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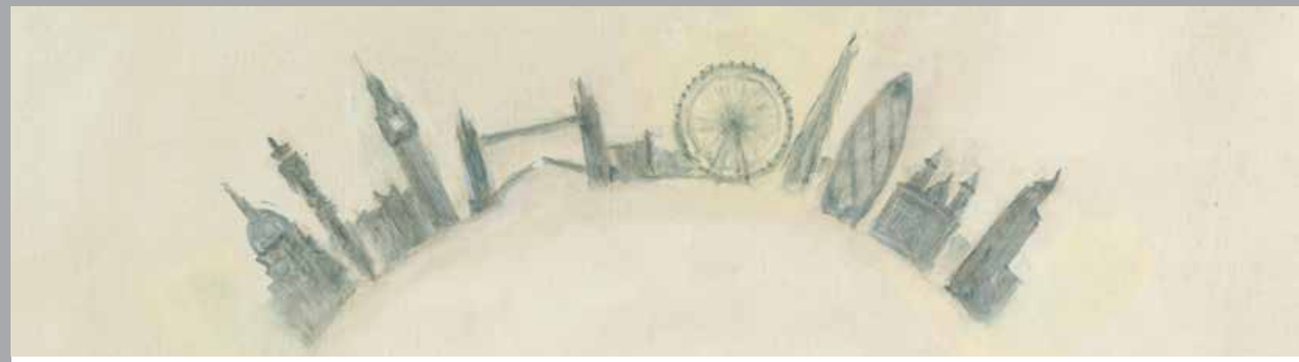
ezine ifssh

CONNECTING OUR GLOBAL HAND SURGERY FAMILY

PUBLISHED REVIEW ARTICLE
RADIAL TUNNEL SYNDROME

RESEARCH ROUNDUP
EARLY CONTROLLED ACTIVE MOTION IN TWO REPLANTED HANDS

"One Humanity; One Earth"



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Science vs. Politics

The current Covid-19 pandemic is sadly a stark reminder of the opposing differences in approach between scientists and politicians, as well as their inherent difference in personalities and agendas.

On 30 January 2020 the World Health Organisation (WHO) sounded its highest alarm regarding global infections, called PHEIC (Public Health Emergency of International Concern). It is officially recognised by 196 countries, but only a few countries heeded this highest emergency warning. The WHO had no option then to declare on 11 March 2020 that the new corona virus infection was now in fact a pandemic. This clearly indicated that we were all involved, globally.

The announcement pleaded for a collective, international effort; not a local or national effort. Most nations, especially the richer, more developed nations, again ignored this call and decided to selfishly do it alone.

Scientists are in the habit of sharing new found knowledge, and do so freely in peer reviewed journals, open meetings and seminars. Yes, we often want to be first, but this does not prevent us from sharing with colleagues all over the planet.

Politicians on the other hand tend to have a different agenda. They have to play the game to stay in power. This leads to nationalism, self-interest and internal conflict. Facts are distorted to paint a certain viewpoint or claim. Co-operation is not a priority.

Wealthier countries frantically vaccinate their own citizens with little concern for the rest of the world where the spread and mutation of new variants of the virus continue unabated. One recognises not only a selfish attitude, but also an obvious arrogant one, as well as a total lack of humanness from some of these nations. Recently the WHO called it a “moral outrage”. One western leader even went so far as to declare that his country’s success of the vaccine rollout was due to “greed and capitalism”. Vaccine nationalism has no place in a pandemic.

This self-serving attitude is further enhanced by the unwillingness of certain nations, particularly the UK, USA and EU, to waive the Covid-19 vaccine patents which are held by prominent domestic pharmaceutical manufacturing companies, preventing lower income countries from even manufacturing vaccines under licence.

Covid-19 will not be defeated if politicians lead the way in tackling this pandemic. Scientists should direct the way in proven, scientific ways. Pandemics cannot, and of course should never, be politicised.

The contribution in the Art section of this Ezine issue reflects humanity’s (including planet Earth’s) co-existence. We are all in it together. One cannot be without the other.

Take care,

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President's Report

Dear friends,

It is early morning on a warm, spring-breaking Sunday as I am writing this letter. My left arm is still a bit sore because from the second dose of the covid-19 vaccine which I received last week. Paul Simon is singing in my ear phones “My mind’s distracted and diffused, my thoughts are many miles away,.....”. So am I. Mixed-emotions: gratefulness, sorrow, hope,.... I am still taken aback by the number of colleagues and relatives who have departed us because of this virus. They will not be forgotten.

But let’s face the facts. The light at the end of this tunnel is no longer an illusion, nor a mirage. It is for real. It may still take some time to get out of this tunnel, but we need to start thinking about the future. What will the post-covid-19 world be like? Are we going back to what we considered “normal” just more than a year ago? Frankly, I hope not.

The way we shared knowledge before covid-19, aside from it being excessively expensive, was seldom as effective as we assumed or would have liked it to be. Think about the enormous amount of time, energy and health spent by many of us in travelling all over the world to disseminate what we thought was true knowledge. The higher education sector was already calling for a change. Why did we need a pandemic to react?

If something beneficial emanates from this virus plague, it is that it forced us to re-evaluate the fact of a much too expensive form of globalization. Yes, all of society will have to be transformed. But returning to the previous situation is not possible.

Another benefit is that some remarkable technical innovations developed during this pandemic will remain. Think of automated testing, for instance. Relatively few PCR tests were available during a single day from a standard laboratory some months ago. Compared this to the huge number nowadays performed.

Telemedicine is evolving in many and exciting ways. If most businesses are doing their best to become digital, why shouldn’t we do the same? Of course, not all what is “possible” is to be considered adequate, desirable or effective. We will need to be innovative and develop a “new norm” to share our knowledge. Noam Chomsky, one of the most prominent intellectuals of our times, remarks: "We have to ask ourselves which world will come out of this. In what world do we want to live in?”
Indeed, it is ok to keep an eye on the rear view mirror, but let’s not forget that our main job is to control the steering wheel and look forward. This will ensure that we keep our Federation on track.

Best to you all.

MARC GARCIA-ELIAS
President: IFSSH

Obituary
John Knowles Stanley

John Knowles Stanley was born in Cardiff on 30 March 1944 but grew up in Oswestry in North Wales. From the Boys' High School, he moved in 1962 to Liverpool University Medical School, qualifying in 1968. His subsequent career in orthopaedic surgery was appropriate, as these places are linked indelibly with Sir Robert Jones, the founder of the modern specialty.

After a first house officer post in Ormskirk he entered surgical training in the Liverpool Region, becoming a Senior Registrar in orthopaedics in 1974. In 1979 he returned to Ormskirk & District General Hospital as a Consultant, with sessions at Wrightington Hospital. Shortly after appointment, at the age of 35 he had a myocardial infarction resulting in bypass surgery. This was a major factor in his decision in 1984 to move to full-time hand surgery at Wrightington. Under his leadership the unit there grew exponentially, developing a particular focus on the treatment of patients suffering with rheumatoid arthritis as well as other complex problems of the wrist. From 1991, he was joined by more consultant colleagues creating a renowned centre of innovation and excellence. At his retirement in 2009 the Wrightington Upper Limb Unit had thirteen Consultants, both orthopaedic and plastic, dealing with all conditions of the upper limb, from shoulder to elbow and hand, with a high national and international reputation. This was a testament to John Stanley's professional and leadership skills as well as his personal qualities of commitment, passion and drive combined with pragmatism and perseverance.

Although much in demand, he forsook private practice early in his career. He developed in its place a large medico-legal practice, which did not interfere so much with family and social life, and his hobbies. Such was the quality and clarity of his opinions, that he was required in the witness box only rarely.

John Stanley's research activities, particularly in the introduction of hand and wrist prostheses, produced more than 100 peer reviewed papers in learned journals as well as countless presentations to learned societies. He wrote two books, supplied chapters for 20 more and delivered many eponymous lectures. He travelled widely, not only in the UK and Europe, but worldwide, particularly in America, Australia, France and Switzerland, resulting in a long list of honorary fellowships and memberships. A crowning academic accolade was the award in 1996 of a Chair in Hand Surgery by the University of Manchester, a considerable distinction. Finally in 2016 John was made "Pioneer of Hand Surgery ", by the International Federation of Societies for Surgery of the Hand, a lasting tribute as his name now sits amongst the greats of Hand Surgery.

He supervised many surgical trainees, a role in which he excelled. Many of these were at the end of their orthopaedic training, acquiring a sub-specialist polish in hand surgery before taking up their own consultant appointments. He continued to teach at Wrightington Hospital until shortly before his death. He also served for many years as an Examiner for the Intercollegiate Board in Orthopaedic Surgery.

Not surprisingly John Stanley was an active member of the British Society for Surgery of the Hand, presenting at many meetings, serving on Council and becoming President in 1999. In 2006 his professional standing and the affection in which he was held by the wider surgical community led to his election to the Council of the Royal College of Surgeons. His College career culminated in his election as Vice-President from 2010 to 2012, a role in which he served with distinction and good humour.

John Stanley's first myocardial infarction happened when he was 35, his father having died of the same condition at 55. His subsequent course was complex in the extreme, with four open cardiac operations and numerous other less major procedures. It stretches the bounds of credibility that with such problems he completed a distinguished surgical career and a busy family and social life with his enthusiasm and sense of humour unaffected.

John met his wife Gail when they were both students in Liverpool and they married in August 1967, before he qualified. She at first supported John in his surgical practice, but later her own career blossomed as a magistrate, Deputy Lord Lieutenant and High Sheriff of Lancashire. In turn he supported her unfailingly, a role well suited to his unassuming, friendly personality. Not surprisingly both were active in support of the British Heart Foundation.

He had a life-long passion for aviation having learnt to fly as an air cadet at school. His heart problems prevented him pursuing this, but he worked as a volunteer in the aeronautical section of the Museum of Science and Industry in Manchester. He had a serious interest in military history, particularly but not exclusively of the Second World War, and made many visits to battlefield sites. He managed to take flights in a Spitfire, a Mustang and a Lancaster Bomber, fulfilling some of his dreams, particularly when he was allowed to take the controls of the Spitfire and found his piloting skills had not deserted him.

John was married to Gail for 54 years. His two children Sian and James both followed their father into medicine, Sian as a General Practitioner in Bishops Stortford and James, also a Consultant Orthopaedic Surgeon, in York. He has three grandchildren.

Ian Trail and John Black

Report from the Secretary-General of IFSSH

55 and Growing

The IFSSH has now been in existence for 55 years. IFSSH was formed in 1966 for the purpose of coordinating the activities of the various Societies for Surgery of the Hand throughout the world and in this way to increase and spread knowledge of surgery and rehabilitation of the hand.

During this period, it has been led by 19 Hand Surgeons with vision and we have had 14 Congresses. The triennial congresses started only in the year 1980 (Rotterdam, The Netherlands).

Fifty-five years is a considerable period in the life of an individual but for an organization it is just another milestone. Few organizations remain healthy and vibrant at 50 years. When they look forward to the next 50, they understand that to remain relevant they have to make meaningful progress.

Progress is impossible without change. Change without letting go of the values the organization stands for, is the challenge for the leadership. The current leadership were fully aware of the demands to meet this challenge when they introduced changes to the constitution.

Ensuring Greater Member participation

In the erstwhile council, with only one member-at-large and infrequent change in the Historian position and a triennial congress schedule, there was opportunity for only 3 to 4 persons in a decade to enter the Executive Committee. With a membership of 61 Societies from 59 nations this looked grossly inadequate.

With the Delegates' Council's adoption of the new bylaws we have increased the number of member-at- large positions to five and this will enhance greater member participation in the affairs of the Federation. More than that, now the Delegates will have a greater talent pool from which they can choose the Secretary-General.

Increasing the Opportunity to Lead

As hand surgeons we can be proud that we have many great men and woman who have showed exemplary leadership qualities. Some with their great surgical skill and academic talent helped push the boundaries of care. Some have organized institutions and done heroic work in impossible circumstances.

We need to have them all lead the IFSSH. We now have reduced the leadership cycle to 2 years from 3. This in effect will see that we will have 5 presidents in a decade. Further, by abolishing the Secretary-General Elect and President-Elect positions, the tenure of members in the ExCo is reduced. These alterations allow us to maintain continuity with change.

Though the leadership changes once in two years, we will continue the triennial cycle of our congresses as per the majority wish of the members.

Reaching out to the Needs of the Member nations

We have now enhanced our capability to reach out. IFSSH can help sponsor educational initiatives of Member Societies. The Committee for Educational Sponsorship is looking for opportunities to make a difference in the lives of people. We look forward to receiving applications and information can be obtained from our website www.ifssh.info.

As a surgeon hailing from a developing country and knowing the value of help, I firmly believe in the statement of Bill Gates when asked about sponsorship and charity work. He said, 'Charity projects must be done with the same efficiency as the main business which allowed us to do charity'. A professionally written project plan is a great first step. The IFSSH Harold Kleinert Professorship is another great scheme, and we are sure that once the pandemic settles, we will recommence this worth-while initiative.

IFSSH Ezine – 10 years and flourishing …

It is a decade since we started the IFSSH Ezine, our online magazine and I take this opportunity to congratulate Ulrich Mennen for suggesting and guiding it through so well over these years. Published four times a year, it is a mixture of IFSSH organizational matters, news from Member Societies and high quality scientific articles.

The stories of the IFSSH Pioneers of Hand Surgery are well researched and retold and are always been inspirational to read. All the previous issues are available from our website (www.ifssh.info) and the contents don't seem to age. I request everyone who reads this publication to also visit our website not only to read the back issues but also to see the newly created webpages so well done by our historian David Warwick.

May I remember all our Members: "The IFSSH Ezine is for the Members by the Members" Any hand related contribution is most welcome.

Looking Beyond the Pandemic

The pandemic has affected all of us in a way that we could have never imagined. On behalf of the ExCo of IFSSH, I wish you all good health. For those in the front line, we wish 'stay safe as you keep working'. In these times I like to believe in the words of F D Roosevelt, "We have always held to the hope, the belief, the conviction that there is a better life, a better world, beyond the horizon."

I am sure we will reach that horizon well before the London IFSSH Congress which is scheduled to be held from the 6 to10 June 2022. It will be a great event. Many of us have missed meeting so many in person for so long. Let us all come together to make the London IFSSH an event to be remembered.

Business matters

***Executive Committee: 2022 Elections**

In September 2020 the IFSSH Delegates' Council adopted a revised set of bylaws. The amendments allowed for compliance with current not-for-profit best practices and legal conventions within our US registration.

Under these bylaws, a number of changes have occurred to the composition of the Executive Committee as well as the nomination and election processes. In summary, the following will occur in 2022:

- The President will move to Immediate Past President
- The President Elect will move to President
- The Secretary-General will move to President Elect
- The Secretary-General Elect position (currently vacant) and Historian position will be officially retired in 2022 as part of the on-going process to redesign the ExCo composition.
- Elections will occur for:
  - Secretary-General
  - Communications Director
  - 5 Members-at-Large
  - 2 Nominating Committee Members-at-Large

A full description of the nomination and election process for each of the above-named positions, including the pre-requisites and timing for submissions, will be distributed via email to all Delegates in August 2021. The full information will also be published in the August 2021 Ezine.

***2028 IFSSH Congress Host Society: Call for bids**

The IFSSH Executive Committee has recommended that member societies from the Asian-Pacific region be invited to host the 2028 triennial congress. This main scientific event of the IFSSH will be celebrated every three years in a member society country that is in good standing with the IFSSH, including payment of their annual dues.

The society hosting the event will be selected from applications six years before at the annual Delegates' Council meeting. Those societies from countries which also have a hand therapy association/society should discuss the possibility of hosting a combined meeting. Information regarding the application process is on the IFSSH website: https://ifssh.info/guidelines.php

The societies which are applicants must submit a formal petition to the Secretary-General at least three months ahead of the Council meeting. The same documentation should be sent by the bidding society to each member country delegate and IFSHT representative for evaluation at least three months before the Council Meeting.

Any Asian-Pacific member society that is interested in hosting the 2028 IFSSH Congress should inform the IFSSH Executive of their intentions and ensure that the full bid is forwarded, as detailed in the instructions above, by 6 March 2022, for consideration at the London meeting (6-10 June 2022).

***Educational Sponsorship**

The IFSSH Committee for Educational Sponsorship (CES) is calling for applications from any interested group who requires financial support to undertake hand surgery education programmes worldwide. Applications should fulfil the guidelines (https://ifssh.info/educational_sponsorship.php) and be forwarded to the Secretary-General (administration@ifssh.info) at least 3 months prior to the commencement of the event/project.

Submissions to the IFSSH CES require the support of the applicant's society. If your society is not an IFSSH member society, funding is possible if a letter of endorsement is provided by an IFSSH member society.

***Future Meetings**

A detailed list of national and regional hand surgery meetings is available on the IFSSH website. The triennial IFSSH Congresses are as follows:

XVth IFSSH – XIIth IFSHT Congress – London, United Kingdom
6 - 10 June 2022

XVIth IFSSH – XIIIth IFSHT Congress – Washington D.C., USA
29 March - 3 April 2025

With very best wishes

S RAJA SABAPATHY
Secretary-General: IFSSH
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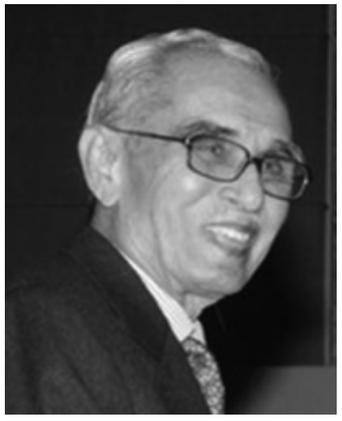

Ramaswami Venkataswami

MBBS, MS(Gen Surg), FAMS, MCh (Plast Surg), FRCS(Edin), DSc(Hon).

Ramaswami Venkataswami was born on 20 January 1933 in Kothaneri, Birudhanagar District, Tamil Nadu in India.

He did his medical training in 1952 to 1956 at the Stanley Medical College in Madras, now Chennai, India, and qualified with a MB BS degree from the University of Madras in 1956. He continued his internship at the Stanley Medical College Hospital, as well as his General Surgery post-graduate training (MS). Venkataswami further qualified in Plastic surgery (MCh) from the Nagpur Medical College in 1967.

In 1971 he was asked to establish the Department of Plastic and Reconstructive Hand Surgery at the Stanley Medical College and the Government Stanley Hospital, Madras. He then started the first 24-hour Hand Surgery Service in India, at the Government Hospital in Madras in 1974. This was followed by the first Microsurgery Centre in 1979, and in 1984 the first Certificate Course in Hand Surgery in India. Prof. Venkataswami retired from Government service in 1991.

Venkataswami organised the first national body for the prevention of hand injuries in India, founded the Indian Society for Reconstructive Microsurgery in 1992, as well as the Brachial Plexus Surgery Group in India in 2004.

He is also known for a number of original surgical techniques which include various skin flaps for finger injuries, bi-lobed groin flap, and a flap to cover mouth lesions. He described a new clinical entity: "thumb web burst". He has published many articles, chapters in textbooks, presented numerous papers in India and internationally, and has been guest lecturer at known international centers.

Venkataswami was President of the Indian Society for Reconstructive Microsurgery, Brachial Plexus Surgery Group of India, Indian Society for Surgery of the Hand, and Member of numerous national and international societies and associations. He has been on the Board of Examiners for Plastic Surgery of 5 universities. He has a long list of awards, including receiving in 2019 the prestigious Padma Shri civilian award from the Republic of India.

After his retirement, Prof. Venkataswami started a practice at the Apollo First Medical Hospital in Chennai, India.

In honour of his numerous achievements and contributions to Hand Surgery, Ramaswami Venkataswami was named Pioneer of Hand Surgery at the Ninth International Congress of the IFSSH held in Budapest, Hungary, 13-17 June 2004.

Martin Singer

MB ChB, FRCS(Eng). 1921–2015

Martin Singer was born in Cape Town, South Africa on 17 June 1921.

He qualified with a MB ChB in 1944 from the University of Cape Town (UCT). He then worked at the North Middlesex Hospital in London, UK from 1946 – 1948, and as a post-graduate at the Hammersmith Hospital in 1948 and 1949.

He obtained his surgical qualification as Fellow of the Royal College of Surgeons (FRCS) (England) in 1951. Singer worked at the Royal National Orthopaedic Hospital in London and Stanmore from 1949 to 1956, and then moved back to South Africa where he started a private orthopaedic practice specialising in hand surgery and worked part-time in the Orthopaedic Department of UCT.

In Cape Town he pioneered the Congenital Hand Clinic at the Red Cross War Memorial Children's Hospital, the Hand Clinic at the Cerebral Palsy School and the Maitland Cottage Home, as well as a Hand Clinic, a Brachial Plexus Clinic and Microsurgical Laboratory at the Groote Schuur Hospital (GSH). In 1999 the GSH Clinic was named after Martin Singer.

These early efforts to establish dedicated Clinics to Hand Surgery led to the formation of the South African Society for Surgery of the Hand (SASSH) of which Singer was a founding member.

He was SASSH President from 1973 to 1975, as well as President of the South African Orthopaedic Association (1977-1979).

He presented many papers at local, national and international meetings, and published numerous articles in journals and chapters in textbooks. Singer also became known for some novel innovations: the "dry heat hot box" for the management of hand injuries and the "stockinette sleeve dressing", amongst others.

Martin singer passed away on 8 July 2015 at the age of 94. He is still fondly remembered as a passionate teacher and dedicated clinician by many former students, registrars, fellows and colleagues.

At the Ninth Congress of the International Federation of Societies for Surgery of the Hand (IFSSH) in Budapest, Hungary (13-17 June 2004) Martin Singer was honoured as Pioneer of Hand Surgery.

Published Review Article

Further Knowledge on Featured Topics

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Radial tunnel syndrome: definition, distinction and treatments

Radial tunnel syndrome (RTS) is a disease causing lateral elbow and proximal dorsolateral forearm pain that may radiate to the wrist and dorsum of the fingers without obvious extensor muscle weakness. An epidemiological study shows an incidence of nine new cases of radial neuropathy per 100,000 population for men and six per 100,000 for women in a 10-year period (Hulkkonen et al., 2020). These incidences are far less than entrapments of the median and ulnar nerves.

There are ambiguous descriptions of RTS in relation to posterior interosseous nerve (PIN) compression. This article intends to discuss the anatomy of the radial tunnel and the clinical distinctions between two entities.

RTS and PIN compression are two distinct entities

RTS presents primarily with pain in the proximal dorsolateral forearm and sometimes with sensory disturbance along the distal lateral forearm and the dorsal hand, but without remarkable weakness in finger extension. There may be minor motor problems, such as mild weakness in finger extension or dropping the hold object, but the motor problems are not a concern compared with the lateral arm pain. In contrast, PIN compression does not present any sensory disturbance. It is manifested by major weakness in finger extension; the typical cases present wrist extension with radial deviation when the wrist is actively extended.

Sites of possible restraint or compression

Despite distinct clinical presentations, the two entities share possible sites of restraint or compression that cause the problems; but in the patients with RTS, the compression to the PIN is mild, which may be better called restraint, interference, affection or, at most, intermittent compression.

The sites of restraint to the PIN from proximal to distal are as follows. (1) The capsular tissue of the radiocapitellar joint. Thickening of the joint capsule, arthritis or synovitis can induce entrapment of the radial nerve. (2) Hypertrophic crossing branches of the leash of Henry, namely, vessels from the radial recurrent artery (Lister et al., 1979). (3) The leading proximal tendinous and medial edges of extensor carpi radialis brevis (ECRB). (4) The proximal aponeurotic margin between the superficial and deep layers of the supinator, often referred to as the arcade of Frohse, which is the most common entrapment location. (5) The supinator muscle itself. (6) Infrequently the distal border of the supinator between its two heads (Figure 1).

These sites are located along two named nerves: (1) the main trunk of the radial nerve and (2) the PIN. The PIN is the distal continuation of the radial nerve after it divides into the superficial branch of radial nerve (SBRN) at or slightly distal to the radiocapitellar joint. At any of these sites the nerves may be compressed with no traceable external causes. Notably, the arcade of Frohse, the most common site of compression (Rekant et al., 2020; Spinner, 1968), is tendinous in one-third of the forearms of studied individuals and variability exists in the supinator muscle, though the arcade more often presents as membranous, implying that some people are anatomically predisposed to spontaneous compression to the PIN (Thomas et al., 2000).

The radial nerve is also described to give off the SBRN and the deep motor branch (or dorsal motor branch), and the latter is renamed as the PIN after entering the supinator or at the distal edge of the supinator in many anatomical textbooks. This is what Dr Roy Meals and I recalled we have learnt from anatomical lessens. These definitions about the PIN can be also found in hand surgery books. However, other hand surgery books state that the PIN branches directly from the main trunk of the radial nerve. The current edition of Gray's Anatomy (Standring, 2015) also defines the PIN as branching from the main truck of the radial nerve. Therefore, I now call the branch destined to the dorsal forearm the PIN from the point of its separation from the SBRN. I consider that calling this branch the deep motor branch is traditional.

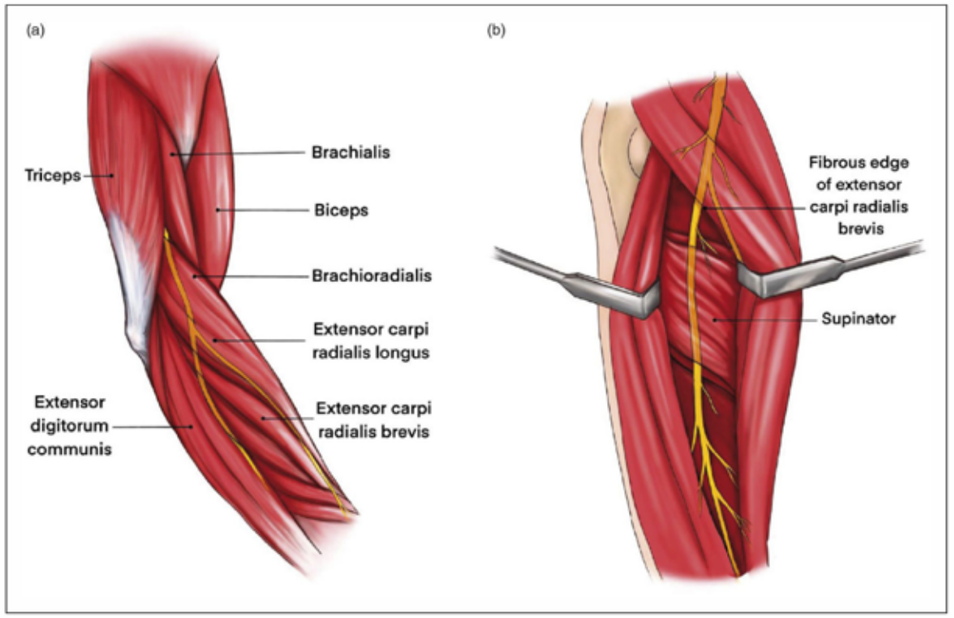

Figure 1. Anatomic path of the distal main trunk of the radial nerve and the PIN. (a) The PIN nerve is covered by brachioradialis, extensor carpi raidalis longus and brevis from lateral view. (b) At the deeper layer, the PIN nerve is covered by the supinator muscle. There are a number of sites where compression to the PIN nerve can occur.
(Copyright, Julia Ruston).

Omitting it would be easier for the writers to discuss aetiologies of RTS or PIN palsy and for the readers to understand. (I use the PIN for simplicity in Figure 1 and later in Figure 3.)

Aetiologies

Tumours (often lipoma or cysts), foreign bodies, repetitive trauma, iatrogenic injections (leading to tissue fibrosis), elbow arthritis and neurological disorders may also be causative. Some patients have no traceable causes. The lateral intermuscular septum of the upper arm is also a potential site of anatomical compression, but has not been proven clinically. In the patients with PIN palsy, there is a preponderance to benign tumours as aetiologies (McGraw, 2019), and non-compressive aetiologies include neuralgic amyotrophy and hourglass-like fascicular constriction (Englert, 1976).

RTS is commonly described as a result of 'compression to the PIN', but RTS has only mild restraint to the PIN based on both my first-hand and consultative observations. I believe that descriptions such as *restraint*, or *interference*, or *intermittent compression to the nerve* – not compression to the PIN – offer clarity and better describe the affected nerves in patients with RTS.

I observed that compression to the PIN was very mild or questionable in RTS, in contrast to prominent compression to the PIN leading to PIN palsy. I consulted two senior surgeons about their observation of degrees of nerve compression in the two entities. Dr Michel Boeckstyns also uses 'affection to the nerve', and Dr Roy Meals considers 'intermittent neurapraxia' an appropriate description. The cause of RTS is therefore more suitably described as restraint, interference, affection, intermittent compression or intermittent neurapraxia to the PIN, rather than 'compression', to make it distinguishable from that in the PIN palsy.

My observation and above consultation led me to propose that the currently designated RTS could be

called a mild (caused by neurapraxia leading to pain), and PIN compression a severe (caused by definitive compression leading to PIN palsy) type of RTS, which avoids considering them as two diseases.

Anatomical considerations

Definition of the radial tunnel

There are several different definitions of the radial tunnel. Mostly commonly, this tunnel is defined as having the elbow joint capsule posteriorly, the extensor carpi radialis longus (ECRL) and ECRB muscles laterally, the brachialis and the biceps brachii tendon medially, while the brachioradialis (BR) muscle forms the roof (Rekant et al., 2020). By this description, the PIN is mostly not within the boundaries. Anatomically, the PIN passes deep to the BR, ECRL and ECRB. This definition of the radial tunnel does not cover all possible sites of compression, including the arcade of Frohse. Nevertheless, this definition appears in many textbooks and review articles, which might have been passed down without due justification.

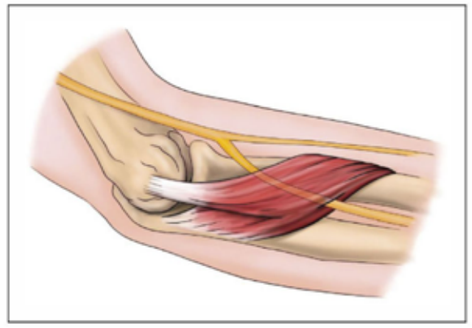

Figure 2. The PIN and its relation to the supinator muscle. Two heads of the supinator muscle can be seen. The tunnel within the supinator muscle does not cover all possible sites of compression and it is only a part of the radial tunnel.
(Copyright, Julia Ruston).

Entirely different from the above description, the radial tunnel is also described as the space where the PIN travels through the arcade of Frohse and between the two heads of the supinator (Waljee et al., 2018). I consider it a better definition, but it still does not cover all possible sites of compression (Figure 2).

The third definition describes the radial tunnel extending from the head of the radius to the distal border of the supinator muscle (Lister et al., 1979); and the boundaries are the supinator, ECRL, ECRB and BR muscles (Portilla Molina et al., 1998), as cited in an online article (Moradi et al., 2015). I found this description to be the best and agreeable to me. Being a longitudinal and curved (theoretical) space, the radial tunnel is 5–8 cm in length, begins anterior to the radiocapitellar joint medial to the BR, courses obliquely deep to the BR, ECRL and ECRB, and continues through the supinator. The radial tunnel is not made up of rigid tissues.

I suggest that the *radial tunnel* uniformly indicates a continuous spiral space around the PIN and ends at the distal border of the supinator (Figure 3).

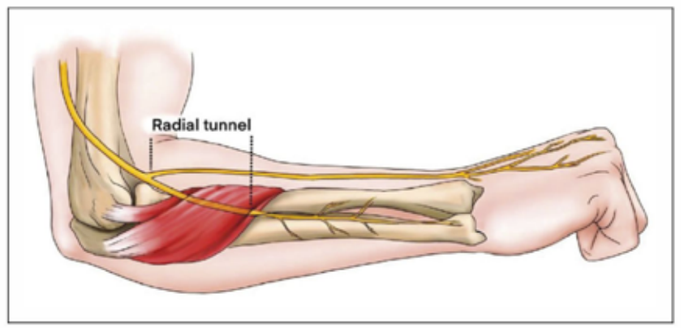

Figure 3. I suggest that the radial tunnel be consistently defined as a continuous spiral space around the PIN *starting from* the point of bifurcation to the superficial sensory branch and *ending* at the distal border of the supinator. The radial tunnel is shown between two vertical lines.
(Copyright, Julia Ruston).

Radial nerve branching around the elbow

Nerve branching in this area is vital to understanding the pure motor dysfunction of the *PIN compression or palsy*. The PIN and SBRN divide from the radial nerve at the level of the tip of the lateral epicondyle or slightly distally, being anterior to the radiocapiteller joint and the radial head. At the same level, another branch innervates the ECRB (Figure 1). The branches to the ECRL and BR commonly arise from the radial nerve proximal to the branch to the ECRB. Branches to the ECRB arise from the main trunk of the radial nerve in about half of individuals and from the PIN proximal to the arcade of Frohse in the other half. The branches to the supinator arise from the PIN before entering the supinator. Distal to the supinator, the PIN gives off its branches to extensor carpi ulnaris (ECU), thumb extensors, extensor digitorum communis (EDC) and other muscles. In PIN compression, therefore, the ECRL is spared and the ECRB is mostly spared, the two radial-side wrist extensors function normally, in contrast to weak finger extensors and ECU.

Figure 4. The most common area of maximal tenderness is 4–5 cm distal to the lateral epicondyle, as shown in this 45-year-old female patient with two blue dots spanning 3 cm. She had persistent mild to moderate pain in the lateral forearm and the radial half of the right dorsal hand and occasionally dropped grasped objects. She had no remarkable wrist or digital extensor motor deficiencies. She was diagnosed as having RTS and was treated conservatively for 7 months without relief of symptoms. She proceeded to surgical exploration and release by the author on 27 February 2020 with an incision made between the two blue dots.
(Copyright, Jin Bo Tang).

Clinical presentation

Patients with RTS report pain localized to the lateral aspect of the proximal forearm. Patients may report pain and weakness after activities of strenuous elbow extension or forearm rotation. The pain localizes to the mobile wad (ECRL, ECRB and BR) and less so along the course of the radial nerve in the proximal forearm (Figure 4). Pain may worsen at night. Sensory disturbance and muscle weakness (arm fatigue) may present but are neither remarkable nor characteristic. The disease is more prevalent in women, especially in those 30 to 50 years old (Moradi et al., 2015).

The predominant finding on examination of RTS is tenderness over the radial tunnel 4–5 cm distal to the lateral epicondyle (Table 1). Resisted extension of the middle finger, with the elbow in extension, the forearm in pronation and the wrist in neutral, provokes pain in the ECRB and BR along the course of the radial nerve. The diagnosis is clinical with imaging and electrophysiology rarely demonstrating any abnormality (Lawrence et al., 1995).

Table 1. Distinctions of symptoms and signs of radial neuropathies at the elbow and forearm, and lateral epicondylitis modified after Xiao and Cartwright (2019).

Clinical syndrome	Site of pathology	Symptoms	Signs
Radial tunnel syndrome	The PIN	Lateral proximal forearm pain 4–5 cm distal to lateral epicondyle in the area of the mobile wad and radial tunnel	Pain with resisted active supination or wrist extension; pain with resisted middle finger extension; localized tenderness along the path of the motor branch of the radial nerve
PIN compression	The PIN, most commonly at the arcade of Frohse	Pure motor symptoms, weakness in forearm and hand	Weakness in wrist and finger extension, radial deviation with attempted wrist extension
Differentiation Lateral epicondylitis	Lateral epicondyle at insertion of ECRB	Pain with resisted wrist extension; pain with gripping motion	Focal point tenderness on the lateral epicondyle at insertion of ECRB; exacerbated pain with resisted wrist extension with fully extended elbow, resisted extension of long fingers and passive wrist flexion in protonation

ECRB: extensor carpi radialis brevis; PIN: posterior interosseous nerve.

PIN compression, conversely, involves an offending lesion or compression on the deep motor branch or PIN, therefore sparing the SBRN and variably weakening the muscles innervated by the PIN. PIN compression predominantly causes weakness in the finger and thumb extensors and the ECU (Table 1). The patients are unable to extend the finger or thumb metacarpophalangeal joints, thereby exhibiting dropping fingers or dropping thumbs. Some patients present remarkable radial deviation during wrist extension, which is typical in PIN compression. Pain in the dorsolateral forearm may be very mild or absent.

Diagnosis

RTS is diagnosed according to clinical signs and symptoms. It is also a diagnosis of exclusion. Electrophysiological examination infrequently reveals positive findings. Lateral epicondylitis presents tenderness above the elbow laterally, which is proximal and separate to the site of tenderness with RTS (Table 1). If there is a doubt whether the condition is RTS or epicondylitis, we can inject local anaesthetic carefully just at the epicondyle. If the pain does not resolve, RTS is likely. The often-painless presentation of PIN palsy may lead to the assumption that tendon rupture has occurred. Cervical radiculopathy, which also should be ruled out, often causes more diffuse arm pain. Diagnostic lidocaine injection with or without cortisone at the site of pain or tenderness can aid in the clinical diagnosis of RTS.

MRI is often used to detect or rule out space-occupying lesions, entrapment sites and assess nerve morphology, which are usually negative in RTS, but it may reveal pathologies of patients with PIN palsy. Ultrasonography is a more convenient tool in detection (Xiao and Cartwright, 2019).

Treatments

Non-operative treatment should be prescribed for 6 months before proceeding to surgery. If the patients are really eager to have surgery (often for earlier job return), surgery can be considered 3–4 months after initial onset, but conservative treatment for 6 months is a common guideline because patients can respond well to rest and cortisone injection. Cortisone with or without lidocaine should be injected at the site of maximal tenderness. Splinting or physical therapy are often ineffective. Pain or motor deficiencies may vanish spontaneously, therefore rush to surgery should always be avoided.

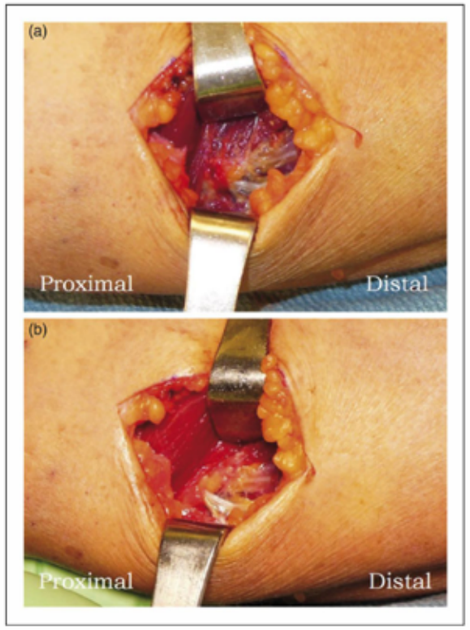

Figure 5. (a) A surgical incision of 3 cm directly over the site of maximal tenderness reveals loose fibrous compression under the edge of the ERCB close to the origin of the ECRB. (b) After removal of the loose fibrous compression, the nerve was found to go proximally within loose tissue without compression, as shown in this picture. The leash of Henry is visible and normal.
(Copyright, Jin Bo Tang).

Operative treatment

The RTS and PIN palsy share the same surgical approaches. The most common approach to the radial tunnels is the ECRB-EDC interval, namely the posterior approach of Thompson (1918). This approach can easily expose the ECRB insertion and reveal the radial tunnel under the ECRB and ECRL, the leash of Henry, arcade of Frohse, as well as the supinator covering the PIN (Figure 5). In my

Figure 6. The arcade of Frohse was explored distally and released, which was muscular without a tendentious portion. Neither the arcade nor the supinator muscles were compressive. The supinator muscle fibres were not released. Two weeks later, the patient reported complete disappearance of the symptoms of constant pain in the released area and occasional dropping of objects during grasp, which had been present for 7 months before surgery. [Copyright, Jin Bo Tang].

experience, the initial incision does not need to be as long as described by many others.

The incision is made over the area with maximal tenderness and often only needs to be 3–4 cm long, which is sufficient to explore from the ECRL to the supinator in non-obese patients (Figure 5). The incision can be extended as needed. The supinator muscle over the PIN should be examined, but not necessarily released if the supinator is not compressing. However, the arcade of Frohse of the supinator must be released. The very proximal portion of the radial tunnel is not usually explored unless aetiologies exist, for example, elbow arthritis or a cyst.

Though many surgeons describe that all the potential compression sites – ECRL, ECRB, the leash of Henry and arcade of Frohse – should be released in both RTS and PIN compression, I release the sites where abnormalities are detected during exploration, often together with release of the arcade of Frohse (Figures 5 and 6), the most common site of compression. I do not ligate the leash of Henry if it is found to be normal, but I release the tissue around the leash to decompress it, and I release the arcade of Frohse even when it appears normal.

In some patients, the surgeons may find compression is only suggestive, not definitive. The suspected compression site needs to be released. The release can be a simple cut with scissors or a blade, or local excision of suspected tissues. The ECRL, ECRB, leash of Henry and arcade of Frohse should all be explored, even if one of them has already been found to be compressive. The exploration to these structures is easy as they are in close proximity to each other. Another reason for exploration of multiple sites is that surgeons may incorrectly judge which structures entrap or interfere the nerve, missing a site of compression or interference. If a tumour is the aetiology, all sites of compression should also be examined and sometimes released along with tumour removal.

Other approaches include the BR-ECRL interval, which does not provide as good exposure to the supinator as the approach through the ECRB-EDC interval, and the anterior approach, which should be reserved for the patient who is suspected to have a radiocapitellar joint disorder or another lesion in the elbow region. A BR-splitting incision should not be used as a BR-ECRL interval is much easier and causes less trauma than splitting a muscle.

Outcomes

I choose not to provide a detailed discussion of outcomes, as the diagnosis in the literature may not be consistent and some might have been inaccurately diagnosed, and the outcomes are often mixed with those of PIN palsy or even under a different eponym. Interested readers should refer to the literature where authors have presented detailed data. I operate on patients with RTS only when the diagnosis is confirmative, presentation is typical and sufficient length of conservative treatment and waiting time have passed following diagnosis. I have operated on, on average, one patient every several years with a career total of between five and 10. These patients had pain relief, two only incomplete, but all felt surgery helpful. I have no regret in offering surgeries and consider that RTS does exist and surgery is an option after 6 months of conservative treatment. I operated on the patient with RTS, shown in Figures 3 to 6, in February this year. She had complete pain relief and entire recovery of hand function 2 weeks after surgery. According to personal communication, Dr Michel Boeckstyns has operated on 10 to 20 patients, and roughly 40% did not have complete pain relief. Dr Roy Meals has had a similar experience: infrequently diagnosed, rarely operated, not always complete relief of pain. I chose to present my personal account and those of a few senior surgeons, based on a career-long experience (over 30–35 years) to reflect the rarity of this disease and general impression on the prognosis.

Summary

Inconsistencies exist regarding definitions of RTS and the radial tunnel; the classically defined radial tunnel does not cover all potential sites of compression causing RTS.

1. We should adopt the definition that radial tunnel is a longitudinal spiral space starting at the radiocapitellar joint, surrounding the path of the PIN, covered by BR, ECRL, ECRB and the supinator, and ending at the distal border of the supinator. The definition covers all potential sites of compression and better accommodates the possible pathologies.
2. The distal border of the radial tunnel is better considered to be at the distal border of the supinator.
3. The RTS and PIN compression are two entities with distinct clinical presentations but with identical potential sites of nerve interference. The causes of RTS are restraint, interference or intermittent compression to the PIN. The pathophysiology of RTS is intermittent neurapraxia.
4. Surgical approaches and treatments of RTS and PIN compression are largely identical, with exploration and release at all these potential sites of restraint or compression, such as the BR, ECRL and ECRB crossing the radial tunnel, the leash of Henry, the arcade of Frohse and the supinator muscle for any cases, if the aetiology is idiopathic.

Concluding remarks

Because RTS and PIN compression are infrequently seen, many practitioners rely on books or review articles to guide their practice. Unfortunately, the descriptions are not always clear or agree with each other. Some texts are disappointing and may confuse practitioners. To end inconsistencies, a uniformed definition of the radial tunnel is desirable. Such a definition is presented here for future discussion, use or modification.

Very few clinicians have the opportunity of personally operating on more than a few patients with confirmed RTS (not PIN compression or palsy). Most of us are not experienced specialists for this disease (Tang, 2009). I am unsure how many can be called experts, so naturally it is a challenge to write on the disorder in texts. When RTS and PIN compression are discussed or presented, clear distinctions between the two entities should be offered, which is not always the case.

Terminologies to be used are vital: PIN compression equates PIN palsy and PIN paralysis; but PIN compression equates with supinator syndrome when only the supinator compresses the PIN. PIN syndrome, a loosely defined term, has no specific meaning and therefore confuses matters. Hence it should be discarded in favour of calling the condition directly what it is: PIN palsy or paralysis.

Suggestions and perspectives

As a future perspective, in order to avoid confusing nuance and superfluous acronyms, the currently designated RTS would be preferentially called a mild (caused by neurapraxia leading to pain), and PIN compression a severe (caused by definitive compression leading to PIN palsy) type of RTS, which avoids considering them as two diseases. By considering the two entities as mild and severe forms of one disease, the two forms maintain their distinctions but become much less confusing to authors, readers, and practitioners. This is my thought and suggestion for simplification and clarification, which will require revising the disease nomenclature. This change is simple, but it will make both easy to understand.

Acknowledgment I consulted Dr Roy Meals regarding his preference of terminology for the deep motor branch of the radial nerve versus the PIN. I consulted Drs Michel Boeckstyns and Roy Meals for the operative findings and outcomes of their patients with RTS. Their findings are combined with my observations and led to the suggestions in this text.

References

Englert HM. Partial fascicular median-nerve atrophy of unknown region. Handchirurgie. 1976, 8: 61–2.

Hulkkonen S, Lampainen K, Auvinen J, Miettunen J, Karppinen J, Ryhänen J. Incidence and operations of median, ulnar and radial entrapment neuropathies in Finland: a nationwide register study. J Hand Surg Eur. 2020, 45: 226–30.

Lawrence T, Mobbs P, Fortems Y, Stanley JK. Radial tunnel syndrome. A retrospective review of 30 decompressions of the radial nerve. J Hand Surg Br. 1995, 20: 454–9.

Lister GD, Belsole RB, Kleinert HE. The radial tunnel syndrome. J Hand Surg. 1979, 4: 52–9.

McGraw E. Isolated spontaneous posterior interosseous nerve palsy: a review of aetiology and management. J Hand Surg Eur. 2019, 44: 310–6.

Moradi A, Ebrahimzadeh MH, Jupiter JB. Radial tunnel syndrome, diagnostic and treatment dilemma. Arch Bone Jt Surg. 2015, 3: 156–62.

Portilla Molina AE, Bour C, Oberlin C, Nzeusseu A, Vanwijck R. The posterior interosseous nerve and the radial tunnel syndrome: an anatomical study. Int Orthop. 1998, 22: 102–6.

Rekant MS, Wilson MS, Nelson C. Surgery management of compression neuropathies of the elbow. In: Skirven TM, Osterman AL, Fedorczyk JM et al. (Eds.) *Rehabilitation of the hand and upper extremity*, 7th Edn. Philadelphia, Elsevier Inc., 2020. pp. 745–9.

Spinner M. The arcade of Frohse and its relationship to the posterior interosseous nerve entrapment paralysis. J Bone Joint Surg Br. 1968, 50: 809–12.

Standring S. *Gray's anatomy*. 41st Edn. Elsevier Inc., Philadelphia, 2015.

Tang 889

Tang JB. Re: Levels of experience of surgeons in clinical studies. J Hand Surg Eur. 2009, 34: 137–8.
Thomas SJ, Yakin DE, Parry BR, Lubahn JD. The anatomical relationship between the posterior interosseous nerve and the supinator muscle. J Hand Surg Am. 2000, 25: 936–41.
Thompson JE. Anatomical methods of approach in operation on the long bones of the extremities. Ann Surg. 1918, 68: 309–29.
Waljee JF, Fujihara Y, Chung KC. Radial nerve decompression. In: Chung KC (Ed.) *Hand and wrist surgery*, 3rd Edn. Philadelphia, Elsevier Inc. 2018: 510–4.
Xiao TG, Cartwright MS. Ultrasound in the evaluation of radial neuropathies at the elbow. Front Neurol. 2019, 10: 216.

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ifsht International Federation of Societies for Hand Therapy www.ifsht.org

IFSHT News May 2021

12th IFSHT Congress LONDON 2022

The British Society for Surgery of the Hand and the British Association for Hand Therapy are proud to host the joint congress of the International Federation of Societies for Surgery of the Hand and International Federation of Societies for Hand Therapy in London 2022. We are organising this with the IFSSH and the IFSHT in collaboration with the Federation of European Societies for Surgery of the Hand.

Current major topics in hand surgery and therapy, as well as some new ones, will be included in the scientific program, A themed instructional course will run through the meeting with the topic, "Tendon problems in the hand and wrist". There will be interactive case-based debates on contentious issues, workshops and invited lectures from renowned international experts. This will be an unrivalled opportunity for exchange of ideas between hand surgeons, therapists, trainees and students, with sessions open to both surgeons and therapists. ***Call for abstracts opening soon***.

Therapists are requested to register interest in attending the Joint Triennial Congress in London, 6 – 10 June 2022. ***Register your interest on the congress website*** https://www.ifssh-ifsht2022.co.uk/

IFSHT/IFSSH Triennial Congress Grant - London 2022

This grant is designated to provide partial financial support for therapists to attend the IFSHT Triennial Congress. Any qualified occupational or physical therapist with an interest in the area of hand therapy may apply. Preference will be given to applicants who are invited speakers and from IFSHT member countries with limited resources.

Applications for the IFSHT/IFSSH Triennial Congress Grant with criteria and procedure for applying, are available at IFSHT/IFSSH Triennial Congress Grant - London 2022 - IFSHT. The ***Application deadline is 6 October 2021***.

IFSHT Awards - London 2022

Lifetime Achievement Award	Cristina Alegri Innovation Award
Please consider nominating deserving colleagues for the prestigious **IFSHT Lifetime Achievement Award.** This award recognizes therapists who have made international contributions to the development of hand therapy.	The **IFSHT Cristina Alegri Innovation Award** is also open for nominations. It recognizes a unique innovation related to hand therapy practice.

Nomination forms for both awards are available on the IFSHT website at Awards, Grants and Donations - IFSHT.
The Nomination deadline is 31 December 2021.

REACH

The IFSHT Publications Committee is excited to introduce the new quarterly newsletter named REACH, coming to you soon.

This new publication aims to collate Research, Education, Achievements and Clinician in Hand and upper limb therapy around the world.

Early controlled active motion in two replanted hands

JOURNAL OF HAND THERAPY 2020;33(3):426-434.

What were your main reasons for writing this article?

There were two reasons. Firstly, we were excited about the excellent progress of our patients who had total hand replantations at the distal forearm level and we wanted to share their treatment and outcome with the hand therapy community.

Secondly, although the literature advocates only passive finger motion until three or four weeks after replantation[1], we advocate early controlled active motion (ECAM) from day six post-replantation. By shortening the radius and ulna bones by about two centimetres, prior to fixation, the tension on the new soft tissue repairs is eliminated. This would allow safer ECAM (without the same risk of rupture e.g.: in an isolated tendon repair). Early mobilisation without tension would also result in fewer adhesions and better overall active movement of the fingers (Figures 1-3)

Fig 1-3: Radiographs of the first patient, before surgery, after bone shortening and fixation, and functional outcome.

What are the most important/interesting results/conclusions of your article?

Both of our patients achieved excellent active ROM (mean total active motion of fingers was 92%) without any secondary procedures such as a tenolysis, which often needs to be done [2–4]. A search of the literature revealed no information on the effect of the bone shortening on muscle power nor the advantage of reducing tension on the tendon repairs. Also, no information could be found specifically on how bone shortening would influence rehabilitation.

Fig 4: The second patient was fitted with a custom-moulded lightweight wrist extension/thumb opposition orthosis 7 weeks after replantation.

Fig 5: Same patient participating in an occupation-based strengthening activity one year after surgery (Note the excellent finger flexion of replanted left hand).

What should all hand surgeons/hand therapists reading your article understand about the findings of your research?

Despite some advocating early motion after replantation [5,6,] several fairly recently published rehabilitation protocols for upper limb replantation delay the initiation of active motion until two to four weeks after surgery[1,2,7-10]. A replantation study which compared outcomes having initiated earlier active motion (within the first two weeks) versus later (after four weeks) found those in the earlier group had better total active motion (TAM) of 165^0 (versus 121^0 in the delayed group) [11]. Intervention in our two clients deviated from current protocols by initiating gentle controlled active motion within the first six days after repair and our mean TAM of the fingers at discharge was 248^0.

Our article details the therapeutic intervention from day six to one year after replantation and it describes the functional outcome. In addition to achieving excellent active ROM, both had partial intrinsic return, an average grip strength of 15.5kg (first patient: 38% of the uninjured hand); both had return of protective sensation on most

finger tips; the average time for completion of the Nine Hole Peg Test was 34 seconds and the mean DASH scores: 26. Both returned to work, one to a lighter occupation and the other to his pre-injury occupation. The therapeutic contributors to success were highlighted in the article as ECAM, the fitting of various custom-moulded orthoses and occupation-based hand therapy.

Will you be conducting further research in this area? If so, what will it entail?

We are convinced that ECAM after bone shortening in replanted forearms is worthy of consideration. However, after these biomechanical findings, we were interested to explore the bigger picture. We have embarked on researching the lived experiences of the violent incident of an amputation and its psychosocial sequelae. A distinction is made between accidental amputation (first patient), and an act of interpersonal violence (second patient). The experience of listening to and caring for a victim of planned violence troubled the first author for some time and this led her along the path of qualitative phenomenology.

This included the relationship with the health professionals and work colleagues, how to make sense of this violent hand amputation and the surgical replantation, the impact it had on occupational adaptation, as well as reflecting on the therapeutic intervention. We hope to publish a paper soon entitled: "Violent Hand Amputation and Replantation in the South African context".

Since submitting your article have any new insights/ideas come to mind?

From a therapeutic perspective, we agree with Noh and Hacquebord[12], who claim that there has not been much advancement in the field of replantation in the last several decades. In fact, many post-operative protocols for upper limb replantations are based on the 1989 article by Silverman and colleagues[10,13]. It must be highlighted that Silverman's protocol was intended for digital replantations, yet it has been applied to all levels, including major replantations. More studies on the therapeutic management of replantations are needed[10], especially those proximal to the wrist.

Take home messages?

Further research is needed to confirm if bone shortening in hand replantations reduces tendon repair tension, allowing for early controlled active motion, thus leading to better outcomes. In addition, hand therapists are reminded of the value of holistic, occupation-based hand-therapy and custom-moulded orthoses. Finally, the psychological and emotional aspect of the patient who has suffered a severe traumatic incident of different circumstances must be part of the rehabilitation process.

References

1. Jones NF, Chang J, Kashani P. The Surgical and Rehabilitative Aspects of Replantation and Revascularization of the Hand. In: Rehabilitation of the Hand and Upper Extremity, 2-Volume Set. ; 2011:1252-1271.
2. Ezerins SA, Harm CJ, Kempton SJ, Salyapongse AN. Rehabilitation Following Replantation in the Upper Extremity. In: Salyapongse AN, Poore SO, Afifi AM, Bentz ML, eds. Extremity Replantation. Boston, MA: Springer US; 2015:191-206. doi:10.1007/978-1-4899-7516-4_15
3. Sugun TS, Ozaksar K, Ada S, et al. Long-term results of major upper extremity replantations. Demirhan M, ed. Acta Orthop Traumatol Turc. 2009;43(3):206-213. doi:10.3944/AOTT.2009.206
4. Yaffe B, Hutt D, Yaniv Y, Engel J. Major Upper Extremity Replantation. J Reconstr Microsurg. 2006;22(04):63-67. doi:10.1055/s-2006-949040
5. Papanastasiou S. Rehabilitation of the replanted upper extremity. Plast Reconstr Surg. 2002;109(3):978-981. doi:DOI: 10.1097/00006534-200203000-00027
6. Lin PY, Jeng SF, Lin TS, Hsieh CH. Upper limb replantation. Trauma. 2012;14(4):313-326. doi:10.1177/1460408612440648
7. Tang JB, Amadio PC, Guimberteau JC, Chang J. Tendon Surgery of the Hand E-Book. 1 Har/Psc. Philadelphia, PA: Saunders; 2012.
8. Mahajan RK, Mittal S. Functional outcome of patients undergoing replantation of hand at wrist level-7 year experience. Indian J Plast Surg. 2013;46(3):555-560. doi:10.4103/0970-0358.122018
9. Marques M, Correia-Sá I, Festas MJ, et al. Six years of follow-up after bilateral hand replantation. Chir Main. 2013;32(4):226-234. doi:10.1016/j.main.2013.06.005
10. Walsh JM, Chee N. Replantation. In: Saunders R, Astifidis R, Burke SL, Higgins J, McClinton MA, eds. Hand and Upper Extremity Rehabilitation: A Practical Guide. 4th ed. Elsevier Health Sciences; 2016:431-439.
11. Ma S, McKnight LL, Thoma A. Replantation. In: Bhandari M, Ghandi R, Petrisor BA, Swiontkowski M, eds. Evidence-Based Orthopedics. Chichester: Wiley-Blackwell; 2012:1072-1079.
12. Noh K, Hacquebord JH. Review Open Access Plastic and Aesthetic Research 50+ years of replantation surgery experience: are we progressing or regressing? Plast Aesthet Res. 2020;7:50. doi:10.20517/2347-9264.2020.49
13. Silverman PMN, Willette-Green V, Petrilli J. Early protective motion in digital revascularization and replantation. J Hand Ther. 1989;2(2):84-101.

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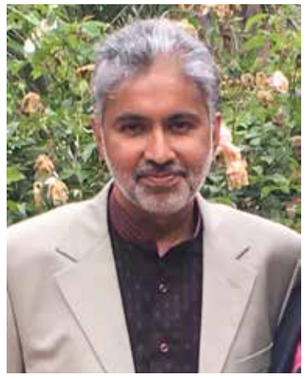

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Member Society

SOUTH AFRICAN SOCIETY FOR SURGERY OF THE HAND (SASSH)

When asking around about the year in our society membership, a friend quipped in jest "once upon a time there was a virus.... the end". The common thread of the year that wasn't, continues. Reflecting on practice, knowledge and interaction during the Covid-19 era may assist us in improving our approach to the advancement of our specialty.

Almost universally our surgeons were profoundly affected with the restrictions put in place by the Covid-19 lockdowns. Caseloads were decreased to less than half. Hospital groups and societies navigated what were turbid waters in formulating a work strategy that made sense at the time and maintained the safety of our patients and fellow practitioners. It brought to the fore that an evidence base is merely a guideline and not an absolute. Thankfully, by the latter half of the year most surgeries were now taking place and the majority of practices had recovered from an emotional and financial strain. As a smaller society we were guided by the recommendations of larger groups within the South African medical space.

Since our last physical meeting at the Cape Town Refresher Course on Wrist pathology in February 2020, where Gregory Packer and Mel Rosenwasser provided lively debate and discussions, knowledge transference has been exclusively via the web.

Webinars and courses, sponsored and society driven have given smaller societies such as ours access to the world's leaders in hand research. At the outset of the pandemic, these learning opportunities were met with great enthusiasm, as the convenience of learning from the comfort of your own space made up for loss of physical interaction. However, the sheer number of events has resulted in members being highly selective about what they attend. Many have iterated to me that longer formats of courses held over more than a few hours quickly dissolve into insignificance as the ability to maintain focus for such periods in isolation is task beyond many of us, myself included. Shorter, hour or two long focused sessions have definitely garnered the greatest audiences.

Having cancelled our August 2020 national society meeting, it was decided to host a webinar refresher course focusing on congenital hand surgery on 28 February 2021. Through the magnanimous support of Drs. Kerby Oberg, Scott Kozin and Neil Jones, a whirlwind tour of common congenital hand condition practicalities was provided. The event was well attended and a reminder that alternative strategies can be successfully implemented adapting to future needs; considering that the corona virus has led to some irrevocable changes.

Due to travel restrictions, Dr Pieter Jordaan has become the first member of our society to sit the FESSH European Hand Diploma examination online. We are pleased to note that he has passed the first component of the exam and wish him all the success with the online oral component in May.

Despite all the learning opportunities online portals have opened up, one overriding sentiment has been undoubtedly expressed by members; the desire to have physical meetings and face to face interactions with fellow practitioners and the trade. Already our August National Meeting to be held in Cape Town may have to be delayed as both trade sponsorship, international travel restrictions and local regulations may prevent delegates from participating in person. Our role in education and advancing hand surgery will be tested in the near future. A challenge to look forward to.

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BRITISH SOCIETY FOR SURGERY OF THE HAND (BSSH)

The BSSH had, like everyone in the world, a rather unsettling time during the Covid-19 pandemic. Many of our members had to change their job roles in order to support the General Hospital duties. Elective operating stopped for several months. We are now faced with a huge backlog which will engage us for many years to come.

Our Society was keen to promote the safe use of steroid injections as a way of maintaining patients in comfort when they could not have surgery. This led to a contribution to various national guidelines and a publication in Bone and Joint Journal (BJJ) Open ("Covid-19- a rethink of corticosteroid injection" https://pubmed.ncbi.nlm.nih.gov/33225297/).

A large number of BSSH members contributed to the Corona Hands project which showed that mortality and pulmonary complications were extremely low for hand surgery patients during the pandemic https://pubmed.ncbi.nlm.nih.gov/32479829/.In general there was a swing towards virtual clinics and WALANT operating lists.

For many years the BSSH have shared a secretariat with the British Association of Plastic, Reconstructive and Aesthetic Surgeons. But as each organisation grew and flourished, the time came to separate. During 2020 our Society seamlessly and successfully separated from BAPRAS.

We now have our own highly motivated and competent Secretariat who plays an active role in our daily work and future development. We have invested in a high-end platform Events Air which has been used for virtual meetings in lieu of the three cancelled scientific meetings (Spring 2020, Autumn 2020 and now Spring 2021).

During 2020, we also launched a Code of Conduct and also our new lapel badge:

The Journal of Hand Surgery (European) has launched a new Journal Club and we welcome anyone to join it. The Committee of Management of the JHSE, very ably led by David Shewring for the past few years, will now be led by Grey Giddins.

The 2020 President, David Warwick has now passed the chair to the 2021 President, Sue Fullilove.

The BSSH is honoured to be invited as the Guest Society to the Indian Society for Surgery of the Hand in August 2021 and the American Society for Surgery of the Hand in autumn 2021 (if Covid-19, vaccinations and travel rules allow….).

In the autumn, Oxford will be hosting the virtual International Symposium on Dupuytren's Disease, in association with the International Dupuytren Society and the International Plastic Surgery Society (http://www.dupuytrensymposium.org/). Also in Oxford in September we will have, hopefully face to face at long last, the BSSH Autumn Scientific meeting hosted by our new President, Sue Fullilove.

We have a very strong Overseas Committee, led by Jonathan Jones. Most of the travel has been curtailed by Covid-19 although a successful trip to Abuja in Nigeria in February 2020 led to a Memorandum of Understanding with the West African College of Surgeons to support education.

We said goodbye to Professor John Stanley this year, which has a separate obituary in this Ezine. Led by our archivist Steve Hodgson and John's colleagues in Manchester, the BSSH held a wonderful on-line valedictory to celebrate John's unique contribution. He was a special man whom we will greatly miss.

Finally, the BSSH look forward to hosting the IFSSH Congress in London 2022 where, after missing so much of the personal interaction which we all crave, we can get together again as an international hand surgery community.

David Warwick
BSSH Immediate Past President
Executive Committee member, IFSSH

SPANISH SOCIETY FOR SURGERY OF THE HAND (SECMA)

On 11 March 2020 the World Health Organization (WHO) declared the new coronavirus disease (Covid-19) a global pandemic, and by May 2020 Covid-19 has spread globally [1]. Spain has been one of the countries with the highest number of cases and Madrid one of the most affected regions. Madrid had 62989 confirmed cases and 8420 deceased at the end of the first wave. (Spain is currently in its 4th wave).

Hand Surgeons had to take an intensive Internal Medicine course at their hospitals and were then sent to treat patients affected by Covid-19 without PPE for coronavirus, ie. surgical masks, particulate filter respirators (such as P2 or N95), gloves, goggles, glasses, face shields, gowns and aprons.

The lack of protection along with the lack of information from the Government resulted in many members of our Society, even past presidents, getting infected. In Madrid all surgical activity was stopped on 13 March 2020. On that date the occupancy in some hospitals reached 202% and most of the hospitals were declared a "100% Covid-19 hospital", which meant no activity (medical or surgical) apart from the treatment of COVID-19 patients could be done.

On April 2020, most of the hand surgery services were not operational. The only published evidence during that time related to the mortality after surgery came from China [2]. The national health system did not recommend hand and upper extremity surgery due to a risk of 44.1% of being admitted to Intensive Care Unit (ICU) and a mortality rate of 20.5%. But it turned out that 100% of the patients included in that cohort developed the Covid-19 between 2 and 6 days after admission, which meant that they were already infected when they underwent surgery.

However, one year later, research by members of our Spanish Society has demonstrated that there was a 100% chance of surviving 76 days or more in healthy people who underwent hand surgery who were infected by the SARS-CoV-2 virus [3]. Presently all hand services are progressing again, but following established recommendations about protection for Covid-19 infection.

Many things have changed since then. Our National Meeting was cancelled in 2021 and postponed to 2022. All the meetings of the Board of the Spanish Society had to be done online; even the celebration of the national assembly of the Society. Voting and election of the new Board and new President Elected will be done online in May 2021.

Finally, in spite of the Covid-19 pandemic, SECMA has developed a new program directed for Orthopedic and Plastic Surgeons to obtain the Diploma in Hand Surgery of the Board of SECMA (DECIM). This 18-month program, which has been accredited by UEMS (The European Union of Medical Specialists), was implemented by the current President Kim Casañas of the SECMA and his board. The Board of the Spanish Society wants to thank the technical secretary of ATENTA for its contribution in the development of the DECIM.

President of SECMA. Dr. Kim Casañas

President Elected of SECMA. Dr. Adolfo Galán

REFERENCES

1. Coronavirus disease (COVID-19) Situation Report–106 WHO. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200505covid-19-sitrep-106.pdf?sfvrsn=47090f63_2. Accessed 25 May 2020.
2. Lei S, Jiang F, Su W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. E Clinical Medicine. 2020; 000:100331. doi:10.1016/j.eclinm.2020.100331
3. Corella F, Rosales RS, Guzman D, Cañones M, Larrainzar-Garijo R. Survival analysis and influence of the surgical aggression of a cohort of orthopedic and trauma patients in a non-controlled spread COVID-19 scenario. BMC Musculoskelet Disord. Forthcoming 2021.

Roberto S. Rosales
International Delegate of SECMA

THE SWISS SOCIETY FOR SURGERY OF THE HAND (SGH-SSCM)

Schweizerische Gesellschaft für Handchirurgie **SGH**
Société Suisse de Chirurgie de la Main **SSCM**
Società Svizzera di Chirurgia della Mano **SSCM**

Time for Hand facts

In 2015, the Swiss Society for Surgery of the Hand managed to establish a fully-fledged national medical specialist in hand surgery. Since then, an average of 10 doctors has received their medical specialist degrees each year, and the proportion of women is 50%. Continuing education and training is strictly regulated and controlled, and the training centres are visited regularly. Most training centres have joined together to form four networks so far, in which candidates are trained for the Hand Surgery Specialist title. Passing the European Board of Hand Surgery examination is mandatory and unique in Europe.

However, recognition only of hand surgery is not enough. For example, there is no university representation of the subject in the form of Hand Surgery chairs at universities. In addition, the remuneration of hand surgery has been drastically reduced by political intervention. The pay scales in particular, are so low that the costs of routine outpatient procedures can barely be covered.
The approximately 190 members of the Swiss Society for Surgery of the Hand (SGH) reacted to this and started an appreciation campaign for their profession in 2019. They wanted to ensure that the general appreciation of hand surgery increases, and that the indifference to pay grades is stopped.

Despite the corona pandemic, we have achieved much in 2020 with this campaign. Hand surgeons and their needs are being noticed. The campaign is being led by volunteer members of the Society and an external consultant of communication. Public relations, lobbying, as well as business issues are being dealt with on an on-going basis.

"Handfacts" is the name of our campaign. At the last general meeting, the members decided by a large majority to extend the campaign until the end of 2024 and are prepared to finance the costs with a special contribution. Accordingly, we still have a lot planned and will continue to fight to ensure that hand surgery finally receives the status that it deserves in Switzerland, and does justice to our fascinating and demanding occupation. For information, readers are invited to visit the website: www.handfacts.ch.

Apart from this important activity, a compliment goes to the leaders of the Swiss Hand Surgery community, who had to change the 1 to 4 September 2020 FESSH Congress in Basel to a virtual congress.

With the help of many European colleagues and the FESSH management office, the FESSH/EFSHT Online week was a great success. Due to the restrictions caused by the Covid-19 pandemic, like everywhere, we realise the lack of social interaction and hope to find a new norm for the future.

Urs Hug, Stephan Schindele, Esther Vögelin

The happy council of the Swiss Society for Surgery of the Hand

SINGAPORE SOCIETY FOR SURGERY OF THE HAND

How Hand Surgery in Singapore is coping with the Covid-19 pandemic 1 year on.

The first case of Covid-19 in Singapore was confirmed on 23 January 2020. Initial transmission remained low but from late March onwards, multiple dormitories with foreign workers developed into clusters, which led to a sharp increase in the number of cases in the subsequent weeks. This led to the implementation of a "circuit breaker" from 7 April to 2 June 2020, which was a lockdown order where only essential services remained open. Wearing of masks was also made compulsory when not at home, and a nationwide contact tracing program ("TraceTogether") was introduced. Eventually, after the situation had stabilized and the daily number of new community cases started to decrease, activities were gradually resumed in three phases1. Workplaces and schools were opened in Phase 1, while social gatherings and religious activities resumed in Phase 2 and increased in capacity in Phase 3 (Figure 1). On 28 December 2020, the Multi-Ministry Taskforce commenced Phase 3 of re-opening Singapore.

Prevalence in Singapore

The prevalence of Covid-19 in Singapore lies at 1.06% with 60,381 cases as of 31 March 2021. This is associated with a mortality rate of 0.0005% (n=30), in comparison to the global death rate of 1.71%2. Possible reasons for this include the infection demographics as majority of the infections have occurred amongst migrant worker population, most of whom belong to the 20 – 30-year-old age bracket. As age is a risk factor for increased severity of illness3, patients in this younger age group are less likely to suffer mortality as a result of contracting the disease.

Of note, there was no peak in cases after the reopening of activities, and the prevalence remained near the

linear trend line. This was thought to be attributable to the timing and strictness of how the measures were implemented as most of the measures taken across different countries were very similar4.

Situation in Singapore

Currently, there have been no further lockdowns since the reopening of activities from June 2020. Extensive testing of migrant workers was carried out via both polymerase chain reaction (PCR) and serology testing. This was reflected in a low ratio of PCR-positive to serology-positive results of 1.8. Routine Rostered Testing (RRT) is being continued every 14 days for all susceptible workers and the number of new infections has remained low, with no new cases detected in the dormitories for many days over the past six months5.

All other industries have resumed normal levels of business activity. However, wearing of masks remains compulsory and safe distancing measures such as restrictions on gatherings of large groups are still in place. Larger scale events such as weddings and concerts are allowed to take place with a limited number of attendees, although the capacity can be increased with the implementation of pre-event testing.

Current Situation of Hand Surgery in Singapore

Staff Segregation and Deployment

Previously, staff was distributed between the various hospitals in Singapore with minimal to no cross-coverage to reduce the risk of inter-hospital infection by healthcare staff. These restrictions of cross-institutional movement amongst healthcare workers were lifted on 17 July 2020.

Staff within the department was also assigned to assist at hospital managed fever screening stations and mobile medical teams at the dormitories and community isolation facilities, but this was stopped in July 2020 when the country's situation had come under control after regular systematic testing of at-risk migrant workers. Medical teams were no longer required and staff resumed their normal duties in the hospital thereafter.

Protective precautions in high-risk areas such as the Emergency Department and Intensive Care Units are still in place. This entails use of full Personal Protective Equipment (PPE) consisting of a surgical gown, gloves, mask and goggles or face shield.

Elective Surgery

During the peak of the Covid-19 pandemic, all non-urgent elective surgeries requiring overnight hospitalisation were postponed. After the circuit breaker ended in June 2020, these were resumed in a gradual manner and are currently operating at pre-Covid capacity in both the private and public healthcare sectors. If there is any possibility of exposure to Covid-19, swabs are taken and the surgery postponed for the mandatory 14-day non-contact isolation period pending confirmatory negative swabs post-isolation.

Clinics

Clinic sessions have also returned to pre-Covid levels of activity, with basic screening done at the entrance to ensure patients do not have signs or symptoms of Covid-19. Previous non-urgent conditions that were rescheduled have since been able to attend the clinic and their treatment plans administered accordingly.

Patients who stay in dormitories would have undergone RRT and their Covid-19 status can be checked on the national system, whereupon they can be attended to in the usual clinic rooms.

Vaccination

The Pfizer-BioNTech Covid-19 vaccine was approved for use in Singapore by the Health Sciences Authority under the Pandemic Special Access Route on 14 December 20206, while the Moderna Covid-19 vaccine was also approved on 3 February 20217. Vaccination of the population commenced on 30 December 2020. Priority has been given to groups at higher risk such as healthcare and frontline workers, as well as more vulnerable groups such as the elderly.

At present, Singapore has administered more than 1,318,912 doses of the vaccine8, which is approximately equivalent to 22.5 doses administered per hundred people. Out of this, at least 80% of healthcare workers have received their first dose of the vaccine9, while more than 55% of seniors have received their first vaccination or made appointments to do so10. Surveys conducted have shown that more than 95% of healthcare workers in the Asia-Pacific region are willing to receive the Covid-19 vaccine; perception of the pandemic as severe, low risk of harm from the vaccine and high pro-socialness index were the main motivations11. These are encouraging findings that predict a good response to the vaccination program.

Future Plans

Currently, all travelers entering Singapore must serve a 14-day mandatory Stay Home Notice (SHN). However, with the progress of the vaccination program, travel arrangements with other countries are currently under discussion and may potentially be established in the second half of 2021 without the requirement of SHN12.

With the commencement of such travel bubbles, there is a high chance that overseas conferences and courses may resume as normal. This would have a positive implication given that 2 big international Hand Surgery related conferences, the Combined 13th Congress for Asian-Pacific Federation of Societies for Surgery of the Hand and 8th Congress for the Asia Pacific Wrist Association is planned to be held in Singapore from 31

May to 3 June 2023.

Conclusion

Although the pandemic is still ongoing, the measures taken by the Singapore government to date have been reasonably effective in preventing widespread transmission of Covid-19. However, continued vigilance and good participation in the vaccination program are still necessary to ensure good control over the situation and avoid a recurrence.

References

1. Health SMO. End of circuit breaker, phased approach to resuming activities safely 2020. Accessed April 2021 from https://www.moh.gov.sg/news-highlights/details/end-of-circuit-breaker-phased-approachto-resuming-activities-safely
2. World Health Organization. Weekly epidemiological update on Covid-19 – 30 March 2021.
3. Vrotsou K, Rotaeche R, Mateo-Abad M, Machón M, Vergara I. Variables associated with Covid-19 severity: an observational study of non-paediatric confirmed cases from the general population of the Basque Country, Spain. BMJ Open. 2021;11(4):e049066. Published 2021 Apr 1. doi:10.1136/bmjopen-2021-049066
4. Nejadghaderi SA, Saghazadeh A, Rezaei N. Health Care Policies and Covid-19 Prevalence: Is There Any Association? [published online ahead of print, 2021 Mar 9]. Int J Health Serv. 2021;20731421993940
5. Ministry of Health Singapore. Accessed April 2021 from https://www.moh.gov.sg/news-highlights/details/measures-to-contain-the-covid-19-outbreak-in-migrant-worker-dormitories
6. Health Sciences Authority Press Release 14 December 2020. HSA Grants Interim Authorisation for First Covid-19 Vaccine in Singapore.
7. The Straits Times. Accessed April 2021 from https://www.straitstimes.com/singapore/health/spore-approves-modernas-covid-19-vaccine-first-shipment-to-arrive-around-march
8. The Straits Times. Accessed April 2021 from https://www.straitstimes.com/multimedia/graphics/2021/02/covid-vaccine-rollout/index.html
9. The Straits Times. Accessed April 2021 from https://www.straitstimes.com/singapore/politics/budget-debate-more-than-350000-singapore-residents-have-received-their-first
10. Progress Update and Expansion of Vaccination Programme. Accessed April 2021 from https://www.gov.sg/article/progress-update-and-expansion-of-vaccination-programme
11. Chew NWS, Cheong C, Kong G, et al. An Asia-Pacific study on healthcare worker's perception and willingness to receive COVID-19 vaccination [published online ahead of print, 2021 Mar 26]. Int J Infect Dis. 2021;S1201-9712(21)00287-3.
12. The Straits Times. Accessed April 2021 from https://www.straitstimes.com/business/economy/personal-travel-will-return-from-2nd-half-of-2021-iata-chief

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MEXICAN SOCIETY FOR SURGERY OF THE HAND

Solitude is the profoundest fact of the human condition. Man is the only being who knows he is alone, and the only one who seeks out another. His nature- if that word can be used in reference to man, is such that he has 'invented' himself by saying 'no' to nature.

The consequence being his longing to realize himself in another. Man is nostalgic and searches for communion. Therefore, when he is aware of himself he is aware of his lack of another, that is, of his solitude.

Paz,Octavio. 'The Labyrinth of Solitude'. N.Y.: Grove Press, 1961. p. 195

Discussing the ways in which societies have faced - and continue to face - the effects of this pandemic day by day is like entering a labyrinth. Considering this, and reflecting on the words of Octavio Paz, it has made us aware of each one of ourselves, and therefore has made us also aware of those that we miss now.

This period has shown us similarities and differences in the behavior and responsibility of human groups of different backgrounds and also between each individual regardless of their geographical location.

On many other occasions and through catastrophes we have been able to see how the human resolve far surpasses politics and adversity; this pandemic has not been an exception. Amongst our societies and colleagues we honor those who have left us. It hurts deeply to think about the loss of many lives of health professionals that could perhaps have been avoided. We will remember them forever.

The Mexican Society for Surgery of the Hand, like the vast majority of international societies, maintained the dissemination and continual education of our colleagues as well as that of hand surgeons in training. This has occurred through webinars in collaboration with hand surgery world leaders.

In association with the main schools of hand surgery in our country, we have also invited international and national professors to contribute (through virtual participation), reviewing various topics twice a week in an interactive way with the hand surgeons in training. This experience shared on this professional journey has enriched each participant enormously.

We understand the dizzying labyrinth in which we find ourselves at this moment. We hope that each one of the hand surgeons in the world will find a way to reinvent communication and interaction, learning, and fraternity involvement, as well as the reunion of individuals as social beings.

VENEZUELAN SOCIETY FOR SURGERY OF THE HAND AND UPPER LIMB RECONSTRUCTION

In December 2019, in Wuhan (China), the first cases of Covid-19 were reported. This SARS-CoV-2 virus rapidly spread to most countries in the world. The first case reported in Latin America was in Brazil in February 2020. A pandemic was declared by the World Health Organization in March 2020 and Venezuela did not escape this reality, with all work activities and daily life being affected to various degrees.

To protect patients and health personnel, the Venezuelan Society for Surgery of the Hand and Upper Limb Reconstruction began to comply with national and international protocols for the prevention of the disease.

Although hand surgery patients may not be regarded as first line patients in this pandemic, hands and upper limbs present with emergencies due to traumatic incidences or chronic debilitating pathologies. Everyone needs their hands to survive, with or without being infected by the Covid-19 virus. Care must be guaranteed for all, which meant that the Society made the following recommendations when undertaking medical and/or surgical practices:

1. Comply with the protection protocols for all members of the medical-surgical team.
2. Optimize the capacity and treatment of emergency surgeries.
3. Use telemedicine for non-urgent cases that require medical attention.
4. Apply preventive measures during the external consultations.

This new reality altered our continuous medical education and it became a virtual modality. Our Society has participated in the 1st Andean Meeting of Hand Surgery in 2020 as well as in the “José María Rotella” Conference in 2020 and 2021, sponsored by the Latin American Federation of Surgery of the Hand.

Teachers and resident doctors of the University Hospital of Caracas - From left to right: Osledys Pérez, Jean Cordova, Jose Vicari, Zulay Garcia, Blanca Pérez, Andres Serrano, Luisana Villarroel & Rafael Portales.

Teachers and resident doctors of the Miguel Perez Carreño Hospital - From left to right: Daniel Ferrer, Alex Quintero, Daniel Belisario, Carolina Alvarez, Flor Boscán, José Vicari, Rodolfo Contreras, Lorenya Calzadillo, Williams Bernacchia, Abrahan Marsal and Biagio Sgro.

TURKISH HAND SOCIETY FOR SURGERY OF THE HAND AND UPPER EXTREMITY

The Covid-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, education and work.

The Turkish Hand Society for Surgery of the Hand and Upper Extremity was also affected by this process. The Board of Directors has not been able to hold its Ordinary General Assembly yet. This meeting should have been held in May 2020, but instead is planned to be held in May or June 2021.

The 17th National Hand and Upper Extremity Congress, first planned to be held in May 2018, was successfully held on 16 -20 November 2020 as a digital congress.

In the meantime, our society has continued its training meetings on zoom and organized 24 training sessions. The Prof. Dr. Ridvan Ege Basic Hand Surgery Course will also be held online this year on 22 -23 May 2021.

TSSH&UE
Turkish Society for Surgery of the Hand and Upper Extremity

Salvator Mundi - Saviour of the world

Many would diagnose this condition as a thumb duplication (Figure 1).

Within this image lies a remarkable tale. A 500 year old painting (66 x 45cm oil on panel) was brought to the United States for restoration. It was of some value because it was considered to have been painted by a pupil of Leonardo da Vinci or, if not, of a branch of that school. In 2005, Dianne Modestini at the request of art historian, Robert Simon, was responsible for the conservation and restoration of the painting. She was aided by her husband, Mario, born in Rome and appointed to be the conservator for the Samuel Kress collection at the Conservation Center of Fine arts at New York University. Regrettably he passed away in 2006.

Dianne Modestini painstakingly removed the layers of varnish and overpaint. Infrared reflectograms were used to see under the layers of paint, revealing a "pentimento", an alteration in the painting showing traces of previous work in which the artist had originally painted the thumb in a different position and then painted over it (Figure 1-The Pentimento).

It was unlikely that a copier would have painted a pentimento when copying the original. This finding, along with an unusual mixture of pigments to obtain a bone-black colour of a specific texture favoured by da Vinci, other details of technique and a careful study of the painting's history established its provenance as an original Leonardo da Vinci painting in 2011, one of 16 surviving Leonardo paintings (Figure 2-The Salvator Mundi)* .

It was last sold to the New Louvre in Abu Dhabi, apparently purchased by a Saudi Prince for over $400 million dollars.

*It should be noted that some dispute its provenance.

MICHAEL TONKIN
Emeritus Professor of
Hand Surgery
Past President: IFSSH

Pre-op planning for deformed bones using a polymer clay model

Correction of complex deformities of the bones and joints of the hand requires careful preparation. Ideally, preoperative preparation is an imitation of the actual operation on a deformed bone model. Modern technologies make it possible to obtain a three-dimensional copy of a deformed bone. Using the data of a CT and MRI, and a 3D printer, the surgeon can print an exact copy of the bone segment or the entire joint before the surgical procedure. If the model is solid, it will be possible to perform all the stages of the planned operation on it ie. sawing, drilling, elimination of the displacement, and trial fixation with K-wires, screws and plates.

A number of authors, using 3D printing, have published special guides for the installation of fixators during surgery and have even manufactured custom made implants. Unfortunately, these technologies require expensive equipment, special software, and special consumables. In this regard, these technologies are not readily available for many surgeons.
We propose a low-budget method for preoperative planning of surgical interventions on the hand using a polymer clay bone model.

Surgical Technique

An exact model of the deformed bone segment is prepared by using polymer clay. (Fig.1) The surgeon prepares the model ("like a sculptor") taking into account the data of the X-ray (CT scan, ideally). The clay is then heat treated to harden the model. The finished model is placed in a plastic container and filled with water and “cooked” in a microwave oven. If the model is small (phalanx of the finger, metacarpal bone), then the duration of "cooking" is about 5-7 minutes. Once the model has cooled it can be used to simulate the orthopedic procedure.

Fig. 1. Polymer clay set and the bone model of the deformed proximal phalanx.

Results

- This method was used in the treatment of 7 patients with various deformities of hand bones (malunion of phalanges and metacarpals - 4 patients, clinodactyly - 3 patients)
- Deformities of the phalanges and metacarpals were eliminated in all cases. Bone union was achieved in the correct position.

Fig. 2. A – Photo of bones models, made from polymer clay;

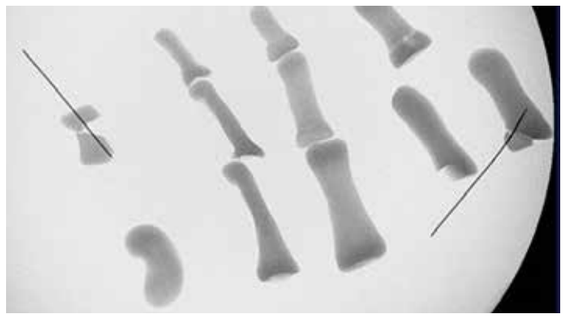

Fig. 2. B - X-ray of bone models.polymer clay;

Discussion

In the early 30s of the last century in Germany, Fifi Rebinder independently developed and released clay, which she named Fifi Mosaic. This clay was originally intended for making doll heads. In 1964, Rebinder sold the formula for this clay to Eberhard Faber, who turned it into the now world famous brand Fimo [1]. All polymer clays contain a base made of polyvinyl chloride (PVC) and one or more types of liquid plasticizers, which, after heating, become solid.

It is recommended to bake the clay models in the oven at a temperature of 100-130 degrees. Some designers consider it possible to “cook” small-sized products in a microwave oven [2]. We suggest placing the sculptured model in a plastic container, which is filled with water and then “cooked” for several minutes.

Polymer clay is widely used in arts and crafts for making souvenirs, jewelry, bijouterie, interior items and toys. It has found applications in biology and medicine. Polymer clay is used to make teaching aids for the study of anatomy - dummies of the brain, internal organs, bones and joints [3]. In the available literature, we did not find information on the use of polymer clay for preoperative planning of orthopedic operations.

Fig. 3. Young surgeons do trial assembling of the mini Ilizarov apparatus on the bone model from polymer clay.

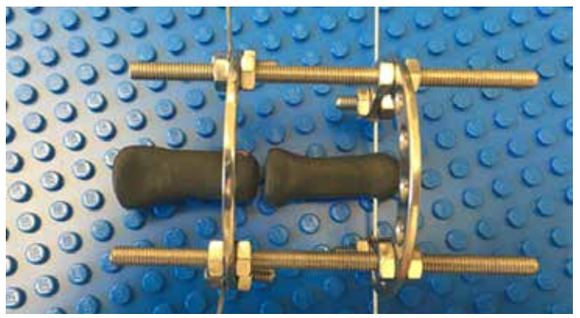

Fig. 3. A – ring version of the apparatus;

Fig. 3. B - rod version of the apparatus.

The proposed method of preoperative planning has a number of advantages.

- Polymer clay is available and inexpensive. 150 grams of material costs about $5. This volume is enough to make most of the hand bones.
- The process of making a bone segment takes only a few minutes and an additional 5-10 minutes for the “cooking”.
- No expensive hardware, software or consumables are required.

- The accuracy of the deformed bone copy is obviously not as accurate as a model obtained with 3D printing. However, when making small-sized bone models, small inaccuracies are not that critical.
- The density of the clay model matches the density of the bone, which allows simulating surgical intervention using routine instruments and fixators designed to work on bones. This is important for young surgeons who do not have sufficient manual skills.
- Polymer clay is X-ray opaque. This property is useful - the surgeon can then visualize the result of the clay model and the intended correction (Fig. 2A, B).
- Bone models made of polymer clay can be used for educational purposes when teaching students and young surgeons in the classroom in general surgery, traumatology and orthopedics (Fig. 3A, B).
- Bone models made of polymer clay can be used for research purposes - testing of instruments and fixators, and practicing techniques.

References

1. https://en.wikipedia.org/wiki/Polymer clay
2. https://polymerclayfimo.livejournal.com/180891.html
3. Oh C.S., Kim J.Y., Choe Y.H. Learning of cross-sectional anatomy using clay models. Anat Sci Educ. 2009;(2):156–159. https://doi.org/10.1002/ase.92

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Win-Win Hands

This bronze sculpture is made by Korean sculptor Seung-guk Kim in 1999 to celebrate the new millennium, in Pohang, South Korea. It was named as “Win-Win Hands” which symbolizes that “all of humanity lives together in harmony”. The right hand is 8.5 meter high, weighs 18 tons and is located in the sea. The left hand is 5.5 meter high, weighs 13 ton and situated on land. Both hands stand vis-à-vis.

Contribution: Goo Hyun Baek

Art Exibit # 15


13th APFSSH / 9th APFSHT & 8th APWA
31 May- 3 June 2023, Singapore
13th Congress of the Asia Pacific Federation of Societies for Surgery of The Hand
9th Congress of the Asia Pacific Federation of Societies for Hand Therapy
8th Asia Pacific Wrist Association Annual Congress
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