Liver transplantation in Armed Forces—new kid on the block

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Just three decades ago patients with end-stage liver disease were mere clinical curiosities with little to offer in terms of therapy and usually ignored or offered portosystemic shunts with innumerable complications. The transformation in India within the past 10 years is nothing short of a miracle, with over 25 centres offering liver transplantation—the most difficult of gastrointestinal (GI) procedures with world-beating results.¹ This silver cloud has a dark lining however, as it is still performed in very few centres and is largely a private hospital phenomenon.

The stunning success of liver transplantation in the last two decades has been largely due to refinement of surgical techniques, superior immunosuppression, intensive care, and patient monitoring. Presently 1- and 5-year patient survival approach 90% and 80%, respectively.² Despite a late start, India can now boast of centres of excellence which often surpass the best of the West in surgical innovation and ingenuity.

Initiated at the All India Institute of Medical Sciences (AIIMS), New Delhi in 1996 with a deceased donor programme the liver transplant venture in India had a poor start with very few successes. In India, >200,000 patients succumb to end-stage liver disease and its complications annually. However, liver transplantation in India began only in the late 90s as a deceased donor programme after 'The Transplantation of Human Organs Act' (THOA) was passed in 1994 by the Indian Parliament.³ Various sporadic efforts followed before an initial success in 1998 when it dawned on surgeons that only a trained multidisciplinary team could carry out the arduous operation and salvage postoperative patients. Honing their skills at large volume centres abroad a band of intrepid surgeons and physicians slowly but surely ensured the country's place on the world transplant map, but, with one glaring lacuna—India's liver transplant success was wholly due to living donors.

The Armed Forces Medical Services (AFMS) though sensitised to the needs of a liver transplant programme since 1996, was dragging its feet, quoting cost and the exotic nature of the then experimental procedure as deterrents. The projected need for transplant was about 50 cases/year and finding that patients were seeking financial sanction for the exorbitant procedure in

civil hospitals, better sense prevailed fortunately and a 19 member multidisciplinary team encompassing surgeons, physicians, anaesthesiologists, co-ordinators, a radiologist, and pathologist, along with operation theatre (OT) matrons and intensive care unit (ICU) sisters was cleared for training at two high volume centres in the UK in 2006. The team reassembled at Army Hospital (R&R) in February 2007 where a brand new turnkey project consisting of three modular theatres, ICU, and high dependency unit (HDU) was created with all the necessary equipment. This state of the art liver transplant centre is now a role model for other hospitals embarking on the same venture.

Having trained extensively in deceased donor transplantation, the new team was well aware that the success of the venture would be dependent on the vital component—organ donors. With a dismal organ donation rate of <0.05/million population, the team faced the arduous task of not only sensitising our patients to the concept of brain stem death but also convincing fellow physicians that organ donation is a distinct possibility. Faced with the daunting task of setting up a new centre the team was understandingly apprehensive. Fortunately for the team members and the authorities at all levels left no stone unturned to launch and nurture the 'new kid on the block.'

The Armed Forces Organ Retrieval and Transplant Authority (AORTA) was instituted under the aegis of the Directorate General of Health Services (DGHS), with the express aim of coordinating organ donation and spreading awareness of brainstem death. Physicians were identified for certification committees, ICU protocols instituted for maintenance of potential donors and a large number of lectures held to boost awareness. The response from the Armed Forces community was gratifying and taught us important lessons.

A conspicuous reason for the dismal organ donation rate rests with us physicians. The concept of brain stem death is still not clear within the medical fraternity with the definition of death varying. Treating physicians and surgeons are loath to accept that their patient is now dead and there is still a vague unfounded fear of repercussions from the system and the next of kin. Religious issues were not as important a cause for denial of donation as previously believed and in a humbling review there was no reason to accept social status and education as deterrents to organ donation. All that was required was to explain the concept of brain stem death and request for organ donation in a humble manner. There was a persistent need to ensure that there was no malafide intent and there was no denial of standard of care to the deceased. Any act of rudeness on the part of the staff or any suspicion of inappropriate care always led to an angry denial. This was the most important lesson learnt by us.⁴

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March 8, 2007 will always be a red letter day for the AFMS—the first deceased donor liver transplant was done with L/NK Sukhwinder Singh being the first recipient. Other successes followed quickly with AHRR establishing the single most successful deceased donor programme in India. Till date 41 patients have consented for organ donation with 39 deceased donor liver transplants. This impetus also resulted in three heart transplants and has given a ray of hope to pancreatic, lung, and intestinal transplants which are being planned in the near future. The April 2012 issue of the MJAFI carries an article titled ‘Liver Transplantation in Armed Forces: Initial Experience’.⁵

Appreciative of the fact that demand far outstripped supply and the fact that we were losing patients on the waiting list the liver team embarked on living donor liver transplantation also. With careful patient selection and choice of donors AHRR has completed 25 living donor liver transplants to date. A unique feature has been the predominance of paediatric transplants with 16 children ranging in age from six months to 16 years undergoing liver transplants.

Army Hospital (R&R) also had the unique distinction of doing the country’s first ‘in situ’ split liver transplant. On 27 August 2008, a 30-year-old lady, wife of a serving Major of the Indian Army was battling for her life in the ICU of AHRR, New Delhi. Despite all possible medical efforts, the lady was declared brain dead and her husband desired her last wish of organ donation to be fulfilled. Army Hospital (R&R) honoured this noble gesture by embarking on an in situ split liver transplant surgery, the first ever in India, thus giving a new lease of life to two patients suffering from end-stage liver disease. The novel technique of in situ splitting of the liver involves dividing the donor liver into two parts whilst still in the donor, so that two patients can be benefited from one donor organ.

The surgery resulted in two liver grafts. The smaller left part was transplanted into a 14-month-old baby suffering from biliary atresia who was conceived by the in vitro fertilisation technique and the chances of his getting a liver from his parents were remote as they were unsuitable as donors. The larger right part was transplanted into a 26-year-old soldier with cryptogenic cirrhosis. Both patients are doing well.

Untapped Resources Abound in the Armed Forces Medical Services

All our hospitals are potential organ donor centres. With the recent amendment to THOA it is envisaged that organ retrieval can take place in non-transplant centres also. Linking of all Command Hospitals (CH) under the umbrella of AORTA is on the anvil and organs have already been donated from CH (CC) and CH (SC).

The Armed Forces have been the pioneers of deceased donor organ transplants in the country but our lead can be maintained only with a sustained effort from all parts of the

country. At present there are only five kidney transplant centres in four states (Delhi, Maharashtra, UP, and Karnataka), and one each for liver and heart in Delhi, which caters to the needs of the entire Armed Forces. Patients from non-transplant Armed Forces Hospitals from all over the country are transferred to these centres for transplantation. Hence, the waiting lists of Deceased Donor Organ Transplantation in Armed Forces Transplant centres are not as per State Lists but a national waiting list encompassing entitled patients from all over the country.

In the present situation, as the Armed Forces have very few transplant centres, organ donations at all non-transplant AFMS Hospitals will always go to the respective state pool and will not be available to the waiting list of patients at the few transplant centres of the Armed Forces. This will result in gross disparity in the allocation of deceased donor organs for the Armed Forces clientele. In addition such disparity will inevitably lead to increased mortality of patients on the waiting list.

Keeping in view the above and the fact that the ‘new kid on the block’ has to eventually grow, the proposals mentioned below need to be considered favourably.

- a. Armed Forces Organ Retrieval and Transplant Authority should be empowered to coordinate the organ donation and transport of such organs to various transplant centres from the Armed Forces Hospitals throughout the country.
- b. As the AFMS is a Central Government Organisation, it should be considered as a ‘deemed state’ for the purpose of organ donation and transplantation so that it is immune to the local state laws and can organise its organ donation, transportation, and transplantation effectively.

A new liver transplant programme should aim at generating volumes that would optimise results by maintaining the expertise of the group, and make the facilities cost effective. Above all, the programme needs a dedicated and motivated team, and a supportive and progressive management.

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