Hand transplantation in India – not miles ahead

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The first successful solid organ transplantation was performed in 1954. The first hand transplantation was performed in Lyon, France on 23 September 1998. It took 44 years for success at transplanting the hand. The results achieved in this first case showed the feasibility of the surgical technique, the efficacy of the immunosuppressive protocol, the limited adverse effects and the importance of patient compliance and rehabilitation to ensure functional recovery. Despite many controversies and the great skepticism that rejection could be controlled, hand transplantation was attempted in the United States, Austria, China, Italy and Belgium. From September 1998 to February 2006 eighteen male patients underwent 24 hand/forearm/digit transplantations (eleven unilateral and four bilateral hand transplantations, two bilateral forearm transplantations, one thumb transplantation) and till date 50 such hand transplantations were done throughout the world [1].

Hand transplantation is the most widely recognized form of Composite Tissue Allograft (CTA), aims to improve function and the quality of life of upper limb amputees. Hand transplantation in India is a Herculean task and needs to egg on. Extensive evaluation of all potential recipients must be accomplished to identify medical, social, and psychiatric problems. Great emphasis should be placed on patient education prior to the informed consent. Because hand transplantation is a new procedure, much effort should be spent on evaluating and listing recipients, coordinating the donation process with the local organ procurement organization, and formulat-

ing strategies to treat episodes of acute rejection. A hand transplant protocol, guidelines needs to be drawn up, and the project should be approved by the University/Institutional Review Board/Indian council of medical research. IRHCTT(International Registry on Hand and Composite Tissue Transplantation – www.handregistry.com) will evaluate, compare, analyze data, assess his/her psychological outcome, social behavior, work status, subjective satisfaction, body image patients well being, and functional outcomes with the different published teams across the globe.

Hand transplantation is technically feasible and that results are very encouraging as major adverse effects due to surgery and immunosuppressive regimen did not occur. The main reasons for rejection were inappropriate level of amputation, congenital problem with the limb, perceived technical difficulty of the procedure, previous cancer, infections, and lack of appropriate level of enthusiasm. Moreover hand transplantation would produce, over a hypothetical remaining lifespan of forty years, twenty-five quality-adjusted life-years (QALYs) for a unilateral transplantation and twenty-two QALYs for a bilateral transplantation [2].

From a functional point of view, remarkably a good recovery of motor and sensibility has been documented in all transplanted hands [3]. The function of the transplanted hand appears to be superior to the currently available prostheses in Carroll test scores. The main concerns now relate to the adverse effects of long-term immunosuppression, such as infections, metabolic sequelae such as diabetes, hyperlipidemia, osteoporosis, and neoplasia. The successful avoidance of steroids can be a step towards the minimization of immunosuppression in CTA.

There is lot of young, energetic hand and micro surgeons in India, who are really enthusiastic, can take up the work. They need to plan, organize, lead and at the same time control and communicate. Despite controversies and challenges these young surgeons may still find it to be a day for calling. The transplantation process is seldom linear and simple. Instead it consists of unconscious scanning, intuition, insight, and logical formulation for

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the surgeons to perform it. The time is ripe for potential expansion of CTA services in India to help thousands of individuals needing tissue replacement.

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