LITTLE HANDS

GANGA MEDICAL CENTRE & HOSPITALS PVT LTD

GANGA LITTLE HANDS

An Initiative of Plastic & Hand Surgery Department

Monthly Bulletin | Issue 9 | April 2025

"Fused and Fabulous"

Towards Fulfilling the Reconstructive Surgical Needs of Children

LITTLE HANDS

GANGA MEDICAL CENTRE & HOSPITALS PVT LTD

GANGA LITTLE HANDS

GANGA LITTLE HANDS is an educational initiative by the Department of Plastic, Hand and Reconstructive Microsurgery and Burns, of Ganga Hospital, Coimbatore, to share knowledge about Paediatric hand conditions. This is a monthly bulletin and was first started in August 2024.

It has a compilation of various hand conditions treated by us. Little Hands is for anyone and everyone. It is not for surgeons only. The technical tips, 'Did you know?, Picture Gallery, Hand vignettes and the 'Clinician's corner' might be interesting to all the readers.

Scan Me

To read all the issues of Little Hands

TABLE OF CONTENTS

Editorial

Medical Photography

When we manage children with congenital hand anomalies, one of the challenges faced by the surgeon is to help the parents overcome the fear of downgrading the existing hand function. Realistically speaking, those doubts and fears of the parents are not unfounded. There is always a small risk. One of the best ways to reassure the parents is to show them the pictures of the hands with similar problems which we have treated earlier, and their long-term follow-up pictures. For this we owe a lot to the people who pioneered photography.

The oldest photograph - "View from the Window"

The concept of photography or catching up images has existed since the time of Aristotle, and is well expounded in the writings of Leonardo da Vinci. For ages people observed that when there is a dark room with a small hole for light to pass through, an inverted image of the building or scenery outside was found on the other side of the wall.

The challenge was to permanently capture the image and credit for doing this goes to Joseph Niepce, a Frenchman. The oldest surviving photograph, "View from the Window at Le Gras," was taken in 1826 or 1827 by Joseph Nicéphore Niépce, using a process called heliography, which involved coating a pewter plate with bitumen and exposing it to light. From that time we have moved on to digital photography.

The first ever contribution of preop and postop photographs in Plastic and Reconstructive surgery is credited to Gordon Buck (1807- 1877) when he published the outcome of treatment of post burns contractures in a child. Ref: Rogers BO. *The first pre- and post-operative photographs of plastic and reconstructive surgery: contributions of Gurdon Buck (1807-1877). Aesthetic Plast Surg. 1991;15(1):19-33. doi:10.1007/BF02273830*

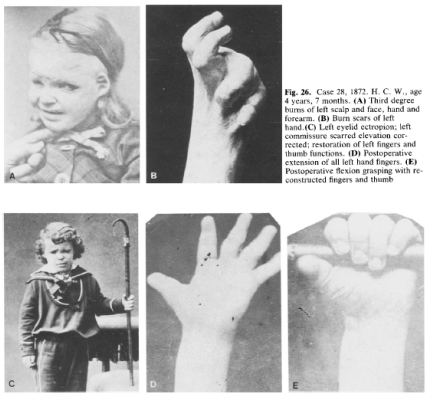


Fig. 26. Case 28, 1872. H. C. W., age 4 years, 7 months. **(A)** Third degree burns of left scalp and face, hand and forearm. **(B)** Burn scars of left hand.**(C)** Left eyelid ectropion; left commissure scarred elevation corrected; restoration of left fingers and thumb functions. **(D)** Postoperative extension of all left hand fingers. **(E)** Postoperative flexion grasping with reconstructed fingers and thumb

One of the first pre & post-operative photographs of plastic and reconstructive surgery

Medical photography has become an art and a science. Capturing pictures to show what it ought to show in the natural way is an art. Storing them, archiving them so that we could recall them in a moment's notice is science. Medical photography has helped advance medicine by allowing us to compare the preop and postop status and measure outcomes. It facilitates communications between units, used in publications and propels research. Technology provides solutions for all these, but at the end of the day it is the physicians commitment to excellence that will determine how well it is used.

We had a child present to us with a very rare type of duplication of the thumb. The more complex and rarer the anomaly the more difficult it is for any clinician to explain the treatment pathway to the parents. We found that 12 years ago we had treated a child with almost similar anomaly, and we had the preop and the intraop and immediate post-op pictures. Since our documentation system was good, with some effort we traced the parents who had immigrated to the United States soon after surgery. We contacted them, and got the pictures and videos of the present status. The gratitude expressed by the child and the parents is so heartwarming. It makes us feel happy that we are in this wonderful field of managing these little hands. Good documentation also helps us to extend care with confidence to another little hand.

Dr S Raja Sabapathy
Dr Monusha Mohan
(Editors)

Visual Reassurance In Congenital Hand Surgery


A whatsapp Enquiry

We received the photo of a child's hand with duplicated thumb, enquiring the management strategy. Extra digits are often considered to be a sign of good luck or prosperity, especially by the older generations. Convincing the grandparents for surgery, can be an important part of our conversation during the first visit. In a department with more than 35 years of experience and years of visual documentation, we have been able to identify various patterns of each condition. At many times, we are able to show the child's parents photographs and videos of children previously operated by us.

We could do a radiographic evaluation when the child was brought to us. We assessed the hand function and found that the pinch strength (thumb-index finger) was weaker than that of the other hand.



Hand usage assessment and visual documentation

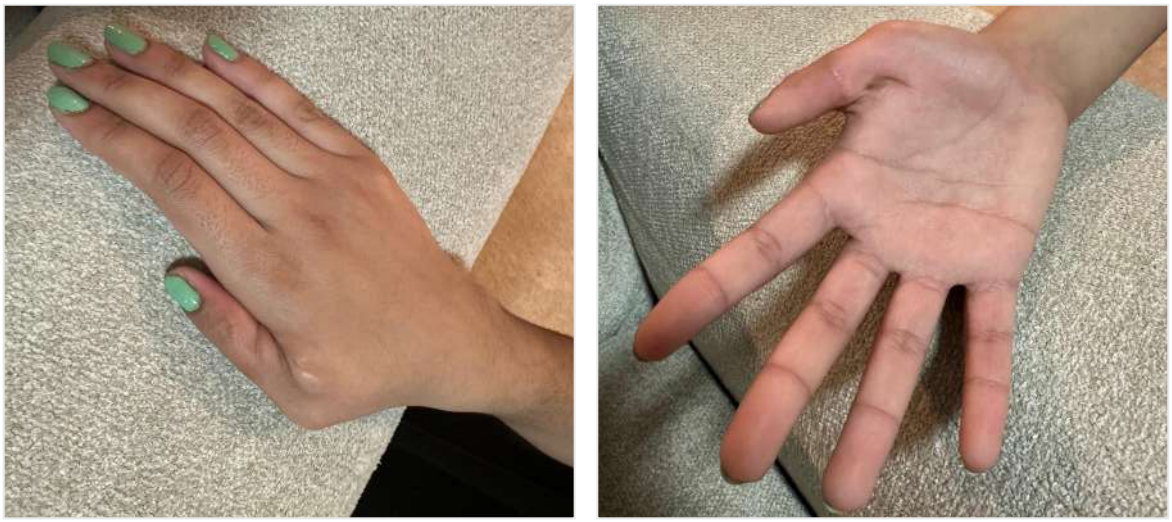
The child has two thumbs but both the radial and ulnar components are underdeveloped with poor pinch strength. Our goal will be to reconstruct a single functional thumb. The ulnar component is floppy with a small metacarpal remnant and no movements. The radial component though has a near normal metacarpal, is longer, slender, has a flexion contracture at the MCP joint level and crosses over the other component. The child needs a complex surgical procedure, wherein the radial component has to be surgically removed and the ulnar component needs to be transferred to the radial component's metacarpal (on-top plasty).

As a part of our preoperative counselling, we showed the clinical images of a girl with a similar condition and exactly the same type of thumb duplication. The girl was operated on 12 years ago. The parents were astonished to see another kid with exactly the same type of anomaly. We could take them through the preoperative clinical images and X-rays, procedure and the final picture of the single thumb. Our old patient had a milder thumb duplication on the other hand which was not operated on as per the parents' wish. We could explain this to the grandmother, justifying why the severe thumb duplication her grandchild has, needs surgical reconstruction. We could explain the fact with data - reduced pinch strength on the right side. We could also highlight the fact that the previous child's other hand was not corrected and that we respect the family's wishes and beliefs.

Preoperative images of thumb duplication in a child operated 12 years ago. The similarity in the type of duplication is striking !

"On-top" plasty where the aesthetically pleasing hypoplasticulnar component without a proper metacarpal, was transposed to the metacarpal of the hypoplastic radial component after excising its distal part.

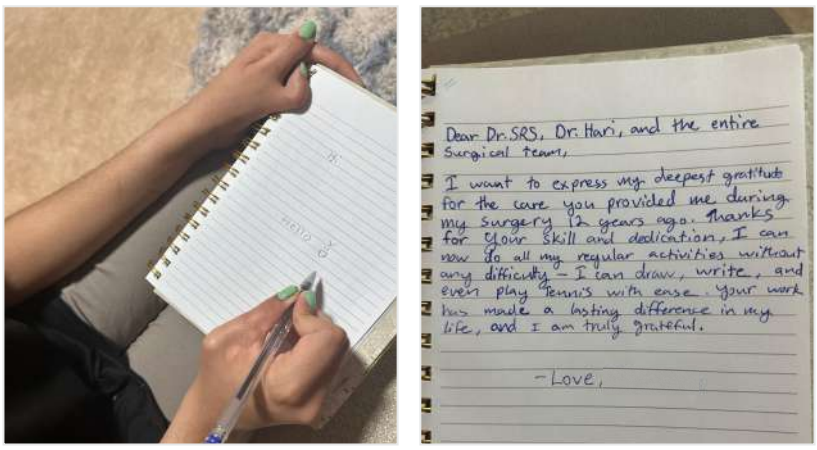
The parents and grandmother though happy, were not satisfied. They had doubts regarding the functionality of the single reconstructed thumb in future. The grandmother also believed that the extra thumb was a sign of good luck. So, we traced our old patient and found that they currently live in the US. When contacted they were kind enough to share the present status and the latest hand photos. We could share the present hand function status with our new patient's parents.



The little hands, 12 years later !

Twelve years later, able to hold and use a mobile and not just scroll !

The clinical encounter taught us the role of medical visual documentation in everyday practice. The clinical images archived help us to understand the medical condition and the surgical steps. The archives help us in managing the parental and patient's expectations and to gain their trust. Long term results as achieved in this child are truly an encouragement for parents of children with similar hand anomalies.

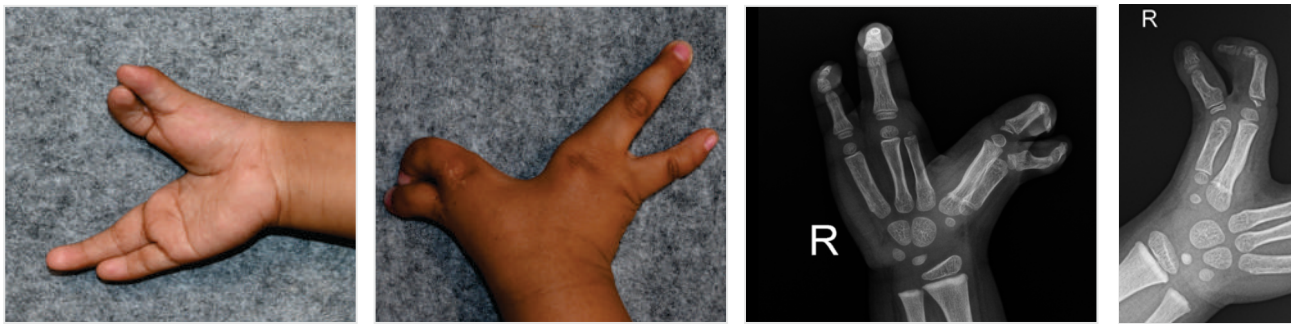


Kind gestures like this keep us motivated

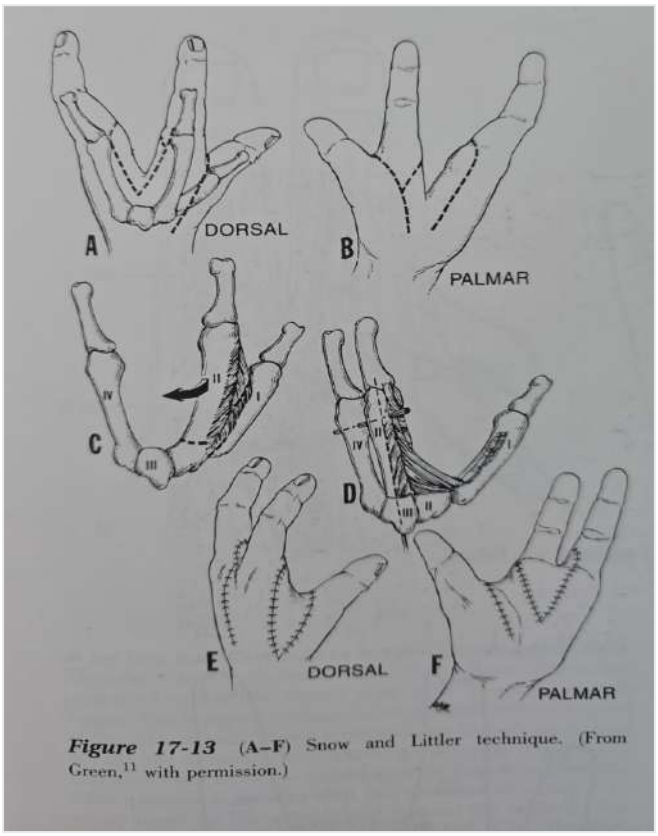
Did you know?

Cleft Hand - A Functional Triumph but a Social Disaster

Children with cleft hand often have little functional disability. The children are brought to us to improve the appearance of the hand. In a cleft hand, there is central longitudinal deficiency where the middle finger does not develop and is absent, leading to a V shaped cleft in severe cases. Last month, we operated on a girl with split hand split foot malformation (cleft of both hands and feet).

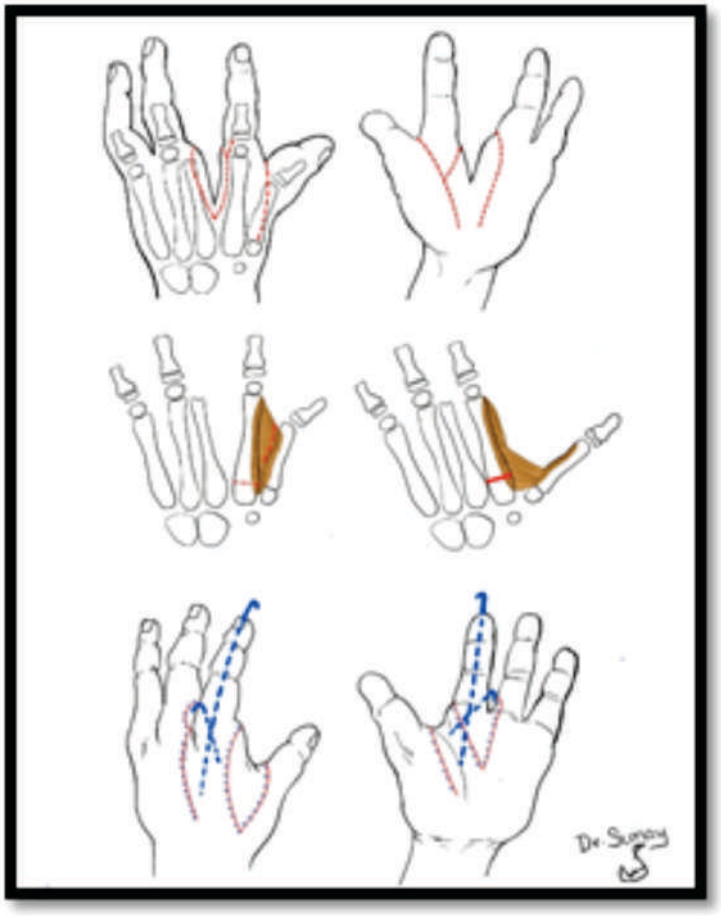


Snow and Littler, devised a procedure for correcting the hand deformity. The three main principles of the Snow-Littler procedure for cleft hand reconstruction are closing the cleft, deepening the first web space, and repositioning the index finger to the central digit position.



The Snow-Littler procedure steps

We raised the Barsky flap to create a first web and the cleft was closed. The second ray was osteotomised at the metacarpal base and just shifted ulnarward and stabilized with K-wires to its own metacarpal base. The third metacarpal was fully formed and we decided not to shorten it for transposition of the second ray.



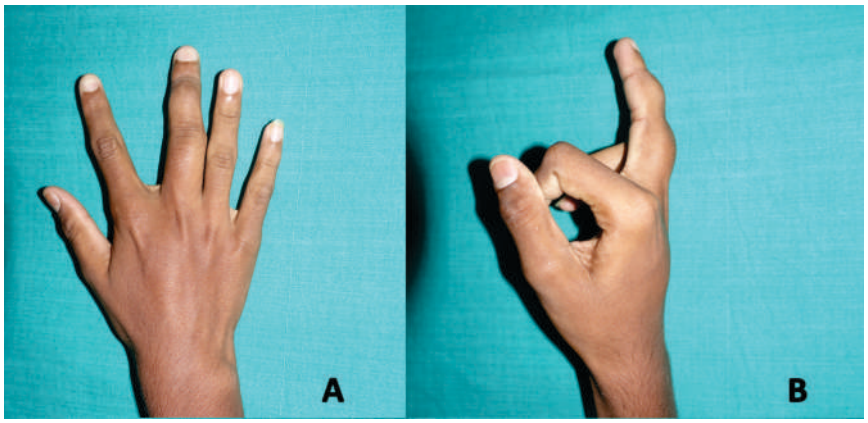
Modified Snow-Littler procedure

The surgical procedure being a rare technique performed in a hand surgery unit, it drew the attention of many of the trainees and international observers, when performed last month. For this child the radial deviation deformity of the index finger at its proximal interphalangeal joint was corrected with Z-plasty and full thickness skin grafting.

Clinician's corner

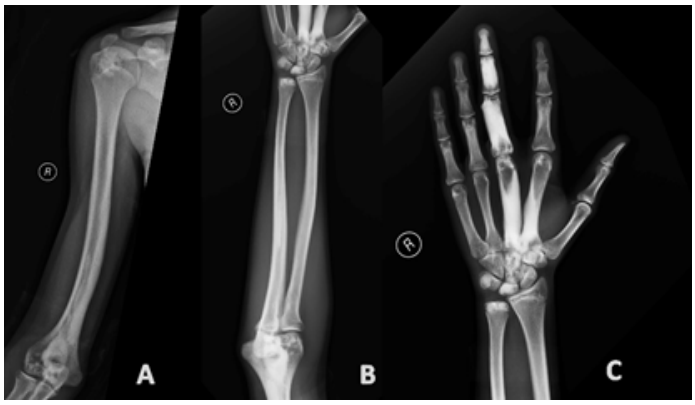
'Dripping Candle Wax' appearance is a characteristic sign of Melorheostosis

A 17 years old right hand dominant, school student, presented to us with painful bony swellings in his right hand of 11 years duration. His chief complaint was pain while writing. He had undulating bony hard swellings on the dorsum of his middle finger and hand and limitation of terminal elbow flexion.



The Swollen Middle Finger

The differential diagnoses are fibrous dysplasia, chronic osteomyelitis, Paget's disease, myositis ossificans, osteoma, parosteal osteosarcoma, osteopetrosis and melorheostosis. A complete skeletal survey was done. Osteoporosis profile was prescribed. Levels of calcium, phosphorus, Vitamin D, parathormone and alkaline phosphate were analyzed.



The typical 'dripping candle wax'

Hyperostotic bone was found in the humerus, proximal ulna, elbow joint, second and third metacarpals, all phalanges of middle finger, proximal phalanx of index finger and the adjoining carpal bones: trapezium, trapezoid, capitate and lunate. Dripping candle wax appearance seen.

The right upper limb was found to be involved. The typical 'dripping candle wax' appearance was seen in the upper limb bones in the C7 sclerotome distribution. Alkaline phosphatase levels were elevated with normal calcium levels. The typical radiological images, blood reports, age and monomelic distribution led us to a diagnosis of melorheostosis. It is a rare type of skeletal dysplasia affecting fewer than 1 in a million persons. Irregular hyperostosis occurs in the cortical bone.

The bone pain in melorheostosis is usually due to increased osteoclastic bone resorption and activation of pain receptors, raised intraosseous pressure and increased vascularity secondary to hyperostosis and/or soft tissue involvement around joints. Bisphosphonates decrease bone pain, slow the progression of the disease and reduce the risk of pathological fracture. Bisphosphonates act on macrophages and reduce inflammation and causes pain relief. They are potent angiogenic inhibitors too and decrease bone vascularity.

Intravenous infusion of Zoledronic acid (Calcium bisphosphonates) at a dose of 4 mg/5 mL was administered. He had a symptom free interval of 2.5 months when he developed mild pain again. The dose was repeated and at a follow-up of one year, he had excellent pain relief. He has not had any severe episodes of pain since three years of treatment.

Awareness of the condition will definitely avoid unnecessary biopsies and interventions and the timely initiation of the accurate treatment. The radiological appearance in this case was typical and the pain can be troublesome at times. The right diagnosis and medical treatment alleviated the pain

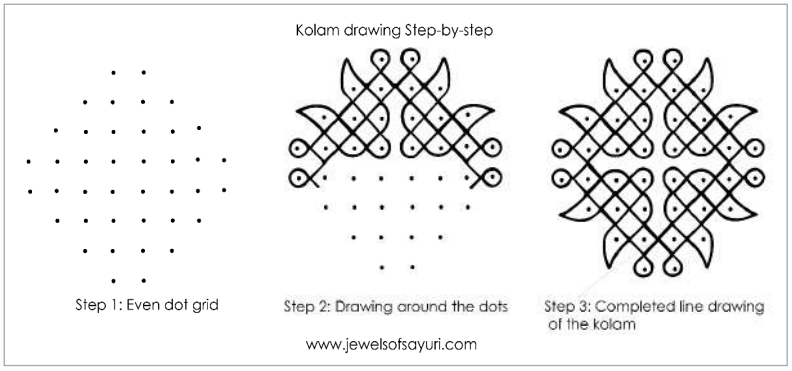
---

Hand Vignettes

Kolam Drawing

It is not rare to see ladies coming out of their houses in the early hours of the day with a powder filled container, searching for a place in front of the house to draw a 'kolam'. It is an art of free hand drawing using rice flour usually seen in Tamil Nadu temples and houses. Kolams are intricate geometric patterns and symmetries.

The kolams are drawn with the bodies curved at right angles. The wrist gracefully moves. The thumb and index finger, are used to take a pinch of the rice flour (pincer grasp) and are released to form delicate drops of rice flour on the ground known as 'pulli' in Tamil—at meticulously regular intervals. On this flawlessly patterned dotted canvas, intricate geometric designs emerge, captivating the viewer with their unfolding beauty.

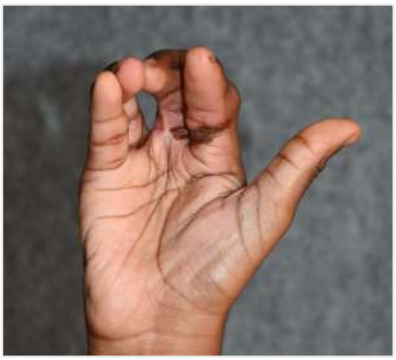


Recent studies show that drawing kolams enhance our motor skills. Hand -eye coordination also develop as the art involves connecting dots and drawing intricate lines. Repeated drawing can lead to better finger dexterity and hand muscle strength. It is an ethnomathematical activity that shows how mathematical concepts and practices are embedded within cultural contexts.

A kolam is not just a welcome sign or a decoration drawn in front of the house. It is considered to be a sacrificial offering to small creatures like ants, birds, and insects, which are seen as part of the ecosystem. It feeds thousands of creatures everyday. This morning routine is a also a way of integrating yoga asanas into everyday life.

Real Life Story - 'Every Journey Matters'

Mended Hands, Creative Heart



Our daughter, underwent an operation for the case of Syndactyly in 2019. During that operation the fingers that were stuck was separated and as she started growing, she found it hard to write and to stretch her fingers as one part of the skin in her finger was set in way which was difficult for her to do her daily activities. So we decided to do an operation to make her fingers straight so that it would be easy for her.

The child had already undergone separation of the syndactyly between the index, middle and ring fingers when we met her. She was diagnosed to have central synpolydactyly, a condition where there is a hidden duplicated finger within the syndactyly. The expected complications after surgery are flexion and angular deformities and the child was brought to us for correction of the same.

We consulted the doctors in Ganga Hospital who gave us hope and that we can see a good result after the operation of our daughter so that she can do her works without any difficulties. The operation took place last year in the month of March, and it's been almost 10 months since the operation has taken place. For the first 3 months after the operation, our daughter didn't have enough strength in her fingers to hold anything tight or to do her work on her own, she also found it very difficult to hold a pen to write.

After Surgery

Bead bracelet making: A hobby and a side hustle

But now she is able to hold things with a grip in her hand, she is able to eat on her own and write properly and she is also driving cycle and etc. We have seen her gaining the strength in her hand like before and we are very happy about her. We also thank the Doctors and the Nurses who treated our daughter for their effort they put in to make her operation a successful one.

Thank you, Ganga Hospital.

Help us heal Little Hands | Make a donation

It is difficult to imagine what the parents experience when they find out in the labour room that their newborn baby has a congenital limb defect. The family often feels devastated as their hopes fade. Most of the limb anomalies have a surgical solution that is aimed at making the hand to function in a better way.

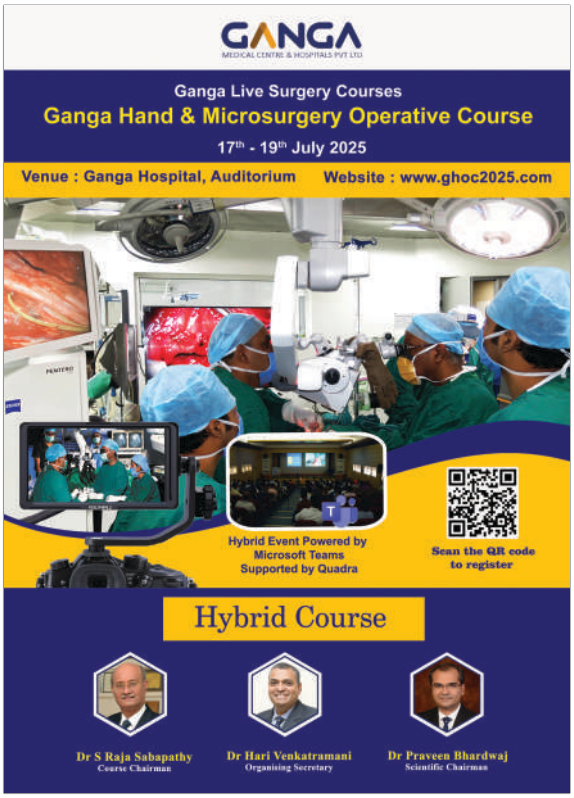
Globally, congenital anomalies or birth defects affect 2-3% of births. In India, 1-3 out of 100 babies born are with birth defects. Though musculoskeletal anomalies are the most common defects seen, rarely we find major initiatives aimed at managing these defects. A lot of regional and international proposals are directed at treating and supporting children with congenital heart diseases and orofacial defects like cleft lip/palate. Though isolated congenital limb defects are not life threatening like the cardiac and craniofacial anomalies, they are disabling and lower the quality of life.

You can make a tax-deductible donation today and transform the lives of these kids by giving back their childhood.

To make a donation, please write to rajahand@gmail.com

At Ganga, we have a specialized team of doctors to provide comprehensive care to these children. One of the basic surgical principles of congenital hand surgery is to correct the deformities before the child attains school going age. Often these defects are bilateral and involve multiple fingers, necessitating staged surgical procedures. We have highly experienced Paediatric anesthesia staff to support the surgical team. The associated anomalies are taken care of by our Pediatric orthopedic, spine, maxillofacial and cardiac teams. Ancillary services like physiotherapy, nutrition and speech therapy are also available.

Ganga Hand Operative Course 2025



World Congenital symposium

2026 World Congenital Symposium of Congenital Malformations of the Hand and Upper Limb.

February 25 - 28, 2026

Ganga Hospital, Coimbatore

This is the first time this will be held in this part of the world. Please mark the dates in your calender. Includes a Live Operative Workshop.

Contact : rajahand@gmail.com

Stay Connected

To get updates about our services for children with hand disorders, to grab the future issues of the monthly bulletin and to know what the department of Plastic, Hand and Reconstructive Microsurgery and Burns offers scan the code below.

To scan the QR codes in the bulletin, follow the steps given below:

1. Take a screenshot of the page with the QR code.
2. Open the Google Photos app or your phone's Gallery/Photos app and open the screenshot containing the QR Code from your gallery.
3. Then, tap on the Google Lens icon or QR code scanner icon (usually located at the bottom or near the options bar)
4. Wait for Google Lens or QR Code Scanner to analyze the QR Code and display the link or information
5. Tap the link to go to the webpage

GANGA
MEDICAL CENTRE & HOSPITALS PVT LTD

313, Mettupalayam Road, Coimbatore - 641 043. India. Phone: 0422 2485000 / 4250000
Email: rajahand@gmail.com | Website: www.gangahospital.com