

B-8. EXPERIMENTAL STUDIES ON HEPATOVENOUS CONGESTION WITH SPECIAL REFERENCE TO SIMULTANEOUS MEASUREMENT OF RADIOACTIVE COLLOIDAL GOLD AND ROSE BENGAL

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In order to study circulatory disturbance of the hepatovenous system the left hepatic vein trunk was ligated in the dog, so that venous congestion was produced in the left side of the liver while the right lobes were kept intact. At various post-obstruction intervals radioactive colloidal gold and/or rose bengal were intravenously injected and liver specimens were removed 10 min. later from the occluded and "open" lobes of the same liver. Then the isotope concentration (radioactivity per unit weight of specimen) was determined. When ^{198}Au colloidal gold and ^{125}I rose bengal were simultaneously injected the specimens were analyzed with a gamma ray spectrometer for radioactivity of each isotope.

It was disclosed that for the first postoperative month the difference in rose bengal concentration was smaller than that in colloidal gold concentration between the occluded and open lobes of the liver. This was confirmed by simultaneous injection of both substances. Such dissociation between rose bengal and colloidal gold concentrations was also observed when instead of hepatic vein portal or hepatic arterial branch was ligated.

When liver specimens were removed 10, 20 and 30 min. after rose bengal injection the 10th minute specimen showed the maximum count in the control liver as well as in the open lobe of the liver with hepatic vein ligation whereas in the occluded lobe radioactivity increased from the 10th minute to 30th minute samples.

These results lead to the conclusion that at least in the acute stage of hepatovenous obstruction rose bengal excretion is delayed while its uptake remains relatively unaffected. This seems to be rather common in other types of acute circulatory disturbance of the liver. It is also suggested from this experiment that decrease in blood flow velocity may increase rose bengal uptake per hepatic blood flow and vice versa.

B-9. CLINICAL OBSERVATION OF OCCLUSIVE LESIONS OF CELIAC AND SUPERIOR MESENTERIC ARTERY

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We have had twelve cases of occlusive diseases of celiac and superior mesenteric artery. Among them, six (50%) were associated with coarctation of thoracoabdominal aorta.

In only seven cases, developed abdominal symptoms. The rest of them were free of abdominal symptoms.

Inferior mesenteric artery is the main collateral channel, being diagnostically significant. In six cases, it was clearly shown as so-called meandering artery. In diagnosis of the site and extent of the stenosis, aortography in lateral projection is useful.

Main abdominal symptoms were abdominal pain, diarrhea, vomiting and constipation. Fluoroscopic examination of the gastrointestinal tract was not remarkable. In all the cases, systolic murmur was audible in the upper abdomen.

We started investigating hepatic blood flow using colloidal gold in order to know the grade of circulatory insufficiency seen in these patients.

Surgery was done in six cases obtaining satisfactory results.

Since any idea about the relationship between abdominal symptoms and hemodynamic alteration is not obtained yet, operative indication could be determined after confirming the coexistence of the stenotic lesions and these characteristic abdominal symptoms.