

In the group of 70% partial hepatectomy, 4 rats out of 15, were survived at operation. 2 rats were found to have hepatom or adenom, respectively.

In the electron microscopic study, the nucleus membrane of tumor cell were irregular and vacuole were scattered in cytoplasma. Mitochondria were deformed and endoplasmic reticulum were revealed canalicular formation in all groups.

Hence, it is concluded that prolongation of survival was noted in the ligated rats as compared to that in control rats. This prolongation may depend on the interruption of portal flow to the hepatom and liver regeneration on the non-ligated lobes.

B-25. STUDIES ON POSTOPERATIVE DISORDERS IN SMALL BOWEL

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We have studied on secondary malabsorption syndrome which was found after resection of bowel or intestinal anastomosis.

Clinical observation:

In recent 3 years, 7 patients with blind loop (BL) syndrome and 3 patients with short circuit anastomosis (SCA) (ileocolostomy) were treated in our clinic. They have almost complained abdominal uncomfotableness and in all cases, loss of bodyweight, anemia, and hypoproteinemia were observed. To research the movement of blind loop, actionpotential in intestinal wall was recorded. As result, irregular pattern and high activity, comparing with normal condition, were found in electromyogram. In both group of BL and SCA, fat absorption rate was remarkably decreased. These clinical findings were simillar to results in our experimental studies.

Experimental study:

Side to side anastomosis of ileum with blind loop (about 10 cm) and ileocolostomy as SCA were constructed in dogs. Dogs were all laparotomied in 3 and 6 months after operation, and changes of actionpotential and fecal fat excretion rate by I^{131} -Triolein were studied.

Electromyographically, blind loop has demonstrated higher potential especially in oral loop. On the otherhand, remained loop with SCA has showed generally lower activity. Fecal fat excretion rate were increased in both groups and it was more obvious in SCA group.

Against these situations, we have tried various type of anastomosis; end to side, reversed anastomosis or re-circulating loop in lower small bowel. Whether these trial methods contribute to improvement of postoperative malabsorption-remains to be determined.

B-26. THE STUDY FOR THE FUNCTION OF THE POST OPERATIVE STOMACH AND THE INTESTINE

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We have studied that the gastro-intestinal function underwent what changes by severance of the innervated nerves after gastrectomy, resection of the intestine or gastric replacement physiologically, histologically, clinically and experimentally.

We have researched the changes of a gastro-intestinal-smooth muscle electromyogram and the innervated nerves in the gastrointestinal wall after severance of the left gastric artery and the nervus mesentericus and removal of the celiac ganglion; in the clinical cases, X-ray examination and measurement of pH and temprature by means of radio capsule were performed in the substitutional stomach.

We concluded that there were a remarkable changes of the peripheral branches of the innervation, however, in the aspect of kinetic function, the function of the postoperative

gastrointestinal tract returned to normal in a short time and there was minimum influence.

B-27. PATHOLOGIC PHYSIOLOGY OF ACUTE FECAL PERITONITIS

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The animal experiments were done in order to prove the pathologic physiology of the acute fecal peritonitis which developed "shock" in the early stage of the onset.

The fecal materials that were excluded bacteria and aseptic fecal extract by several methods showed only slight toxicity to the animals.

As a causative factor, the endotoxin of gram negative bacteria was thought to be very important for early onset of the shock, in addition to hyponolemia due to marked loss of the circulating plasma.

B-28. AUTOTRANSPLANTATION OF THE ENTIRE SMALL INTESTINE: AN EXPERIMENTAL STUDY IN DOGS

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To determine the morphological and functional changes which occur following the autotransplantation of the entire small intestine, an experimental study was made in dogs.

The anastomosis of the superior mesenteric vessels was carried out with special vascular clamps using suturing technique. The small intestinal blood flow was occluded for about forty minutes during the operative procedure. Heparinisation and perfusion were not used.

There were fourteen long-term survivors up to six months following the operation. Protracted diarrhea, loss of weight and malabsorption were observed. These phenomena subsided gradually in three or four months following the operation. The animals were examined at various times postoperatively. Morphological, roentgenological and functional examinations were made. The severed mesenteric lymphatics regained the continuity in a short period of time. The intestinal epithelial change and the disturbance of the motor function remained longer and this fact should be some of the contributing factors to the diarrhea and malabsorption following the transplantation.

Some clinical implications are suggested.

B-29. A STUDY OF WATER AND ELECTROLYTES METABOLISM IN INTESTINAL OBSTRUCTION WITH ^{24}Na , ^{42}K AND ^3H

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It is well known that the loss of water and electrolytes during intestinal obstruction. Our study is based on the concept that the active suction therapy by ileus tubing during intestinal obstruction, resulting the loss of large amount of digestive solution. We utilized the radioactive isotope ^{24}Na , ^{42}K , and ^3H . We examined after 48 hours among the dogs which was exposed for simple intestinal obstruction, resulted by ligation at middle or end portion of small bowel. The total exchangeable Na, K, showed remarkable decrease in both cases of middle and end portion obstruction. The exudation of water and electrolytes from gastro-intestinal tract is mild in stomach but the remarkable exudation was observed in small bowel. The obvious balance was observed between upper and lower portion of bowel by obstruction. The absorption from small bowel revealed the decrease during the intestinal obstruction and the obvious balance between upper and lower portion of bowel by obstruction. At the conclusion the intestinal obstruction causes higher exudation and slower absorption and resulting the retention of water and