First case of enbloc dual kidney transplantation in Sri Lanka: a case report and review of literature

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Introduction

Deceased organ donation in Sri Lanka is still in its infancy and occurs quite infrequently. Among them, paediatric Deceased donors (DD) are extremely rare. In contrast, the demand for deceased donor organs is constantly increasing, especially for Kidney Transplantation (KT). DD Dual KT means transplanting both harvested kidneys into one recipient.

Such transplants are carried out when the donor kidneys are sub-optimal or of the paediatric age group. When kidneys are retrieved from paediatric donors of less than 15 kilograms it can be transplanted as enbloc (keeping vessels of both kidneys on aorta and inferior vena cava (figure1) to avoid complications. Such a case has not been reported before in Sri Lanka.

Case report

A three and a half year old girl was admitted to the teaching hospital Anuradhapura with respiratory arrest following a snake bite. Patient was not having spontaneous breathing movements despite not being on paralytic agents for 10 days and brain death was confirmed later. Informed written consent for organ donation was obtained from parents. Her weight was 12 kilograms (kgs).

Bilateral kidneys with ureters, aorta and inferior vena cava was retrieved enbloc. (Figure1). It was transplanted into a 44 year old male weighing 50 kgs, with end stage renal failure (ESRF) due to hypertensive nephropathy. The lower end of graft IVC and aorta was anastomosed to recipients' external iliac vessels in an end to side fashion. (Figure 1, 2) ureters were joined at lower end and anastomosed to the bladder. There was immediate graft function with a serum creatinine reduction From 397 on D0 to 198 on D2.

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Discussion

En-bloc (EB) Dual KT are considered when kidneys are retrieved from marginal or paediatric donors. The first case of EB dual KT was performed in 1972 USA [1]. Kidneys from paediatric DD of less than 15kgs are considered marginal due to increased risk of vascular thrombosis, ureteric

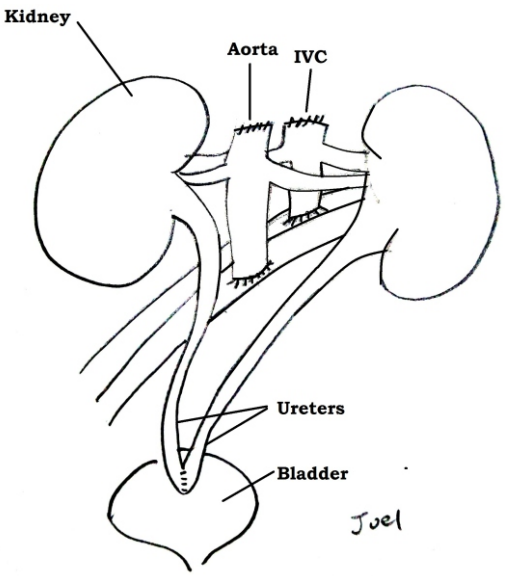

Figure 1. Enbloc Kidney Transplantation

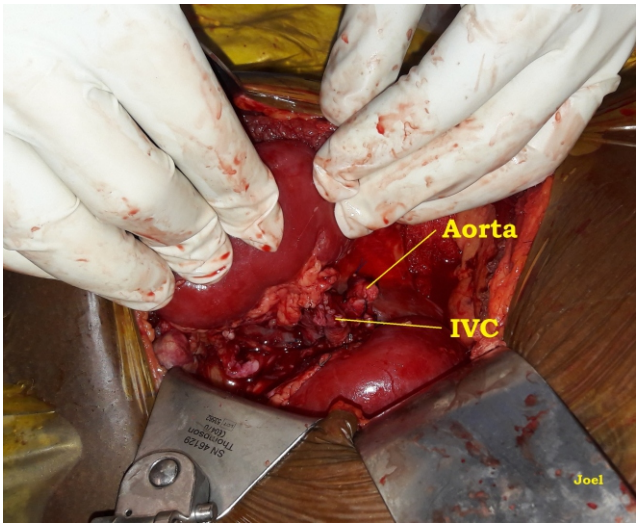

Figure 2. Following Reperfusion

complications, delayed graft function and hyper filtration syndrome [2,3,4,5]. Therefore KT from such donors were not preferred in the past. However with the current advance in techniques and improved management of donor and recipients the situation has improved. In EB dual KT both harvested kidneys are implanted together with Aorta and IVC. This will reduce the operating time and provide a larger calibre vessel for anastomosis which will minimise the surgical complications.

Splitting such kidneys and implanting into two different recipients will result in inadequate kidney mass to allow adequate function and also the surgical and postop complications are more with such splitting even if they are implanted separately into a single recipient [6]. Therefore due to the lack of adequate DD and long waiting times in cadaveric KT list, such EB dual KT should be considered more in the country.

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Key Points

- Retrieval and transplantation of marginal kidneys from paediatric donors should be considered more
- EB dual KT reduces the operating time and the complications.