

## Donald Gunn Lecture



### **The Long Term Functional Result of Reconstructive Hand Surgery: My Life Time Experience** Teoh Lam Chuan

My life time contribution to Hand Surgery that I can easily recognize is in the journey reconstructive surgery of the hand. In the early 1990 freshly back from fellowship training in the Kleinert's Institute I was thrown in into the deep end and tasked to manage complex injuries and congenital deficits of the hand. Many of these cases were beyond what the fellowship had equipped me. All these cases became by source of advance training and the experience cumulated became my learning. These long hours of work and fatigue was survived only by tenacity and energy of the youth.

To recount the journey of the reconstructive surgery, I will present some of these complex cases on 1) major arm replant, 2) wrist replant, 3) toe to hand transfer, 4) complex segmental injury, 5) complex radial injury, 6) epidermolysis, 7) monodactyly and 8) symbrachydactyly. These patients had a long term follow ups of an average of 20 years, in the trauma cases I am seeing them growing old and in the congenital cases seeing them growing up into adulthood. I had the opportunity of reviewing them again at long term, some incidentally for other unrelated conditions.

These cases will be presented with their case history, surgical reconstruction and intermediate term follow-up. A "20-year" review result on functional assessment (sensation, motion, aestheticism, power and dexterity), work status and social integration will also be discussed.

In the trauma reconstruction, the experience and learning in managing these cases allowed me to formulate "**the universal reconstructive principles**" that became my teaching resource both locally and internationally. The universal reconstructive principles are: a) Think of 5 tissue components of the hand, b) complete excision of the devitalised tissues, c) repair of the disrupted tissues, d) replacement of the missing tissues, e) replacement of missing digital units, f) primary wound healing and g) early intensive rehabilitation.

In the congenital deficits, I have learned the reliable "**the functional principles of congenital reconstruction**" that guides me in treating these difficult cases. These functional principles are 1) absence of parts and deficiency in function is difficult to reconstruct, 2) With presence of function, any deformities can be satisfactorily corrected., 3) The presence of function is always preserved in the course of the surgical correction, 4) aestheticism is the most important consideration in any surgical correction, 5) functional improvement is a bonus from surgery and 6) do the surgical correction as early as possible.

As a personal reflection in this journey of reconstructive hand surgery, it is not just work to earn a living or the joy of the craft, but a privilege of participating in changing the patient's course of life. It is a journey not of achievement but of continuing learning.