

**Conclusions:** Small bowel harvesting in the rat influences preservation, reperfusion injury and survival rate of the animal. This injury can be ameliorated with the use of UW solution if the preservation period is over 10 h.

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455 FP153

### **Pathophysiology and Treatment of Patients with Radiation Enteritis**

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**Background and Aims:** Therapeutic irradiation for intra-abdominal malignant disease always causes some degree of injury to the intestine. Radiation therapy is used with increasing frequency and risk of radiation enteritis increases similarly. **Patients:** We investigated 17 patients with radiation enteritis in the viewpoint of clinical features and treatment. Endoscopy and barium enema were performed to evaluate the lesion of the intestine. **Results:** All the patients were female and radiation therapy was performed for uterine cancer. The age of the patients was 51 to 74 years (average age  $\pm$  SD;  $63.2 \pm 7.5$  years). The numbers of the uterine cancer were 3 in stage I, 7 in stage II, 5 in stage III, and 2 in stage IV, respectively. Among these patients, 6 patients underwent surgery for uterine cancer. Symptoms included hematomelena (13), diarrhea (7), lower abdominal pain (5). The enteritis involved ileum (1), rectum (15), and ileum and rectum (1). The occurrence of the enteritis was diagnosed from 1 month to 16 years after radiation therapy. Concerning the time between occurrence of the enteritis and radiation therapy, the patients were divided into 2 groups. In 10 patients of one group, the enteritis occurred within 1 year after radiation, but occurred more than 4 years after radiation in 7 patients of the other group.

Thirteen patients underwent surgery for radiation enteritis. Indications of the surgery were fistula, hemorrhage, and stenosis. The surgical operations performed were as follows: colostomy (9), rectal amputation with colostomy (1), rectal resection (1), and ileal resection and colostomy (1). Postoperative courses were rather good in all the patients with surgery. The patients obtained disappearance or improvement of the symptoms of the disease. **Conclusions:** Although there are some problems in indication of the surgical treatment for radiation enteritis, adequate procedures for the disease improved the quality of life of the patients.

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456 FP154

### **Normothermic Pulsatile Oxygenated Rinse of Small Bowel Grafts Ameliorates Reperfusion Injury**

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**Aim of the Study:** To ameliorate preservation-reperfusion injury of small bowel grafts using a normothermic pulsatile oxygenated rinse solution designed for the metabolic and vascular needs of the

graft. **Methods:** 36 WAG male rats (300 g) were used as donors. The aortic patch and the portal vein were isolated and cannulated. All the grafts were preserved in Collins solution during 6 h. At the end of the period the grafts were randomized and assigned to 3 different groups (n = 12): a) Group A was immediately transplanted anastomosing the aortic patch to the left renal artery and the portal vein to the left renal vein of a nephrectomized recipient using a cuff technique. b) Group B was perfused with Ringer-Lactate during 25 min prior to the transplant using the same technique. c) Group C was perfused with a specially designed solution (UPV) during 25 min prior to transplant using the same technique as groups A and B. In those grafts perfused arterial pressure, arterial and portal flow, arterio-venous gasometries, and ionograms were measured during perfusion. Each of the groups was divided in two different subgroups (n = 6 in each one). Survival rate after 7 days was measured, and histologic damage was graded (Chiu's scale) in post-operative days 1-3-5. ANOVA and Chi-square test were used for statistical analysis. **Results:** Grafts perfused with both solutions showed reactivating metabolism of the bowel (expressed as oxygen extraction, CO<sub>2</sub> production, pH variation), however UPV solution showed better micro circulatory parameters (mean arterial pressure, outflow). Survival rate in group 1 was 45%, in group B 35%, and in group C 75%. Histological damage was markedly reduced in days 1 and 3 in UPV solution perfused grafts, and increased in group B if compared with transplanted and non-perfused animals. **Conclusions:** Isolated normothermic reperfusion of small bowel grafts with specifically designed reperfusion solutions ameliorates reperfusion injury and improves survival of the grafts.

### **Stomach**

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457 FP155

### **Laparoscopically Assisted Distal Gastrectomy**

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Technique of laparoscopy-assisted distal gastrectomy for early stomach cancer is presented. Insufflation is obtained through a Hasson trocar placed at the umbilical site. Two 12 mm trocars are placed at the lateral margin of the rectus muscle on both sides of the abdomen. Another 5 mm trocar is placed in the left upper abdomen. This is used to tract the stomach wall with a forceps. Using a Babcock forceps and Harmonic Scalpel (LCS) through the two 12 mm trocars, the omentum is cut and the right gastroepiploic vein and artery are exposed. These are clipped and divided respectively to expose the bulb of the duodenum. The stomach wall is lifted up to expose the posterior wall of the stomach and the right gastric artery and vein are exposed. These are clipped and divided. The omentum is cut down to the inferior pole of the spleen. The left g.e. vessels are clipped and divided to expose the greater curvature of the stomach. By lifting up the posterior wall of the stomach, the left gastric vein is identified and cut between clips. The left gastric artery is exposed and cut after placing four clips. The lesser curvature of the stomach is skeletonized. Here a 5 cm long incision is placed in the subxiphoid site and the stomach is exposed. The duodenum is transected one cm anal to