in the films taken in the horizontal position between the simple and strangulated obstructions, but in the roentgenograms obtained with the animal in the upright position, there was considerable difference, in that 50% more fluid levels were present in films of animals with strangulated obstruction than in those with simple obstruction. The earliest appearance of gas accumulation or fluid levels, both in the simple or strangulated obstruction, was 3 hours after the obstruction.

In obstructions of the ileum, there was considerable difference between roentgenograms obtained from animals with strangulated and simple obstructions. The films of the animals with an associated strangulation showed evidence of gas accumulation and fluid level formation within one to 2 hours after the obstruction, whereas in the films of animals with simple obstruction, the earliest evidence of gas accumulation was 5 hours, which, however, did not become very marked until 7 to 9 hours after the obstruction. Similar results were obtained in strangulated obstruction of the sigmoid.

In comparing the roentgenograms taken in the horizontal position and those taken with the animal in the upright position, there was relatively little difference except that possibly gas alone without the evidence of fluid could be demonstrated earlier than gas and fluid. However, the findings of gas and fluid as evidenced by multiple fluid levels are so definite and pathognomonic, it is believed that when it can be demonstrated it is of much more diagnostic importance than gas alone.

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Experimental Obstructive Jaundice. Effect on Fibrinogen and Coagulation of the Blood.

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There has been very little work done to convince one that a deficiency of fibrinogen in the blood does or does not result from obstructive jaundice and cause an increase in the coagulation time. As fibrinogen plays such a prominent rôle in blood coagulation, it seems feasible that an experimental investigation should be made to determine the effect of obstructive jaundice on the amount of fibrinogen in the plasma and the subsequent effect on the time of coagulation of the blood.

Twenty-seven dogs were subjected to acute obstructive jaundice by ligating and dividing the bile ducts. Estimations of the fibrinogen content, icterus index, and coagulation time of the blood were made at intervals. Six of the animals died within 3 or 4 days after operation. Of the remaining 21, all died (average length of life 31.6 days), the only assignable cause of death being diffuse hepatitis. This was found in an overwhelming majority of the cases to be fatty necrosis with degeneration in the centers of the lobules.

Conclusions. Fibrinogen content of plasma is not decreased but actually increased in acute experimental obstructive jaundice, probably due to irritative effect of bile on liver. Coagulation time remained above normal limits, but did not parallel the fibrinogen content of the plasma. Coagulation time is not a satisfactory index of a hemorrhagic tendency in the presence of jaundice. Diminution of fibrinogen content does not parallel the degree of liver destruction. The Wu method for determination of fibrinogen is not satisfactory when exact quantitative analysis of blood proteins is done. The Tyrosine equivalent for dogs was found to vary from 12.5 to 19.7. This was learned after determinations were made from 24 samples of blood. For comparative analysis as herein used, the Wu method serves the desired purpose.

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Motility of Gastro-Intestinal Tract of Rats on Vitamin D Deficient Diet with Varied Minerals.

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Previously we reported[1] that rats fed a deficient vitamin D diet with unbalanced minerals show a marked hypomotility of the gastro-intestinal tract. Subsequently[2] it was demonstrated that rats fed a diet deficient in vitamins A and D but with an adequate mineral balance show a gastro-intestinal motility similar to that of normal animals. The hypermotility produced by the absence of vitamin A[3] was apparently balanced by the hypermotility produced

[1] Menville, L. J., Blackberg, S. N., and Ané, J. N., PROC. SOC. EXP. BIOL. AND MED., 1929, **26**, 758.

[2] Menville, L. J., Ané, J. N., and Blackberg, S. N., PROC. SOC. EXP. BIOL. AND MED., 1930, **27**, 894.

[3] Gross, L., *J. Path. and Bact.*, 1924, **27**.