

# Anaesthetic Implications of En Bloc Kidney Transplant from 11 Month Old Donor to an Adult Recipient: A Case Report

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**Abstract:** A case of renal transplantation from an eleven month old baby into 38years old female recipient. In this case the cold ischemia time was 250 minutes and the operative time was 300 minutes. Judicious intraoperative fluid management, meticulous control of blood pressure and perioperative and post-operative immunosuppression were the cornerstone of management.

**Keywords:** Renal transplant, Infant cadaver, Perioperative management, Intraoperative management

## 1. Introduction

There is an increasing demand for donor kidneys and various strategies are being explored to expand the donor pool. One solution is the use of en bloc kidney transplantation from paediatric donors.

## 2. Case Report

A 38yr old lady (60kg) with known case of CKD-ESRD since 10years secondary to crescentic glomerulonephritis, on alternate day haemodialysis with hypertension on medication with treated chronic hepatitis C with tubercular abdominal lymphadenitis on modified ATT since 6months underwent renal transplant on July 10<sup>th</sup> 2018. The donor was an 11month old 10kg baby of subdural hematoma due to accidental fall.

## 3. Intra Op Management

As there was no significant gastroparesis in the patient standard general anaesthesia induction with injection fentanyl, injection propofol, injection atracurium was given and airway was secured with 7.5mm endotracheal tube and maintained on isoflurane, nitrous and oxygen. Post induction right IJV central line was inserted and right radial artery cannulated. In addition to baseline monitoring arterial BP, CVP, SVV were monitored. Baseline ABG showed normal pH with no significant electrolyte abnormality. Patient had received dialysis the previous day where 2500L ultrafilter was removed. Injection an thymoglobulin was started after premedication with injection hydrocortisone, injection paracetamol and injection pheniramine as per institution protocol.

Intra-op fluid therapy was guided by both CVP and SVV and total 2.5L of crystalloid (NS and plasmalyte A) was given during entire surgery.

Cold ischaemia time was 4hours kidneys weight was 101g . Kidneys were placed in standard position in right iliac fossa with aorta anastomosed to EIA and IVC to EIV with bilateral ureter into anterior wall of bladder. Before vascular clamping, heparin was administered. During anastomoses volume expansion with normal saline was done, mannitol and furosemide were given during reperfusion. In one event of hypotension, dopamine was started in titrated doses 5-8ug/kg/min and tapered gradually before end of surgery. Special emphasis were given to not keep systolic BP higher than 120 mmHg in view of infants kidneys. Post declamping diuresis was brisk and total urine output was 500ml intra operatively. Serial ABG showed no significant acidosis. Intraoperative renal Doppler showed flow in both the anastomosed vessel. TAP (Transverse abdominis plane) block was given with injection bupivacaine 0.2% for postoperative pain and patient was extubated without any complication.

In immediate post op period inj nitroglycerin was started at 5-10ug/kg/min and continued for 12hours targeted to SBP between 100-120 mmHg and gradually tapered. post-operative urine output was monitored hourly and was adequate injection heparin was started and injection ATG started on next day. Postoperative pain was managed with systemic opioids. Post-operative recovery was uneventful immunosuppressant were started and antihypertensive were continued on day 3 postoperative serum creatinine decreased from 4.3 to 1.4 with e GFR improved to 38ml/min/1.73m<sup>2</sup> at 4weeks post-transplant.

#### **4. Discussion**

Given the low incidence of paediatric transplantation, very less is mentioned in literature about its anaesthetic concerns. Graft failure however is a major concern in paediatric donors. Main difficulties with paediatric kidneys is early graft rejection, high rates of graft thrombosis, hyperfiltration injury, frequent rejection episodes and lack of long term survival outcomes [1]. Most common causes of early graft failure are vascular complications [2]. Peri-operative blood pressure management is important factor. Cautious fluid management and meticulous control of arterial pressure are cornerstones of their anaesthetic management. Thus good cardiovascular monitoring both intra operatively and post operatively in high dependency unit is essential. Hypovolemia should be avoided at any point of time with CVP maintained at around 10 mmHg.

#### **5. Conclusion**

En-bloc paediatric kidney transplantation is associated with excellent long-term allograft and patient survival and is a feasible strategy for increasing the transplant donor pool in carefully selected recipients [3]. According to the current literature, paediatric donor en bloc kidney transplantation is an alternative to utilize organs that would be discarded otherwise. The main problem is the increased frequency of vascular complications, especially vascular thrombosis, leading to graft loss [4]. Thus, a good anaesthetic management can play a crucial role in preventing graft loss.

#### **References**

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