arthroscopy Cadaveric Workshop 2026



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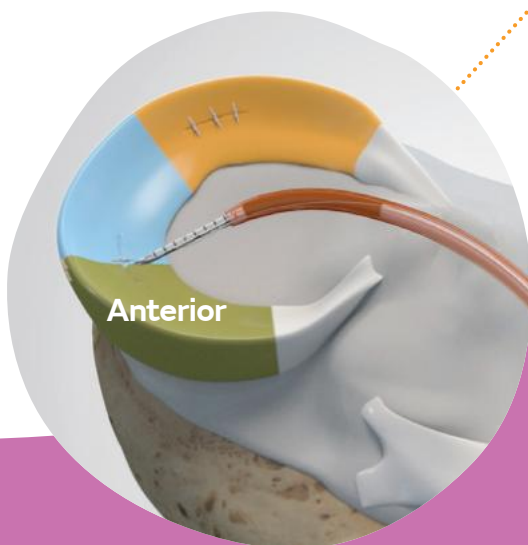
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Knee Osteotomy:

From Hippocrates to Modern Joint Preservation Surgery

By Dr Rajesh Rampal, Arthroscopy and Sports Surgeon Prince Court Medical Centre

Osteotomy around the knee remains one of the most powerful yet underutilised procedures in modern orthopaedic surgery. While arthroplasty has revolutionised the treatment of end-stage arthritis, osteotomy offers something unique: the opportunity to preserve the patient's native joint, restore biomechanics, and maintain high levels of activity. In the era of personalised medicine and joint preservation, osteotomy has experienced a renaissance.¹⁻²

A Brief History: From Hippocrates to the Present Day

The concept of correcting deformity by deliberately breaking bone dates back more than 2,000 years. Hippocrates (460-370 BC) described methods of correcting limb deformities using splints and gradual manipulation. Although true osteotomy techniques had not yet evolved, the principle of restoring alignment was already recognised.³

The first formal osteotomies were described in the 19th century, with Barton and Langenbeck performing corrective procedures for deformity.^{4,5} The modern era of knee osteotomy began in the 1950s and 1960s when Jackson and Coventry popularised proximal tibial osteotomy for medial

compartment osteoarthritis.^{6,7} Coventry's lateral closing wedge high tibial osteotomy (HTO) became the gold standard for several decades.^{1,7}

The development of modern fixation systems, locking plate technology, computer-assisted planning, patient-specific instrumentation, and improved understanding of lower limb alignment has transformed osteotomy surgery.^{1,8-10} Today, osteotomies are no longer reserved solely for arthritis but are increasingly used in sports medicine, ligament reconstruction, patellofemoral disorders, and complex deformity correction.^{1,11,12}

Modern Indications for Knee Osteotomy

The fundamental principle of osteotomy is to restore appropriate lower-limb alignment and optimise load distribution across the knee joint. By shifting the mechanical axis away from the affected compartment, osteotomy reduces pathological compartmental loading while preserving the native joint. The desired correction should be individualised according to the location and magnitude of the deformity, the pattern of cartilage damage, ligamentous stability and joint-line orientation.^{1, 11,13}

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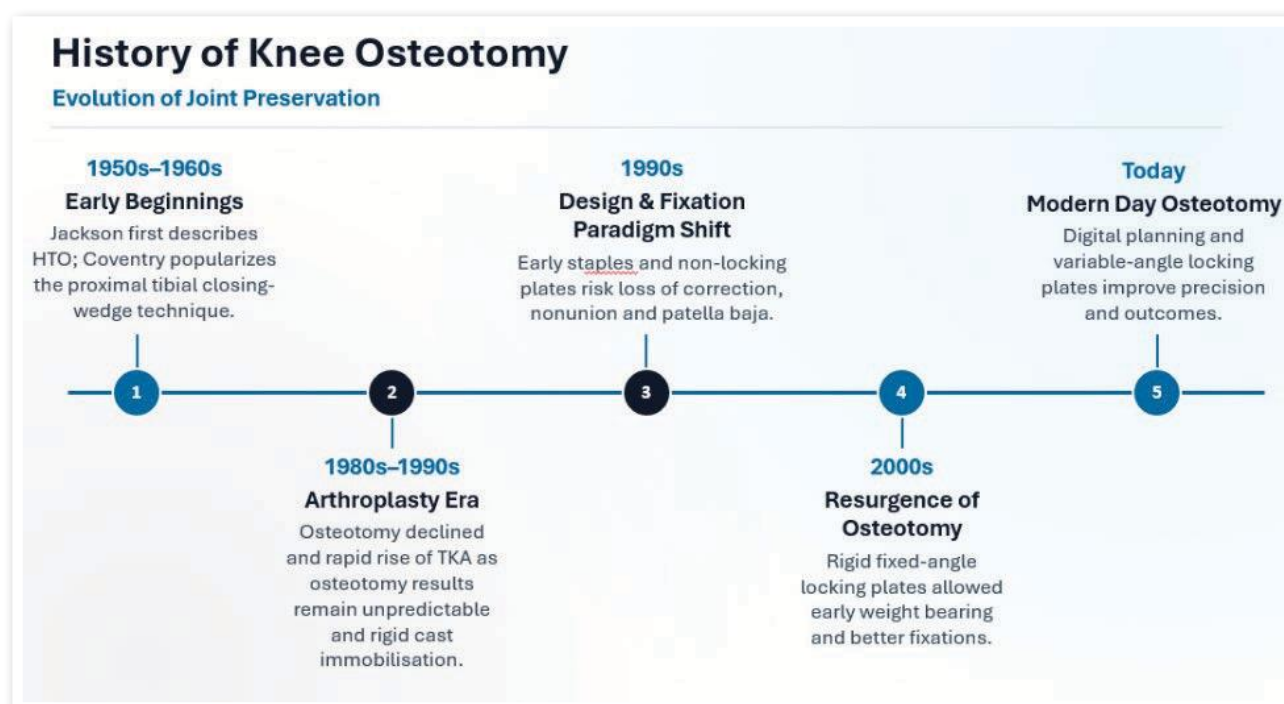


Figure 1: Historical evolution of osteotomy around the knee, illustrating major developments in surgical indications, fixation methods and digital planning from the 1950s to the present day.

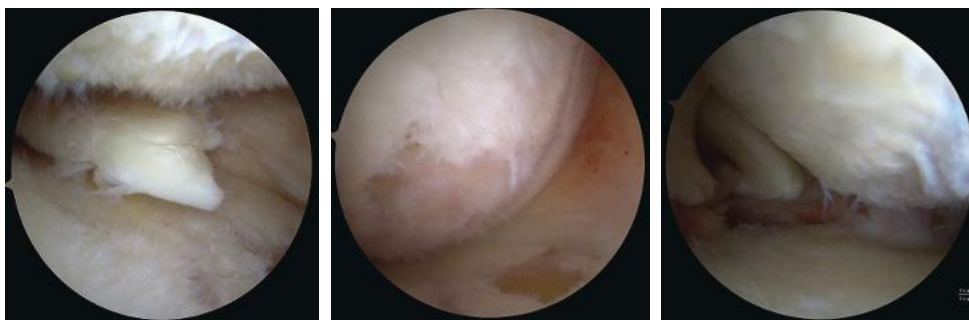


Figure 2: Examples of cases of medial compartment arthritis due to meniscus insufficiency

The classic indication is symptomatic unicompartmental osteoarthritis associated with varus or valgus malalignment in a young, active patient for whom joint preservation is preferable to arthroplasty. Traditional selection criteria include early-to-moderate unicompartmental osteoarthritis, a functional range of motion with more than 90° of flexion and less than 10° of fixed flexion deformity, preserved cartilage in the contralateral compartment, and the absence of clinically significant patellofemoral symptoms.^{1,14} However, contemporary evidence supports broader, individualised indications rather than rigid selection thresholds based on chronological age, body mass index or radiographic grade alone.^{11,13} Smoking increases the risk of delayed union and non-union; therefore, smoking cessation is strongly recommended, although smoking is not universally regarded as an absolute contraindication.^{13,15}

Within the knee reconstruction cascade, correction of alignment provides the mechanical foundation upon which subsequent ligament, meniscal and cartilage procedures depend. Osteotomy may be combined with anterior or posterior cruciate ligament reconstruction to address coronal malalignment, abnormal posterior tibial slope and ligamentous instability.^{1,16} Similarly, realignment may protect a deficient or reconstructed meniscus by unloading the affected compartment and may be performed alongside meniscal root repair or meniscal allograft transplantation.^{1,16,17} Cartilage-restoration procedures—including osteochondral autograft transplantation, osteochondral allograft transplantation, autologous chondrocyte implantation and scaffold-based techniques—may also be combined with osteotomy to create a more favourable biomechanical environment for cartilage repair.^{1,16}

Modern indications therefore extend beyond isolated unicompartmental osteoarthritis to include ligamentous instability, meniscal deficiency, focal chondral or osteochondral lesions, patellofemoral malalignment or instability, and complex coronal, sagittal or rotational deformities.^{1,16} Osteotomy should be considered an integral component of contemporary knee reconstruction, with alignment correction preceding or accompanying biological and soft-tissue reconstruction when malalignment contributes to the underlying pathology.

Multiplanar Correction

Successful osteotomy around the knee requires systematic assessment of deformity in the coronal, sagittal and axial planes. In the coronal plane, the site of correction should correspond to the anatomical origin of the deformity to restore alignment without producing excessive joint-line obliquity.^{13,18} A medial proximal tibial angle (MPTA) below 85° indicates a proximal tibial varus deformity and generally supports correction with a medial opening-wedge high tibial osteotomy. Conversely, valgus malalignment associated with a mechanical lateral distal femoral angle (mLDFA) below 85° indicates a distal femoral deformity, for which a medial closing-wedge distal femoral osteotomy may be appropriate.^{10,13,18} Multilevel deformities may require double-level osteotomy rather than correction through a single bone.^{10,13}

Sagittal-plane assessment is particularly important in anterior cruciate ligament reconstruction. An increased posterior tibial slope increases anterior tibial translation and loading of both the native and reconstructed ACL.^{19,20} Slope-reducing tibial osteotomy should therefore be considered in revision ACL reconstruction when the posterior tibial slope is at least 12°, particularly in patients with recurrent graft failure or excessive anterior tibial translation.^{19,20} In primary ACL reconstruction, the indication is less clearly defined and should be individualised; a markedly increased posterior tibial slope, commonly 16° or greater, may represent a relative indication when accompanied by additional high-risk features.^{19,21}

Axial-plane deformity should also be evaluated in patients with recurrent patellofemoral instability, particularly after failed medial patellofemoral ligament reconstruction. Excessive femoral anteversion and external tibial torsion alter the direction of the extensor mechanism and may contribute to persistent lateral patellar instability.^{22,23} Femoral derotational osteotomy may be considered when femoral anteversion exceeds approximately 30°–35°, while tibial derotational osteotomy may be appropriate in symptomatic patients with external tibial torsion exceeding approximately 40°–45°.^{22,23} These thresholds are not absolute and should be interpreted alongside symptoms, clinical

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examination, imaging methodology and other anatomical risk factors for patellofemoral instability.

HTO Versus UKA: Which Procedure for Medial Compartment OA?

Accurate osteotomy planning begins with systematic deformity analysis to identify the anatomical origin and plane of malalignment. Full-length weight-bearing radiographs allow assessment of the mechanical axes, joint orientation angles and joint-line convergence in the coronal plane, while lateral imaging defines sagittal-plane deformity. Comparing these measurements with established physiological ranges determines whether the deformity originates from the femur, tibia or both, thereby guiding the level and type of correction while avoiding pathological joint-line obliquity.²⁴

One of the most common dilemmas is deciding between knee preservation osteotomy surgery and unicompartmental knee arthroplasty (UKA). Both procedures address isolated medial compartment disease but do so through entirely different mechanisms.

The Analyzer for Knee Unicompartmental Medial Arthritis (AKUMA) framework provides a radiographic decision-making algorithm for younger patients with varus alignment and early-stage medial compartment osteoarthritis. It quantifies the relative contributions of intra-articular deformity (IAD) and extra-articular deformity (EAD) to global malalignment. An IAD contribution greater than 60% favours unicompartmental knee arthroplasty, whereas an EAD contribution greater than 60% supports osteotomy, with the anatomical distribution of the deformity guiding selection of high tibial, distal femoral or double-level osteotomy. When both components are below 60%, the patient lies

within a “grey zone” in which neither procedure has demonstrated clear superiority, and treatment should be individualised according to age, activity level, cartilage and meniscal status, sporting expectations and patient preference.^{13,25}

In simple terms, osteotomy is preferred when extra-articular malalignment is the principal pathology, with the correction performed at the site of deformity—the tibia, femur, or both. Conversely, unicompartmental knee arthroplasty is generally preferred when intra-articular cartilage wear is the predominant pathology. This practical distinction provides a useful framework for everyday clinical decision-making.

Principles of Successful High Tibial Osteotomy

Successful high tibial osteotomy begins with careful patient selection and meticulous preoperative planning. A favourable candidate is physiologically young, active, medically fit and well motivated, with preserved lateral-compartment cartilage, good knee motion and less than 10° of fixed flexion deformity. Although a BMI below 30 kg/m² and non-smoking status have traditionally been preferred, contemporary guidance recommends individualised assessment rather than exclusion based on body weight alone; smoking cessation remains strongly advised because of the increased risk of delayed union and non-union.^{2,10,13}

Preoperative evaluation should include full-length standing alignment radiographs to determine mechanical-axis deviation and measure the medial proximal tibial angle, mechanical lateral distal femoral angle and joint-line convergence angle. A true lateral radiograph is also required to evaluate posterior tibial slope. These measurements

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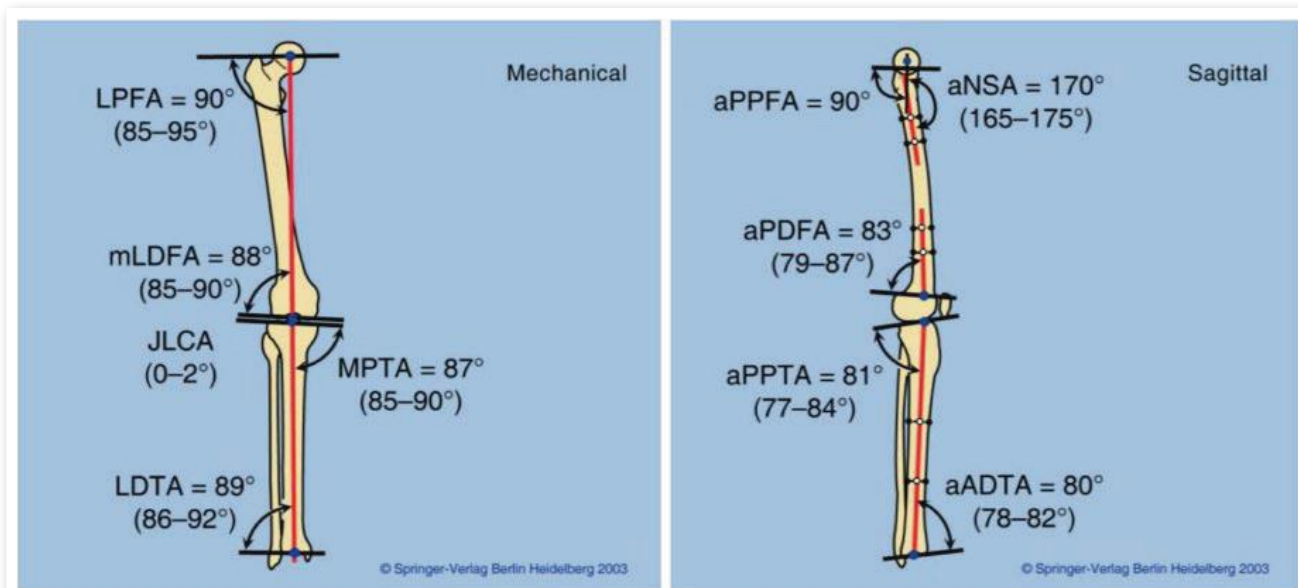


Figure 3: Systemic deformity analysis (Source: Paley D. *Principles of Deformity Correction*. Springer-Verlag; 2002)

AKUMA Framework

- High EAD points (>60%) indicates for HTO/Double Level.
- High IAD points (>60%) indicates for UKA.
- IAD & EAD <60% = Grey Zone

IAD: Intra-Articular Deformity EAD: Extra-Articular Deformity
 GD: Global Deformity KO: Knee Osteotomy
 JLCA: Joint-Line Congruence Angle MPTA: Medial Proximal Tibial Angle
 LDFA: Lateral Distal Femoral Angle LDFA: Lateral Distal Tibial Angle
 MAD: Mechanical Axis Deviation ICD: Intercondylar Distance

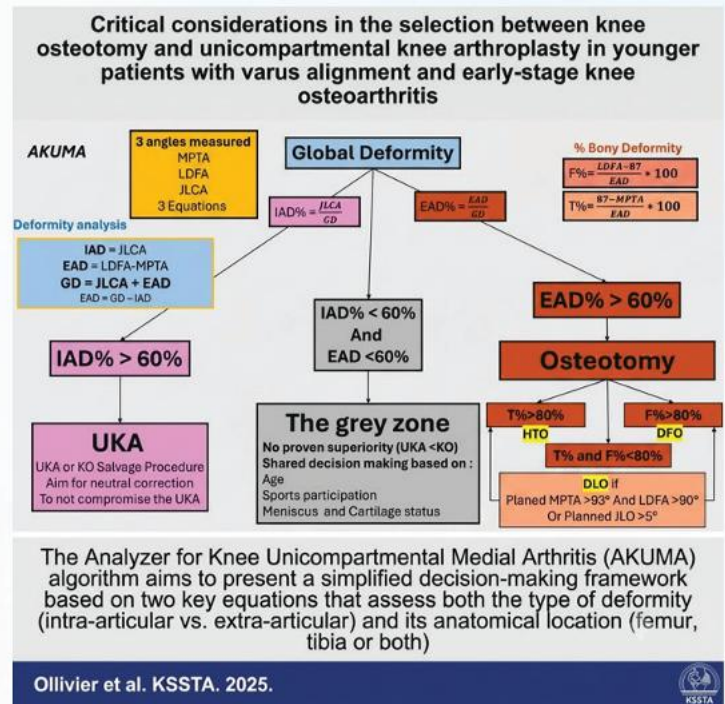


Figure 4: The image illustrates a diagrammatic representation of the AKUMA (Analyzer for Knee Unicompartmental Medial Arthritis) decision-making framework for selecting between knee osteotomy and unicompartmental knee arthroplasty in younger patients with varus alignment and early-stage knee osteoarthritis.

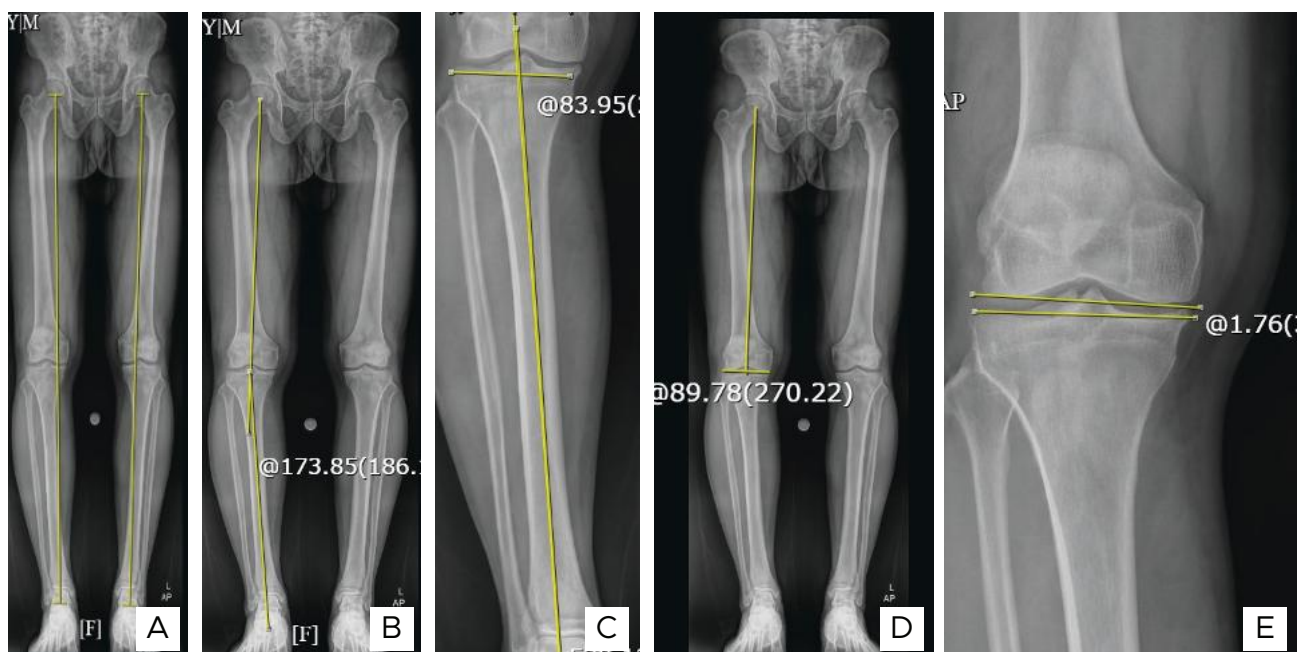


Figure 5: Deformity analysis of a young patient presenting with right knee chronic ACL laxity with medial compartment pain using long limb axis radiograph.

- Mikulicz line: the functional weight bearing and mechanical axis of the lower limb running from the centre of the hip to the centre of the ankle
- The Hip Knee Angle (HKA): the angle formed between the mechanical axis of the femur and the mechanical axis of the tibia.
- Medial Proximal Tibial Angle (MPTA): medial angle between the mechanical axis of the tibia and the articular surface of the tibial plateau.
- mechanical Lateral Distal Femoral Angle (mLDFA): measured by the lateral angle between the mechanical axis of the femur and the articular surface of the femoral condyles.
- Joint Line Congruence Angle (JLCA): the angle measured between the tangent line of the distal femoral condyles and the subchondral plate of the proximal tibial plateau on a weight-bearing long-leg X-ray.

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identify the origin and plane of deformity, guide the level and magnitude of correction, and reduce the risk of inappropriate joint-line obliquity or unintended sagittal-plane changes.^{2,10,13}

The joint-line convergence angle (JLCA) is measured on a weight-bearing, full-length anteroposterior radiograph between the tangent to the distal femoral condyles and the subchondral plate of the proximal tibial plateau. It represents the intra-articular component of coronal-plane deformity, reflecting the combined effects of cartilage and meniscal loss together with periarticular soft-tissue laxity.^{26,27} The JLCA is typically 0°–2° in a healthy knee and generally increases with the severity of medial-compartment osteoarthritis.^{26,27} It is an important consideration during high tibial osteotomy planning because an elevated JLCA may decrease after bony realignment; failure to account for this soft-tissue and intra-articular correction can result in unintended postoperative valgus overcorrection.^{26,27}

Precise high tibial osteotomy (HTO) relies on comprehensive preoperative deformity analysis, followed by meticulous digital planning via the Miniacci method. The objective is to shift the postoperative weight-bearing line (WBL) to a target coordinate between 50% and 65% of the total medial-to-lateral tibial plateau width, dictated by the specific underlying pathology. Intraoperatively, establishing an accurate hinge point and maintaining a robust lateral bone hinge—stabilized by a hinge-wire guide—is critical to mitigate intraoperative fracture risk. Furthermore, strict isolation and protection of adjacent neurovascular bundles are mandatory, alongside precise management of the posterior tibial slope, which may be maintained or deliberately modified based on sagittal alignment goals. Finally, the execution of biplanar osteotomy cuts is utilized to maximize cancellous bone surface area, optimizing the biological environment for osseous healing while providing superior intrinsic resistance against rotational displacement.

In comprehensive preoperative and postoperative planning for around-the-knee osteotomies—such as high tibial osteotomy (HTO) or distal femoral osteotomy (DFO)—preserving a physiological joint line orientation (JLO) is critical for normal lower-limb biomechanics.¹² In an optimally aligned limb during functional stance or gait, the joint line naturally horizontalizes relative to the ground to ensure forces travel perpendicular to the joint cartilage rather than introducing pathologic shear stresses.^{18,28} Modifying large skeletal deformities entirely through a single-level tibial correction carries a substantial risk of introducing excessive JLO (>4° to 5°) and overcorrecting the osseous anatomy beyond normal anatomical parameters.¹² International guidelines, including the European Society of Sports Traumatology,

Knee Surgery, and/or Arthroscopy (ESSKA) consensus, emphasize that the corrected medial proximal tibial angle (MPTA) should be maintained below 94° to prevent extreme joint line obliquity and structural overcorrection.¹² When a deformity is severe and an isolated tibial correction would cause the simulated post-operative MPTA to exceed 94° or the JLO to bypass 5°, transitioning the surgical strategy to a double-level osteotomy (DLO) is indicated to distribute the required geometric shift more evenly between the femur and the tibia.¹²

Modern angular-stable locking plates provide reliable fixation following medial opening-wedge high tibial osteotomy (MOWHTO), maintaining correction while facilitating early mobilisation. Early range-of-motion exercises are encouraged, while progression of weight-bearing should be individualised according to correction magnitude, bone quality, fixation stability and lateral hinge integrity. Evidence suggests that early weight-bearing can be safely considered in appropriately selected patients with stable locking plate fixation.^{29,30}

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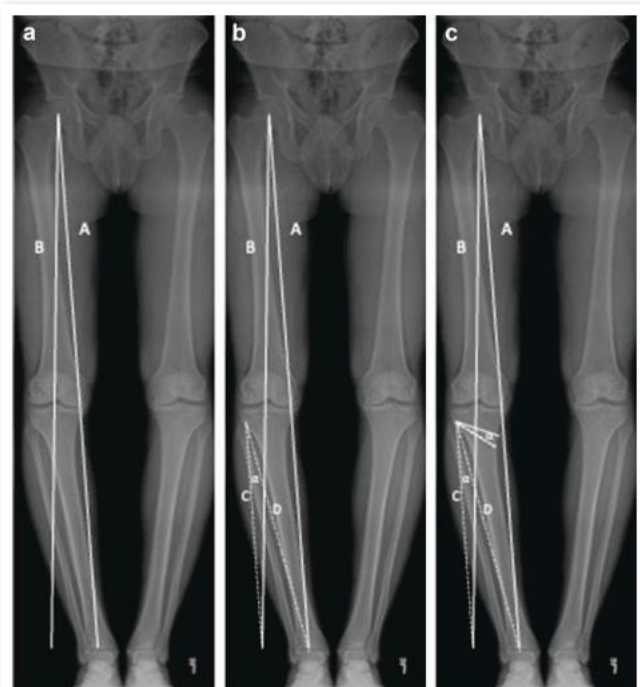


Figure 6: Planning for a medial opening wedge high tibial osteotomy (Image a) The Mikulicz line (A) defined as the line starting from the centre of the femoral head to the centre of the talus is drawn, and a line from the centre of the femoral head through the desired weight-bearing point on the tibia (B) is drawn. (Image b) The hinge point is defined in the lateral proximal tibia at the level of the fibular head. A line is drawn (C) from the hinge point to the end of Line B at the level of the ankle and a similar line is drawn (D) from the hinge point to the current centre of the talus. The angle formed between lines C and D is the desired angle of correction (α). (Image c) This angle α forms the correction angle for the medial opening wedge osteotomy.¹²

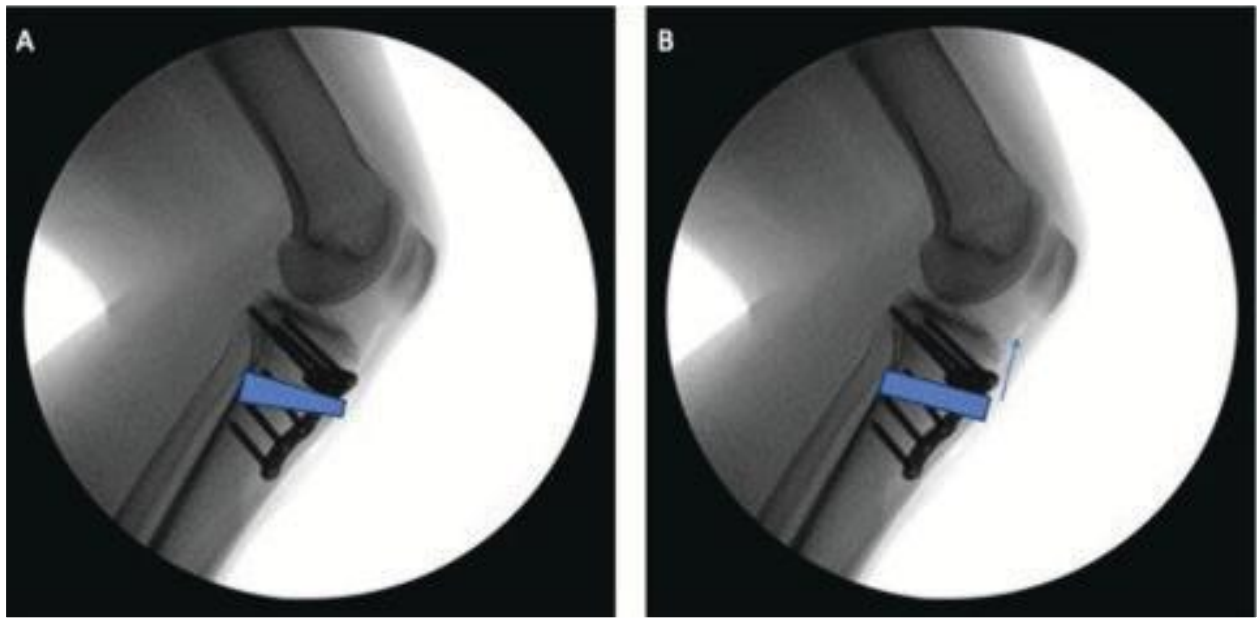


Figure 7: Given the triangular shape of the tibia, when performing an opening wedge osteotomy, differential opening of the anterior and posterior aspects of the tibia can change the posterior tibial slope. If opening the osteotomy in the shape of a trapezoid (A), the posterior slope will decrease or be preserved. By contrast, if the osteotomy gap becomes a rectangle (B), the posterior tibial slope of the tibia will increase.¹²

HTO is generally safe, although recognised complications include lateral hinge fracture, infection, delayed or non-union, loss of correction, neurovascular injury, venous thromboembolism and implant-related symptoms.³¹ Lateral hinge fracture is among the most common technical complications of MOWHTO and may compromise stability and increase the risk of delayed union or loss of correction. Later complications include symptomatic hardware, alterations in patellar

height or tibial slope, progression of osteoarthritis and eventual conversion to knee arthroplasty.³¹

HTO provides durable joint preservation in appropriately selected patients with varus malalignment and medial-compartment osteoarthritis. Contemporary studies demonstrate that a substantial proportion of patients remain

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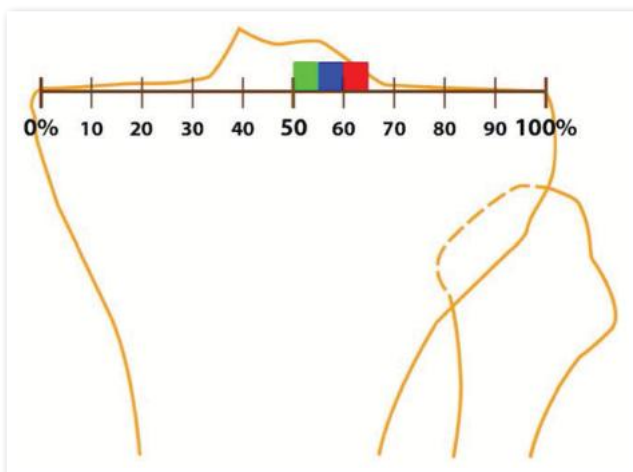


Figure 8: Three target zones were proposed for valgus osteotomy by Feucht et al. Indications for osteotomy (such as medial overload, cartilage repair, medial meniscal transplantation, ligamentous insufficiency) without any osteoarthritis (OA) in the green zone 50%–55%, mild OA to the blue zone 55%–60% and moderate to severe OA is targeted at the red zone 60%–65%.¹³



Figure 9: The angle formed between a horizontal reference line parallel to the ground and the tangent line of the knees articular surface specifically along the proximal tibial plateau.¹²

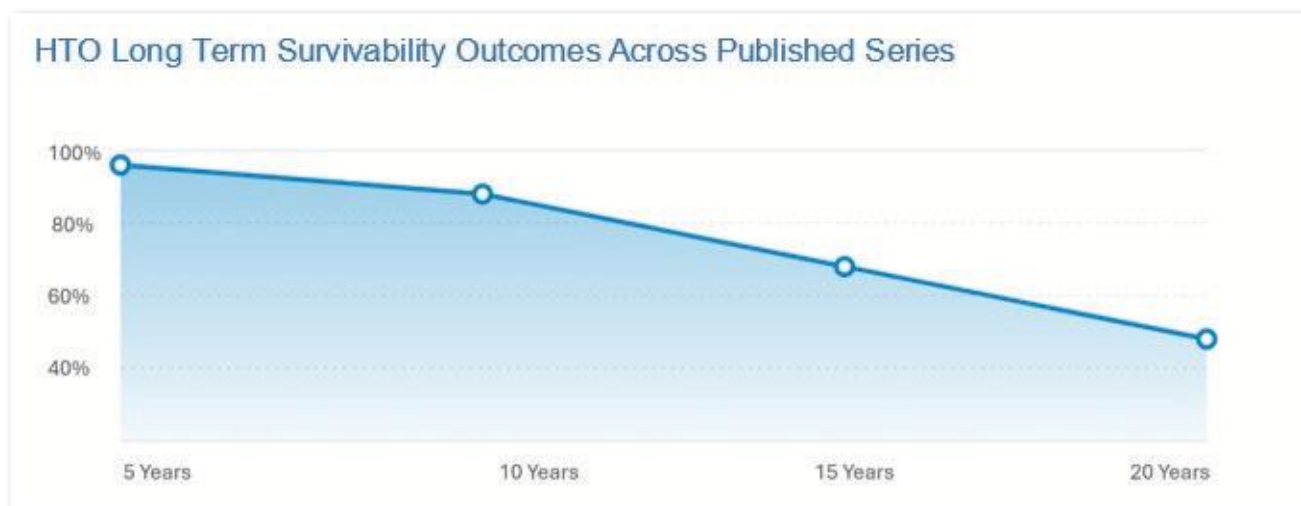


Figure 10: Modern medial opening-wedge HTO (MOWHTO) with rigid angle-stable fixation provides durable joint preservation, with reported survivorship of ~90% at 10 years and ~75–80% at 15 years. Outcomes are optimized by appropriate patient selection and precise alignment correction, typically targeting the weight-bearing line at ~55–60% of the tibial plateau

free from knee arthroplasty beyond 10–15 years following MOWHTO.¹² Favourable long-term outcomes are associated with appropriate patient selection, less advanced osteoarthritis, preserved lateral-compartment cartilage, lower BMI and accurate correction. Importantly, HTO allows many younger, active patients to maintain high levels of physical activity. A systematic review reported an 87.2% return-to-sport rate, with 78.6% returning at an equal or higher level than before surgery.^[6] Thus, when appropriately indicated and accurately performed, HTO can preserve the native knee, maintain activity and delay the need for arthroplasty.³²

Conclusion

Knee osteotomy has evolved from a traditional deformity-correction procedure into a sophisticated component of modern joint-preservation surgery, with applications extending across osteoarthritis, sports medicine, ligament reconstruction, cartilage preservation and patellofemoral disorders.

High tibial osteotomy remains the cornerstone of knee realignment surgery. With appropriate patient selection, accurate planning and precise execution, HTO can relieve pain, restore function, preserve activity and delay arthroplasty. As joint-preservation strategies continue to advance, osteotomy will remain an important tool in the management of the young and active knee.

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MECTAGRIP TECHNOLOGY



Proximal fixation in standard and short stems is achieved through Medacta's proprietary MectaGrip technology, in conjunction with hydroxyapatite. This results in a robust metaphyseal fixation.

MectaGrip



HUMERAL DIAPHYSIS

The calcar design and the size range have been optimized via the MyBody platform, the Medacta extensive database of CTs and MRIs, to provide excellent initial stability.

WIDE RANGE OF OPTIONS

4 length options to match each patient's anatomy and pathology: **short, standard, long and extra-long.**

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11 diameter sizes are available for each stem length, from 6 to 16 in 1mm increments for a true press-fit. As stems increase in diameter, they also increase in length, thus resulting in anatomical options for even the most challenging anatomies.

ENHANCED ANATOMIC DESIGN

The stem geometry is meant to provide rotational stability with a **self-centering and self-orienting shape.**

STEMLESS METAPHYSIS

WIDE SIZE PORTFOLIO

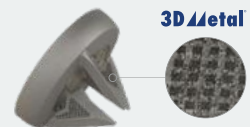
6 sizes to adapt to different humerus anatomies and to facilitate anatomical reconstruction.

ENHANCED DESIGN

The design of the fins has been optimized to reduce the risk of interference with the bicipital groove and to maximize the implant primary fixation.

MAXIMIZED INITIAL STABILITY

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TUBerosITY RESTORATION

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DOUBLE ECCENTER & HUMERAL HEAD DOUBLE ECCENTRICITY

Adjustable offset of up to 5mm for every size of the humeral head. The double eccentricity guarantees a perfect ability to match and reproduce the native head-stem offset.

WIDE SIZE RANGE

10 humeral head sizes are available to restore the correct humeral head anatomy.

SENSITIN OPTION

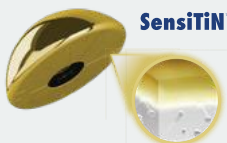
Medacta Shoulder System humeral heads are available in the SensiTIN option.

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SensiTIN coating allows to reduce metal ion release by up to 90%.^[1]

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GLENOSPHERE

WIDE RANGE OF OPTIONS

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SENSITIN OPTION

Medacta Shoulder System glenospheres are available in the SensiTIN option.

REVERSE HUMERAL METAPHYSIS & LINER SEMI-INLAY DESIGN

The **semi-inlay design** helps preventing excessive humeral distalization and lateralization and reducing the risk of scapular notching.

TUBerosITY RESTORATION

Medial and lateral **suture holes** allow for tuberosity reattachment.

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The Cauliflower Technique:

A Broad-Based Proximal Long Head of the Biceps Tenotomy to Promote Biological Autotenodesis

By Dr Muhammad Wafiuddin Ahmad, International Islamic University Malaysia

Abstract

Pathology of the long head of the biceps tendon (LHBT) is a common source of anterior shoulder pain and frequently coexists with degenerative rotator cuff disease. Arthroscopic biceps tenotomy remains an established treatment for elderly and low-demand patients because it is technically simple, reproducible, implant-free, and associated with shorter operative time. However, distal migration of the released tendon may result in Popeye deformity and biceps cramping. The Cauliflower Technique is a broad-based proximal LHBT tenotomy performed immediately adjacent to the superior labral attachment using radiofrequency ablation. Unlike conventional transverse tenotomy, the broadest possible proximal tendon stump is intentionally preserved. The technique was developed by Mejar Gen Dato' Dr Amiruddin Hamdan (R) as a modification intended to enhance mechanical engagement of the released tendon within the proximal bicipital groove and promote spontaneous biological autotenodesis without formal fixation. Further biomechanical and prospective clinical studies are required to validate the proposed mechanism.

Keywords

Long head of biceps tendon; biceps tenotomy; biological autotenodesis; Popeye deformity; shoulder arthroscopy.

Introduction

Pathology of the long head of the biceps tendon (LHBT) is a recognised source of anterior shoulder pain and is frequently associated with rotator cuff and other degenerative shoulder pathology^[1,2]. After failure of conservative management, surgical treatment commonly consists of biceps tenotomy or tenodesis. Tenotomy remains particularly attractive in elderly and low-demand patients because it is technically straightforward, avoids implants, requires less operative time, and generally provides reliable pain relief and functional improvement^[2-7].

Comparative studies and systematic reviews demonstrate that both procedures provide satisfactory clinical outcomes, although tenodesis generally has a lower incidence of cosmetic Popeye deformity^[3-7]. Tenotomy therefore remains an appropriate option when cosmetic concerns and high functional demands are less important. The principal limitation is distal migration of the

released tendon, which can produce a visible Popeye deformity and, in some patients, biceps cramping or fatigue discomfort^[4-7].

Several modifications have been developed to reduce distal migration while retaining some of the simplicity of tenotomy. The Anchor Shape Technique described by Narvani et al. creates an oblique partial incision followed by complete tenotomy, allowing the remaining tendon to open into an anchor-shaped configuration at the entrance of the bicipital groove^[8]. The Y-shaped tenotomy concept uses the funnel-shaped morphology of the LHBT to facilitate retention of the tendon within the groove without additional hardware^[9]. Suture-assisted techniques represent another strategy. The Loop 'N' Tack technique secures a tenotomized proximal biceps tendon with a suture to a knotless anchor in the proximal bicipital groove, allowing the tendon to scar in the groove^[10]. Other transtendinous looped techniques similarly use suture-anchor fixation to reduce Popeye deformity^[11].

The Cauliflower Technique, developed by Mejar Gen Dato' Dr Amiruddin Hamdan (R), represents a further modification of this concept. Instead of creating an anchor-shaped, Y-shaped, or suture-fixed construct, the technique preserves the broad, irregular native proximal tendon stump during radiofrequency-assisted tenotomy. The resulting stump resembles the head of a cauliflower. The proposed mechanism is that the increased tendon bulk and irregular contour improve mechanical engagement at the entrance of the proximal bicipital groove, thereby facilitating spontaneous biological autotenodesis.

Surgical Indications

- Age ≥ 60 years.
- Elderly or low-demand patient.
- Persistent anterior shoulder pain despite appropriate conservative management.
- Positive Speed's test and/or bicipital groove tenderness.
- MRI demonstrating LHBT tendinosis, partial tearing, or intratendinous oedema.
- Arthroscopic evidence of severe synovitis, degenerative fraying, partial tearing, or poor tendon quality.

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Surgical Technique

Patient Positioning and Diagnostic Arthroscopy
The patient is positioned in the lateral decubitus position under general anaesthesia with the operative arm supported in balanced traction. Standard posterior viewing and anterior working portals are established. A systematic diagnostic arthroscopy is performed to assess the glenohumeral joint, labrum, articular cartilage, rotator cuff, and LHBT. The LHBT is evaluated for synovitis, fraying, partial tearing, instability, and overall tendon quality.

Broad-Based Proximal Tenotomy

A radiofrequency ablation probe is introduced through the anterior working portal. Unlike a conventional transverse tenotomy, the release is performed immediately adjacent to the superior labral attachment while intentionally preserving the broadest possible proximal tendon stump. Excessive resection of the tendon is avoided. The natural irregularity and bulk of the degenerative tendon are preserved rather than reduced to a narrow stump.

Final Appearance and Proposed Mechanism

After complete release, the tendon is allowed to retract naturally. No anchor, suture, or other fixation device is applied. The broad irregular proximal tendon stump remains at the entrance of the proximal bicipital groove. Its configuration resembles a cauliflower, which provides the name for the technique. The proposed mechanism is increased mechanical engagement of the broad stump within the groove, followed by biological healing and fibrosis that may stabilise the tendon and reduce distal migration.

Postoperative Rehabilitation

The sling is used for comfort. Passive and active-assisted shoulder range of motion are commenced according to the associated shoulder procedure. Patients are instructed to avoid lifting or carrying heavy objects with the operated arm, resisted elbow flexion, and resisted forearm supination for six weeks. Progressive strengthening is commenced after six weeks according to clinical recovery and any concomitant procedures. Pearls and Pitfalls.

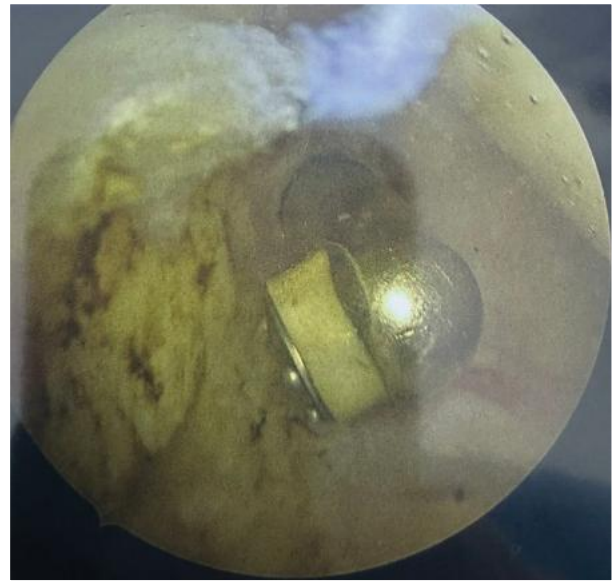


Figure 1: Arthroscopic appearance of the long head of the biceps tendon demonstrating severe degeneration, fraying, and synovitis. The radiofrequency probe is positioned adjacent to the superior labral attachment before the broad-based tenotomy.

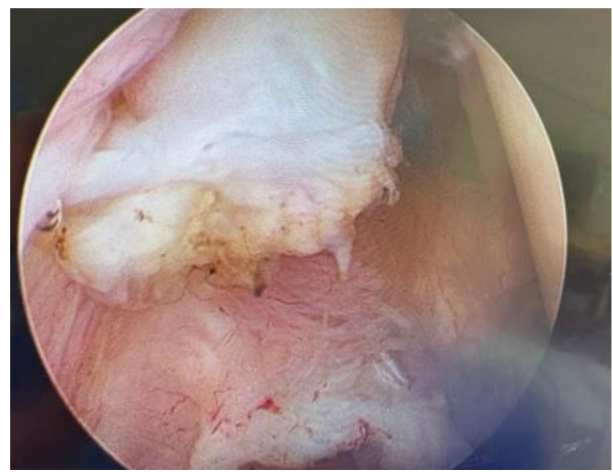


Figure 2: Radiofrequency-assisted broad-based proximal tenotomy performed immediately adjacent to the superior labral attachment while preserving a broad proximal tendon stump.

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Pearls	Pitfalls
Release immediately adjacent to the superior labral attachment.	Releasing too distally may produce an inadequate proximal stump.
Preserve the broadest possible tendon stump.	Excessive radiofrequency resection may reduce tendon bulk.
Follow the natural irregular contour of the degenerative tendon.	Over-resection may compromise the proposed mechanical engagement.
Confirm complete tenotomy.	Incomplete release may leave persistent symptomatic tendon pathology.
Restrict heavy lifting and resisted elbow flexion for six weeks.	Early heavy loading may interfere with the proposed biological stabilisation.

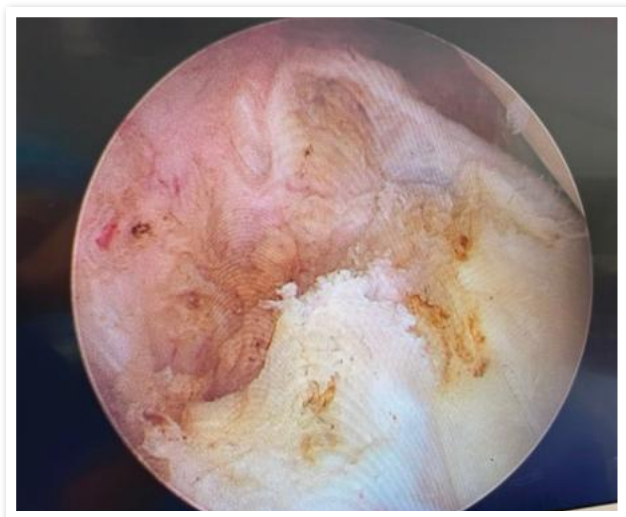


Figure 3: Final arthroscopic appearance following completion of the Cauliflower Technique. The preserved broad proximal tendon stump forms a cauliflower-shaped configuration and is intended to facilitate biological autotenodesis within the proximal bicipital groove.

Discussion

Arthroscopic biceps tenotomy remains an established treatment for symptomatic LHBT pathology, particularly in elderly and low-demand patients. The procedure provides reliable pain relief and functional improvement while avoiding the additional fixation, operative time, and implant-related considerations associated with tenodesis^[2-7]. Comparative studies have generally demonstrated similar improvements in pain and shoulder function, although cosmetic deformity is more frequent after tenotomy^[4-7].

The major limitation of conventional tenotomy is distal migration of the released tendon. This migration may produce the Popeye deformity and, in some patients, cramping or fatigue discomfort^[4-7]. Cadaveric biomechanical work has demonstrated that tenotomy allows distal migration under cyclic loading, supporting the mechanical rationale for techniques that retain or fix the tendon within the groove^[12].

Several technical modifications have therefore been proposed. The Anchor Shape Technique described by Narvani et al. creates an oblique partial incision followed by a complete tenotomy, producing an anchor-shaped tendon remnant that becomes lodged at the articular entrance of the bicipital groove. In their initial series of 12 patients, no Popeye deformity was observed at three months and ultrasound demonstrated the LHBT remaining in the groove in all but one patient^[8]. This technique provides an important precedent for modifying the morphology of the proximal tendon stump rather than performing a simple transverse tenotomy.

The Y-shaped tenotomy concept represents another modification that uses the native funnel-

shaped morphology of the LHBT. The broad tendon configuration is intended to permit the tendon to remain within the groove without additional hardware^[9]. This concept is particularly relevant to the Cauliflower Technique because both procedures rely on preservation of tendon morphology rather than formal implant fixation.

Suture-based techniques represent a different strategy. The Loop 'N' Tack technique described by Hammarstedt et al. uses a suture loop around the tenotomized proximal biceps tendon followed by fixation to a knotless anchor in the proximal bicipital groove. The tensionless construct allows the tendon to scar within the groove and is intended to reduce Popeye deformity and fatigue pain^[10]. Other looped transtendinous techniques have similarly demonstrated lower rates of Popeye deformity compared with conventional tenotomy, although these procedures require suture and anchor fixation^[11].

The Cauliflower Technique, developed by Me Gen Dato' Dr Amiruddin Hamdan (R), differs from these techniques by relying on preservation of the native broad irregular proximal tendon stump rather than creating an anchor-shaped or Y-shaped construct or using suture-anchor fixation. The technique therefore attempts to combine the biological concept of tendon retention with the simplicity of conventional tenotomy. The broad stump may provide greater surface area and mechanical engagement at the entrance of the proximal bicipital groove. Subsequent biological healing and fibrosis are hypothesised to further stabilise the tendon.

The terminology 'biological autotenodesis' should be interpreted cautiously. The proposed mechanism has not been directly demonstrated for the Cauliflower Technique, and the current report does not provide comparative postoperative imaging or biomechanical data. Accordingly, the technique should be considered a hypothesis-generating modification rather than a proven method of preventing Popeye deformity. Patient selection is an important component of the technique. The intended population consists of elderly or low-demand patients with degenerative LHBT pathology in whom conventional tenotomy would otherwise be appropriate. Patients who are young, highly active, involved in heavy manual work, or particularly concerned about cosmetic deformity may remain better candidates for formal tenodesis.

The principal advantage of the Cauliflower Technique is its simplicity. No implant, anchor, knot, or additional fixation is required. The procedure can be performed through standard arthroscopic portals using a radiofrequency probe, and the modification adds little operative

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complexity to a conventional tenotomy. It also preserves the broad degenerative tendon rather than requiring additional manipulation that may further traumatise the tissue.

There are several limitations. First, the proposed mechanical and biological mechanism remains theoretical. Second, the technique has not been compared biomechanically with conventional tenotomy, the Anchor Shape Technique, or suture-assisted techniques. Third, there are currently no prospective clinical data demonstrating a reduction in Popeye deformity, biceps cramping, or distal tendon migration. Finally, the postoperative restriction of lifting for six weeks is based on the proposed biological stabilisation concept rather than a validated rehabilitation protocol specific to this technique.

Future studies should evaluate the technique in a cadaveric model, with particular attention to resistance to distal tendon migration under cyclic loading and ultimate failure load. Prospective clinical studies should assess Popeye deformity, ultrasound tendon position, biceps cramping, patient satisfaction, strength, and functional outcome scores. Such studies would establish whether preservation of the broad proximal tendon stump translates into a clinically meaningful reduction in the recognised disadvantages of conventional tenotomy.

Despite these limitations, the Cauliflower Technique represents a logical extension of previously described strategies designed to retain the LHBT within the proximal bicipital groove. Its distinguishing feature is the deliberate preservation of a broad irregular proximal tendon stump using a simple radiofrequency-assisted tenotomy without formal fixation. The technique therefore offers a potential middle ground between conventional tenotomy and implant-based tenodesis, particularly for appropriately selected elderly and low-demand patients.

Conclusion

The Cauliflower Technique is a simple, implant-free modification of arthroscopic long head of the biceps tenotomy developed by Mej Gen Dato' Dr Amiruddin Hamdan (R). By preserving a broad irregular proximal tendon stump immediately adjacent to the superior labral attachment, the technique is intended to increase mechanical engagement within the proximal bicipital groove and facilitate spontaneous biological autotenodesis. It retains the technical simplicity of conventional tenotomy while addressing its principal concern of distal tendon migration. Further biomechanical and prospective clinical studies are required to determine whether this technique reduces Popeye deformity and improves patient outcomes.

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30 Publications in 5 Years —Here's What I Learned

BY MOHAMAD AZWAN AZIZ

UNIVERSITI KEBANGSAAN MALAYSIA

Let me start with a confession. When I submitted my very first manuscript, I thought I had cracked the code. I had good data, a decent research question, and what I believed was flawless English. Three weeks later, I received a rejection letter that was so brutally honest, I almost framed it out of sheer respect. That rejection stung, but it also lit a fire in me. Fast forward five years, and I now have 30 publications to my name. How? Not through genius, I promise you. Through strategy, persistence, and learning the 'hidden rules' of high-tier journal publishing. My name is Dr. Azwan Aziz, a Sports Physician from Universiti Kebangsaan Malaysia (UKM), an academic editor of PLOS one, and I have walked the exact same path you are walking right now. I have felt the frustration of desk rejects. I have celebrated the joy of 'accepted with minor revisions.' And through it all, I have distilled a set of practical, actionable tips that can transform your publication journey. This article is my gift to you, everything I wish someone had told me when I was starting out.



“Great research doesn't happen by accident; it happens by design”

INTRODUCTION

Let us be brutally honest for a moment. The single biggest mistake Master's students make in publishing is not bad writing. It is not poor grammar. It is not even weak statistics. Too many brilliant students collect their data, finish their thesis, and then, in a panic, ask themselves: "Okay, what do I publish?" By then, the damage is often done. Your research question might be too narrow. Your sample size might be too small. Your outcome measures might be irrelevant to the journal editors you are targeting.

Here is the hard truth. A poorly planned study cannot be fixed by good writing. No amount of eloquent prose will save a study that asks a boring question or uses weak methodology. This is why the most important "tip and trick" for publication happens before you even open Microsoft Word. It happens at the very beginning of your Master's journey, when you are still sketching out your research proposal.

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So, let us talk about how to plan your research like a future published author.

1. Choose a Topic That Makes Editors Sit Up

You can do any kind of research, case series, cohort study, laboratory experiment, systematic review. But if you want your paper to be easily accepted, you need a topic that screams impact.

What makes a topic impactful? Three things:

- **Innovation:** Are you testing a new surgical technique? A new implant design? A novel rehabilitation protocol? Editors love novelty. They want to publish research that advances the field, not research that confirms what everyone already knows. Ask yourself: "If I published this, would another surgeon change their practice?" If the answer is no, your topic needs work.
- **Relevance:** Is your research solving a real clinical problem? Does it address a complication that surgeons fear? A condition that has poor outcomes? A controversy that people argue about at conferences? . Relevance makes reviewers think: "Ah, this is important—I want to read this."
- **Global Appeal:** Editors are global thinkers. Find trends with international interest, fragility fractures, periprosthetic joint infections, arthroplasty in young patients, or the global burden of trauma. Solve a global problem, and the world will read your work.



2. Find Your Trendy Niche

Let me share an analogy with you. In fashion, there is a difference between a passing fad and a lasting trend. The same applies to orthopaedic research.

A fad is chasing the hottest new robotic system and publishing a 10-patient case series. It might get attention for a minute, but it will be quickly forgotten.

A trend is recognising that value-based healthcare, enhanced recovery protocols, and patient-reported outcome measures (PROMs) are reshaping orthopaedics worldwide.

So, how do you find these trends?

- **Read the top journals:** Spend one hour every week reading The Bone & Joint Journal, JBJS, and Journal of Orthopaedic Research. Do not just read the abstracts—read the introductions and discussions. Pay attention to what the editors are writing about in their editorials. They are literally telling you what they want to publish.
- **Talk to your supervisors:** Your supervisors have been in the field for years. They know what is coming down the pipeline. Ask them: "What is the next big thing in your subspecialty?" Their answers will save you months of aimless searching.

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TIPS 1: Survival Guide

- Plan your research with publication in mind – Before you start, ask yourself: "Will this topic interest an international audience?"
- Choose a mentor who publishes
- Start writing early – Do not wait until your data is complete. Write your introduction and methods while you are still collecting data.



3. Plan Your Data Collection Like You Are Building a House

Here is where most Master's students stumble. They choose an interesting topic, write a decent proposal, and then, when it is time to collect data, they realise they have no structured plan. They scramble through patient charts. They forget to measure key variables. They lose follow-up data. Their database becomes a mess of missing values. This is avoidable. But you must plan ahead. Think of your data collection strategy as the architectural blueprint for your study. You would not build a house without a detailed plan. You should not conduct research without one either.

Here is what a good data collection plan looks like:

- Define your variables before you start: What are your primary outcomes? Your secondary outcomes? Your covariates? Write them all down in a datasheet before you touch a single patient file.
- Design a simple, foolproof data collection form: Use a paper form, an Excel spreadsheet, or even better, a secure online database like REDCap. Test your form on five fake patients before you start. Does it capture everything you need? Is it intuitive?
- Plan for missing data: Let us be realistic. Patients will drop out. Records will be incomplete. Plan for this from day one. Oversample your target number by 10-20% to account for attrition. Build in a follow-up strategy, phone calls, postal questionnaires, or routine clinic visits to maximise your retention.



TIPS 2: What Editors Wish You Knew

- Desk rejection is often about fit, not quality. – Read the journal's "Aims and Scope" carefully. If your paper does not align, move on.
- Your title matters more than you think. – Editors and reviewers decide whether to read your abstract based on your title alone.
- A strong cover letter is your first interview. – Use it to explain why your research matters and why their journal is the right home.

CONCLUSION

Publishing in high-tier orthopaedic journals is not about luck. It is not about being a natural writer. It is about strategy, preparation, and persistence.

Let me leave you with three simple truths:

1. Plan before you write. A well-designed study is the foundation of a publishable paper. Invest the time upfront, and everything else becomes easier.
2. Write with purpose. Every section of your manuscript, introduction, methods, results, discussion, has a specific job. Master the structure, and your writing will flow naturally.
3. Persist through rejection. Rejection is not the end of your paper's journey; it is a detour. Learn from the feedback, revise, and submit again.



TIPS 3: Writing Secrets

- Introduction – Use the "funnel" approach: broad context → gap in knowledge → your research question.
- Methods – Write it like a recipe. Someone else should be able to replicate your study exactly.
- Results – Present facts only. No interpretation. Let the data speak for itself.
- Discussion – Mirror your introduction. Start with your main findings, then compare, contrast, and be honest about limitations.
- Abstract – Write this last. It is the most read part of your paper—make it count.