EDITORIAL

Allograft Hand Transplant

The world first surviving unilateral hand transplant was performed on September 23, 1998 in Lyon, France. Currently there are six successful reported hand transplants carried out in the world, two bilateral hands – one done in Lyon, France and one in Austria; two unilateral hand transplants done in Louisville, USA and two Guangzhou, China. There is controversy on the indication of hand transplant throughout the world, especially if it involved only single upper limb loss. Preliminary results from four unilateral single upper limb transplant showed there is some return of hand function, mainly nerve regeneration and some movement in the fingers. The more distal the replant, the better the result.

The surgical technique has been similar and most of the immunosuppressant drugs were all based on tacrolimus, MNF and prednisolone. However the Chinese group has used irradiation and high doses of prednisolone. The current complications noted from these combinations have included steroid induced diabetes mellitus, renal impairment, opportunistic viral infection, recurrent fungal infection, Cushingnoid syndrome but these appeared to be controllable.

Ultimately the result of allograft transplant will be assessed on the cost and benefit in term of mental suffering, physical handicap and financial burden to the patient, family, community and the nation both short term and long term.

The first surviving and successful replanted hand has many background controversy which eventually claimed that anti-rejection drug was too costly and finally led to amputation of the transplanted hand. In single upper limb loss, the remaining stump normally can still function as an assisting hand to oppose the normal opposite limb. The patient normally is not badly incapacitated. The myoelectric prosthesis may be able to provide better function in term of grip and aesthesis. However, in bilateral upper limb amputation, allograft transplantation may be an option worth undertaking.

The major obstacles we see in this new frontier of hand surgery are in the donor limb and the recipient.

In the donor limb there may be psychological rejection of the unacceptable donor limb, e.g. a prisoner's limb. If the transplanted hand is unaesthetic and non-function it cannot be hidden (unlike other organ transplant). The patient may develop phobia and rejection. Unilateral hand transplant will never achieve normal hand function. Therefore the patient will always prefer to use the normal hand. Both immunological and psychological rejection of unilateral transplanted hand probably is a matter of time. A transplanted hand is unlikely to rival an aesthetic prosthesis.

In the recipient, immediate and long term psychological behaviour of the recipient is still unclear. This can only be achieved after adequate follow up. The financial cost of immunological drugs may be beyond the reach of many individuals and the health system, especially in developing countries. We are uncertain of the long term results of immunosuppressants in term of side effect and its efficacy.

What is the best combination of immunosuppressant to overcome immediate and long term rejection is still unclear. This will remain experimental unless there is newer, safer and more efficient immunosuppressant drug that will be available in the market. The possible use of isolated limb perfusion for the drugs to confine their action mainly in transplanted limb probably will have little role as it cannot avoid the systemic effect of the drug side effects.

Robert W H Pho

Tribute To A Senior Statesman of Singapore General Hospital – N Balachandran

" Not Pride of Knowledge but Humility of Wisdom"

Tan Ser Kiat

Chief Executive Officer
Singapore Health Services Pte Ltd

Such is the guiding philosophy that has shaped the life of Navaratnam Balachandran. Ladies and gentlemen, I am indeed honoured to be asked to deliver this tribute to a senior statesman whom I have the privilege of learning from and working with.

Progress in every sphere of human endeavours takes place through successful passing of knowledge, experience, and wisdom to successive generations. Every now and again, giants take institutions to even greater heights. N Balachandan is one such giant of SGH.

Born on 8th June 1928 in Kota Tinggi, Johore, young Bala was destined to dedicate unselfishly his entire life to the service of the infirmed and the sick. This started even before he finished school when at the age of eleven, he was already helping to dispense medicine to workers in his father's plantation in Kota Tinggi.

During the war, young Bala was to gain first hand experience in witnessing the scale of human suffering brought about by the Japanese Occupation of Peninsula Malaya and Singapore – injuries and diseases associated with poor hygiene, nutrition and the environment. He was especially adept at dealing with worms, malaria, dysentery and minor injuries. It was then that he dreamt of becoming a doctor. This dream became a commitment after the war when he almost died of scrub typhus.

His dream was realised when he was admitted to the King Edward VII College of Medicine in Singapore after the war, graduating in 1955. Completing his housemanship in Kuala Lumpur, he began his surgical career under the tutelage of the late Professor Yeoh Ghim Seng. His interest in Orthopaedic Surgery was kindled whilst working under Professors Cameron, Anders Karlen, and Donald Gunn.

So inspired was he by their commitment and dedication that when they asked him to take up Orthopaedics as career, he did not hesitate and has, in his own words, "never looked back nor regretted that decision".

He was sent on a departmental scholarship to the United Kingdom and obtained the fellowships of the Royal Colleges of Surgeons of England and Edinburgh in 1962 and the M Ch (Orth) Liverpool in 1963. His return to Singapore in 1964 marked the beginning of a long and distinguished career in public service. The pressing needs of the patients, especially young children, were overwhelming as we were in the midst of a severe epidemic of poliomyelitis. Bala was deeply involved in the rehabilitation of such children in Middleton Hospital and St. Andrews Orthopaedic Hospital. Poliomyelitis, diphtheria, tuberculosis, tetanus, septic arthritis, osteomyelitis, neglected trauma and many other crippling conditions were rife and there were simply too few orthopaedic surgeons to deal with it. His perseverance, tenacity, commitment and innovative spirit, together with a dedicated team saw the day. That we are able to today look back with great pride in overcoming such odds are due in no small measure to Bala and his colleagues as well as government's foresight in dealing such debilitating diseases.

With the tide turned against these diseases and the discipline of Orthopaedic Surgery well established in Singapore, Professor Balachandran was sent to Indonesia under the aegis of the Colombo Plan for the training of Indonesian orthopaedic surgeons. He has been instrumental in training the pioneer batch of orthopaedic surgeons in Indonesia. It was also in Indonesia that he met his lovely wife, Rita.

Back home after the Indonesian service, the academic path beckoned. He was offered the Headship of the University Department of Orthopaedic Surgery in 1972 on the resignation of the incumbent but he declined, choosing to remain in government service with the Singapore General Hospital. That decision was to change the orthopaedic scene in Singapore significantly. And was SGH's gain. On his retirement after a long illustrious career, he summed it up, his own words,

"I think I would never have achieved what I have if I had been in the University. There, I would not have been in a position to look at the needs of orthopaedic surgery for the whole of Singapore..."

The rapid development of orthopaedic service in our public healthcare system was due in no small way to him. He was instrumental in pushing and setting up of the various Departments of Orthopaedic Surgery in Alexandra Hospital, Toa Payoh Hospital and Tan Tock Seng Hospital in 1977. The standard practice of orthopaedic surgery and trauma care in the public hospitals was rapidly transformed into a forward looking discipline encompassing the latest advances in R&D and medical technology. Though conservative by nature, he does not allow that to stand in the way of progress, encouraging his younger colleagues to introduce new diagnostic and therapeutic modalities of patient management, guiding them with his vast wisdom and experience. His ability to differentiate between the good from the gimmicky has prevented costly mistakes and disasters.

Professor Balachandran has also the foresight to recognise the importance of a comprehensive rehabilitation service, in particular spinal rehabilitation in our patient care. He can be credited, together with the late Dr Tan Eng Seng, for setting up the Rehabilitation Centre and the Artificial Limb Centre at Tan Tock Seng Hospital.

Rehabilitation Medicine is now an essential and integral part of both surgical and medical disciplines. One of his greatest contributions is in the area of education and training. He has been the strongest proponent of teaching and putting in place a structure for the training future generations of specialists to ensure that the standards of our healthcare continues to improve and remain the highest in this region. He has always emphasised the importance of training saying:

"One of our greatest responsibilities as senior staff is the training of our younger colleagues. To be allowed to teach and train is itself a privilege and honour which we must uphold and maintain".

I was one of the earlier fortunate beneficiary of this, not only from his personal tutelage but was sent by him to some of the best centres in the UK during my training.

He chaired the first Orthopaedic Training Committee that was tasked with the responsibility of training orthopaedic surgeons for the nation. He was able to bring everyone together to work towards a common good. For many years, Orthopaedics was perhaps the only specialty that was able to put all trainees into a central pool and rotate them annually through all the hospitals as part of their advance training programme. He also put in place a well planned and structured training programme. This was indeed far- sighted and made orthopaedic surgery a much sought after specialty.

So successful was the system of training in Orthopaedics, which included 1 year of overseas training in a subspecialty that he convinced the then PS/DMS, Dr Kwa Soon Bee to set up the HMDP for the training of all specialists in the early 80's. This was later extended to include non-medical staff like nurses. Since its inception, the HMDP has benefited a large number of doctors, nurses and other paramedical staff.

But perhaps what touches and inspired all of us is his deep compassion to his patients and his concern for his colleagues and staff. His life as a doctor and surgeon is exemplary to all. His care, concern and compassion to his patients have made him legendary in the local medical profession. He places no emphasis on the social standing of his patients who ranged from the destitute to dignitaries like Ministers and Heads of State. He treated them with equal respect, care and empathy. He would never allow anything or anyone to compromise the welfare and interests of patients. His only concern was for their well-being and recovery from illness. As a young surgeon working under him, I was personally touched by his kindness and compassion on many occasions that I happen to witness.

Professor Balachandran was also well-known for his stand on justice, fair play and principles. His willingness and courage in defending principles and upholding justice, even at the risk of going against popular and establishment's opinion, won him deep respect from colleagues and friends. I have known him to stand up for younger colleagues under severe pressure and criticisms when they are not at fault. I have been one of the fortunate recipients of such support in my more rebellious and naive younger days when I thought I could take on the might of the establishment. Many, some of whom do not even know him, have sought his wise counsel, advice and wisdom whenever troubled. He has never shield away from giving honest, fatherly and often compassionate views and opinions.

Even after his retirement, Professor Balachandran continued to serve both Singapore General Hospital and the medical profession. He was conferred Emeritus Consultant to Singapore General Hospital following his retirement and actively participated in the teaching of students and trainees. He continued to provide very valuable advice and wisdom to our practising surgeons and other staff, in addition to running a busy clinical practice to Singapore General Hospital at no cost.

Elected to the Singapore Medical Council in 1987, he subsequently took over the helm as President of SMC, a post which he served with great distinction right till his untimely passing in November last year. He set very high ethical, moral and professional standards in the SMC. He has always emphasised that whilst we must maintain the highest professional and ethical standards when judging fellow colleagues, justice must also be tempered with compassion. His tenure as President of SMC has raised the standing of the profession in the eyes of the public and the establishment.

Professor Balachandran, a true son of Singapore General Hospital and Singapore, is an outstanding doctor, a teacher and mentor, friend and confidante, a distinguished scholar, true gentleman and above all a humble man. He is the ultimate role model, which we should and must try to emulate. His life as a doctor has been guided by The Physician's Prayer, given to him on his graduation from medical school:

Lord, who on earth didst minister
To those who helpless lay
In pain and weakness, hear me now,
As unto Thee I pray

Give to mine eyes the power to see
The hidden source of ill
Give to my hand the healing touch
The throb of pain to still

Grant that mine ears be swift to hear
The cry of those in pain
Give to my tongue the words that bring
Comfort and strength again

Fill Thou my heart with tenderness
My brain with wisdom true
And when in weariness I sink
Strengthen Thou me anew

So in Thy footsteps may I tread
Strong in Thy strength always
So may I do Thy blessed work
And praise Thee day by day

Ladies and gentlemen, SGH is indeed most fortunate to have a distinguished son whom she can proudly call her own. His untimely passing however has greatly saddened us. As we move forward into the 21st century, we can do so with much hope, confidence and optimism, standing on the "Shoulders of this Giant".