

PART ONE HISTORY

Hand Surgery Worldwide: International Reconstruction of a "Beautiful and Ready Instrument of the Mind"

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India

20 CHAPTER



Founded 1973

S Raja Sabapathy



In the foreword to David Bornstein's book, 'How to Change the World', the famous entrepreneur in the world of Indian Information Technology, Narayanamurthy has defined the word, 'entrepreneur'. He writes the word 'entrepreneur' comes from the French word meaning "one who takes into hand". Social entrepreneurs are people who take into hand major social issues and relentlessly toil to produce a change in the lives of people. Only few doctors in the history of medicine have been great social entrepreneurs. The pioneers of Hand surgery in India were such people who by their work influenced the lives of millions.

Development of Hand Surgery in India

Hand surgery in India evolved with the management of deformities of Leprosy patients. In

the process a new life and hope was given to these people. The pioneer in this field was Paul Brand who could be termed as the Greatest Social Entrepreneur of Hand Surgery (*Fig 1*). Born of Christian missionaries in India, he had his early education in India and gained his qualifications at the Royal College of England, London. He came back to India in 1948 and did his major work at the Christian Medical College, Vellore in South India

In the times of Paul Brand, great social stigma was attached to Leprosy patients. Ostracized by family and abandoned by the society they were forced to live away from the villages due to their deformities and 'rotting flesh'. Brand used to meet his physician friend Robert G. Cochrane, who was in charge of Leprosy Sanatorium and became interested in these patients. Brand was the first to realize that the lepra bacillus preferentially affected the nerves near the surface of the body and all the deformities were not directly due to the disease but due to the nerve paralysis and the trauma suffered by the insensate hands and feet. Brand proved to the world that surgical incisions in these patients heal as well as they do in uninfected people and correction of deformities by tendon transfers could give them a new lease on life.

To dispel the fear that these people needed to be isolated he admitted the patients in the same ward as other patients and started the 'New Life Centre', a treatment and rehabilitation centre for Leprosy patients among the residential complex of the medical staff. The message of his work spread and surgeons from all over the world especially from the developing countries visited the centre. Ernest Fritschi and Selva-pandiyan continued the mission which Brand started. The unit is presently headed by George Anderson. Hariharan Srinivasan and Dinakar Palande who continue to analyze the mechan-



FIG. 1 Paul W. Brand.

ics of tendon transfer procedures for paralytic deformity correction in Leprosy patients introduced by Brand.

In Mumbai and Pune, a plastic surgeon Noshir Antia did pioneering work for these patients. Apart from tendon transfers, as a plastic surgeon his team also did a great deal of work on the correction of facial deformities of these patients. He remained passionate in his work and rural camps until his death and he was ably assisted by Dr Swaran Arora. The workload was so much that specialized centers evolved to cater to these patients. A good centre in Agra was started and headed by Malaviya. Fortunately with the control of the disease these centers are being disbanded and no more are surgeons only treating this disease. Presently in the practice of surgeons like Sridhar and Santhosh Rath who specialize in tendon transfers, leprosy patients form only a very small percentage of their practice.

Surgery for Hand Injuries

Brij Bhushan Joshi and Venkataswami were the two surgeons who established Hand surgery as a specialty by their work on Hand trauma. They

could be called the 'Social entrepreneurs in the field of Hand injuries'. Joshi, the first surgeon to qualify in Orthopaedics from Bombay concentrated on Hand surgery and worked all of his professional life time in a Government hospital in Mumbai. Working in circumstances of poor infrastructure but armed with tremendous zeal and commitment, he developed many ingenious surgical techniques and splints. The external fixation system which he developed was later refined and is now well known as the Joshi's External Fixation System. (JESS). He was a self taught hand surgeon and his brilliance was rec-

ognized by Guy Pulvertaft who visited his unit in 1974 and invited him to lecture in the UK. Working alone he realized the value of books and had one of the best personal collection of hand surgery literature in the country which he donated to the Ganga Hospital Library at Coimbatore in 2008 (Fig 2).

Developing a health care delivery model for the masses in a country like India required a person who could think outside the box. Government Stanley Hospital, Madras where Venkataswami worked was situated in a crowded industrial belt and the institution received many hand injuries. Realizing the importance of good primary care, he hit upon a great idea to draw the patients directly to the department. He painted a line with the message 'All Hand injury patients please follow the red line', from the gates of the Hospital along the corridors and stairs to the Hand surgery department (Fig 3). Patients thus bypassed the emergency room and the inevitable delays that could occur. It was such a simple idea and soon the unit was treating about 35 hand injuries a day. With this system all hand injuries were primarily seen by a qualified hand surgeon, a remarkable feat which he achieved as early as the late seventies. Balakrishnan, who succeeded him built a new building which exclusively houses the Plastic surgery and the Hand Surgery unit.

Venkataswami also established Stanley Hospital as the first organized microsurgery facility in the country. In North India, Abraham Thomas, who was trained by Marko Godina founded the centre at the Christian Medical College, Ludhiana and made replantation a routine procedure.

Until the early nineties Hand surgery was predominantly being performed in the Government sector. However the Indian economy was opening up and it created social changes. Quality private medical care at affordable prices was being

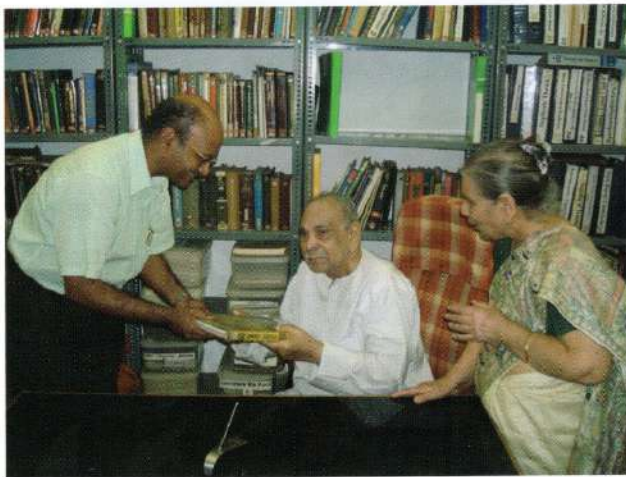


FIG. 2 Dr BB Joshi with his wife handing over a book to symbolize the handing over of his lifetime collection of books to Dr Raja Sabapathy who received it on behalf of Ganga Hospital.



FIG. 3 The 'Red line' in the corridors of Stanley Hospital, leading the hand injury patients from the gate to the department.

preferred by people and many young surgeons started Hand surgery units in the private sector. The author after his training in the UK and Louisville, started the centre at Ganga Hospital, Coimbatore in 1991 and now it is presently the largest Hand and Trauma Reconstructive Microsurgery unit in the private sector in the country. Dr Raja Sabapathy had the distinction of being invited to deliver the Douglas Lamb lecture of the British Society for Surgery of the Hand in the year 2005. In the year 2000, a microsurgery training laboratory modeled on the Acland Lab at Louisville was set up and trainees from 31 countries and 60 cities of India have been trained here. Because of the organized and well equipped micro laboratory it is popular with trainees and about 100 surgeons visit the centre every year.

Hand Surgery Practice and Training

For a country of a more than one billion people the current number of well trained Hand surgeons is insufficient. The way hand injuries are treated depends upon the availability of the type of surgeon in the location. Specialized work is done by few. The influence of Dr Joshi and Dr Venkataswami was so profound that in North India most Hand surgeons are Orthopaedic surgeons and in South India most of them are Plastic Surgeons. Reconstructive Microsurgery is almost exclusively performed by Plastic surgeons throughout the country. The National Board of Examinations runs a 2 year post doctoral training programme in Hand surgery with an exit exam at the end of the training period. Presently three centers in the country offer the course. India is emerging as a destination of advanced training in Hand surgery and reconstructive microsurgery due to the large volumes of patients combined with high quality training.



FIG. 4 The ISSH logo

Indian Society for Surgery of the Hand

The Indian Society for Surgery of the Hand (ISSH) was formed on Aug 15th 1973 and the first meeting was held in Jan 1974. Guy Pulvertaft was the guest at this meeting. Its logo has a hand outline with the medical symbol - the staff of Aesculapius with snakes curled around it in the centre (*Fig 4*). Since the Vancouver IFSSH meeting in 1998, India is regularly represented in the International body and is proudly looking forward to hosting the 2013 Triennial Congress of the IFSSH and IFSHT. The ISSH meets once a year and has two orations in the name of BB Joshi and R Venkataswami. ISSH offers two inland fellowships and one overseas fellowship. The overseas fellowship (Robert Acland – S & T Fellowship) was set up in 2009 from the sale proceeds of the book, Acland's "Practice Manual of Microsurgery" whose copyright Acland was kind enough to transfer to the Indian Society for Surgery of the Hand. Prof BB Joshi, Prof R Venkataswami and Prof H Srinivasan have been recognized as the pioneers by the IFSSH (*Fig 5*).

The Hand in Indian Culture

While modern hand surgery has a recent history, glorification of the hand in Hindu mythology



FIG. 5 Prof R Venkataswami and Prof H Srinivasan.



FIG. 6 The hand of a girl during a wedding ceremony.

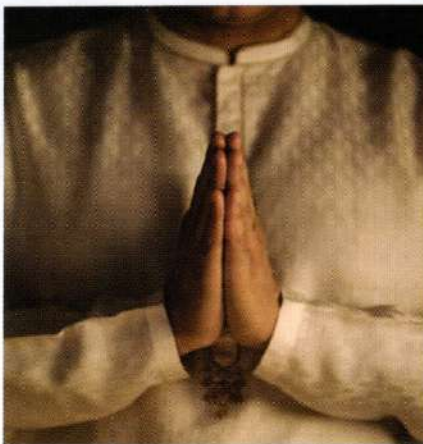


FIG. 7 Folded Hands, 'Namaste' – the traditional welcome sign of India.

is as old as mankind. Hand gestures were used as forms of communication even before man began to speak and the habit of using the hand in regular communication persists. In emotional situations or arguments the hand is as much used as the voice and it might surprise a western visitor. In ceremonial occasions the hand is as often used as the face for body art. The paste derived from the Henna leaves is decoratively applied to the hands and the red orange pigment, lawsone stains the skin (*Fig 6*). In large weddings, hundreds of guests will be hennaed

as well as the bride and the groom.

The folded hands (Namaste) are the standard form of welcome gesture in India (*Fig 7*) and it is more common than handshake. Normally ladies do not shake hands, though it is becoming increasingly common. Handedness has a special place in Indian culture. While left handedness in writing or operating does not attract special attention, Indians are very mindful of using the right hand for all things important and good. Giving or receiving things with the left hand or serving food with the left hand may be considered impolite in traditional homes.

Hand gestures, called 'mudras' are seen in classical dances and in Indian Mythology, where Gods and Goddesses are depicted with different mudras of various symbolic meaning. To illustrate I have provided the figure of a God form. Hindus worship various God forms and Sri Dakshinamurthy is worshipped as the God for wisdom. In an idol dating back to 12th Century AD, the right hand of Sri Dakshinamurthy is showing Chin Mudra (*Fig 8*). In this gesture the thumb and the index finger are joined. The index finger touches the thumb in a semicircular fashion. The other three fingers which represent body, mind and intellect stand aloof. The index finger rep-

resents ego (Ahamkara) while the thumb represents Atma (inner self). Chin mudra denotes that the person who renounces attachment to body, mind and intellect and merges his individual ego with 'Atma' (which is God itself) achieves supreme wisdom. Many profound truths are exemplified by hand postures in the statues found in temples and during the classical Indian dances.

Indian mythology, literature, and dances extensively reference and use the hand to enrich their content. Hand surgery in India has also come of age. India is said to be a 'Land of Contrasts'. Cutting edge technology co exists with very traditional ways of practice. The challenge facing the hand surgeons of India is in raising the average level of care and providing quality care to the masses. It is a challenge they will live up to and all of them are looking forward to welcome the world for the triennial congress of the International Federations of Hand Surgeons and Hand Therapists in 2013.



FIG. 8 The right hand of the God Sri Dakshinamurthy showing 'Chin Mudra'.