



Feline Kidney Transplantation: An Introductory Insight

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Chronic kidney disease (CKD) presents an ongoing and debilitating challenge for cats and dogs, lacking a definitive cure. The introduction of kidney transplantation in 1984 marked a significant milestone, providing a novel therapeutic avenue for feline CKD, endorsed widely as a treatment option (Aronson, 2016). This progressive procedure is particularly recommended for cats in the early stages of decompensated chronic kidney disease or facing irreversible acute renal failure (Aronson, 2011).

Successful kidney transplantation hinges upon meticulous donor selection. Donors, aged between 1 and 3 years, must be in optimal health and undergo comprehensive screening through various tests, including Complete Blood Count, serum biochemistry profile, urinalysis and culture, FeLV and FIV testing, and Toxoplasma titre (IgG and IgM) (Budgeon et al., 2017). The harvesting process commonly targets the left kidney, with modern techniques like computed tomography (CT) angiography becoming integral for assessing renal vasculature and parenchyma for potential abnormalities (Bouma et al., 2003; Caceres et al., 2008).

Immunosuppressive agents such as Cyclosporin and Prednisolone play a pivotal role in kidney transplantation, both pre- and post-procedure (Gregory et al., 2000; Mathews et al., 2001). However, rejection becomes inevitable for cats failing the Cyclosporin challenge or testing positive for FeLV, FIV, UTIs, cardiovascular diseases, and other specific conditions (Bernsteen et al., 2000).

Furthermore, beyond immunosuppressive regimen and eligibility criteria, various intrinsic factors play a role. Considerations such as age, preoperative blood pressure, duration of anesthesia, and weight significantly impact post-transplantation survival rates (Snell et al., 2015). The success of feline kidney transplantation, therefore, relies on a meticulous balance of pharmaceutical choices and comprehensive patient assessments.

Various anesthetic protocols, including combinations of Atropine, Acepromazine maleate, Butorphanol, Ketamine, and Diazepam, along with isoflurane in 100% oxygen, nitrous oxide, propofol, etc., are utilized. However, the blend of isoflurane and nitrous oxide emerges as the optimal choice for anesthesia maintenance, according to research by Mehl et al. in 2005.

In renal transplantation, the left kidney is preferred due to the longer vein available for anastomosis (Bernsteen et al., 2000; Aronson, 2011). The harvested donor kidney is carefully implanted into the recipient using various methods such as End-To-End, End-To-Side, and Carrel patch technique.

The transplantation of a kidney also involves the implantation of the ureter, known as ureteroneocystostomy. Complications related to ureteroneocystostomy site are relatively common and include issues like stricture, obstruction by granulation tissue, leakage, and dehiscence, as documented by Gregory et al. in 1992. A viable alternative for

ureteroneocystostomy in cats undergoing kidney transplantation is the Ureteral Papilla Implantation technique, as outlined by Hardie et al. in 2005.

In summary, the optimal approach in feline kidney transplantation involves harvesting the left kidney from a young, healthy donor cat with a larger body size, excluding obesity. This procedure is typically recommended for cats in the early stages of decompensated chronic kidney disease, specifically CKD stage 3. Essential to the success of the graft is immunosuppression, with Cyclosporin and other drugs administered both before and after the operation.

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