

INTESTINAL AUTOTRANSPLANTATION WITH PORTAL THROUGH THE SPLENIC PEDICLE

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The creation of a portosystemic shunt and previous surgery are two of the main problems in the systemic-mesenteric vascular anastomosis in the intestinal transplantation.

In order to avoid these complications we designed (1992) a model of intestinal transplantation in dogs: the use of the splenic pedicle in segmental intestinal autotransplantation. The surgical complications of the graft, in addition to the method used for evaluation of early functionality, are described.

Material and methods: Beagle dogs weighing 12-16 kg were used. Under general anesthesia a 100 cm segment of ileum was isolated based on a terminal branch of the superior mesenteric artery and vein. The distal intestinal transection was 5 cm proximal to the ileocecal valve. The artery and vein to the isolated segment were cross-clamped and divided, and the graft was perfused via arterial with Ringer's lactate (4 °C). In 14 dogs the graft was anastomosed to the splenic pedicle, and so dissection of the splenic artery and vein was then carried out. A squeezing manoeuvre of the spleen previous splenectomy was carried out in order to preserve volemia. Once the splenectomy was performed the intestinal segment was placed in the abdominal cavity and an end-to-end anastomosis of the graft vessels to the splenic artery and vein was performed. Continuity of the small intestine was restored by end-to-end extramucosal anastomosis. 7 dogs were used as controls with the same technique but the mesenteric pedicle was anastomosed to the aorta and the inferior cava vein.

Different parameters were assessed perioperatively: suture timing, surgical timing, cold and warm ischemia duration, graft viability and functionality. Survival was measured one week after transplant.

Results: Intraoperative graft failure happened in 7 animals (3 in control group and 4 in «splenic group»). The long term follow up (14-24 months) of the 14 surgery surviving animals showed that 8 were alive (57.1 %) and six of them (43 %) maintained a normofunctionant intestinal graft without weight loss. All these animals belong to the splenic group.

The causes of death were: acute anaemia (4 cases), intestinal volvulation (1) and prolonged surgery (1).

Conclusions:

1. Management of the splenic pedicles does not imply particular technical difficulties. At the same time, the splenic area is rarely affected by previous common surgery.
2. Venous mesenteric drainage towards the portal system is more physiological than cava system models.
3. Splenic pedicle can be used if its necessary in intestinal transplantation.
4. Preservation of volemia is very important due to the difficulty of blood replacement in experimental models.