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Effect of Whole Bile and Bile Salt of Swine on Gastric Motility of the Dog.

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While carrying on a clinical evaluation of the effects of feeding dried whole bile to patients suffering from a variety of lesions it was noted that the symptom of anorexia was often relieved.[1] Sensations of hunger occurred within a period of a few minutes to a few hours although in an occasional instance anorexia has been increased. Because of these observations we conceived the possibility that gastric contractions might be affected, or even called forth from a quiescent stomach. Accordingly, we determined to investigate the response to dried bile of the stomach of fasting dogs.

Method. Three dogs were prepared by operation with gastric fistulae after the method of Carlson[2] and after training and conditioning the animals, the gastric tonus and motility was measured by the balloon-manometer method. A condom balloon 8-10 cm in length was attached to the end of a No. 10 catheter and a No. 8 catheter attached alongside for gastric injection. The catheters and balloon were inserted through the gastrostomy opening into the fundus of the dog's stomach and then 50 cc of air was injected into the balloon and the catheter connected to a bromoform manometer. The 50 cc of air usually created a pressure of 3-6 cm.

The gastric tonus and motility were then recorded by Patterson's kymographic ink recording method.[3]

The dried whole bile used in the experiments was swine gallbladder bile prepared by vacuum distillation at low temperature.* As sodium α-glycohyodesoxycholate is the principal bile salt in swine bile,[4] it was decided to test the effect of this salt as well as whole bile.

From analysis of the results of the foregoing preliminary study it would seem that when either dried whole swine bile or sodium α-gly-

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* Supplied by Parke, Davis and Company.

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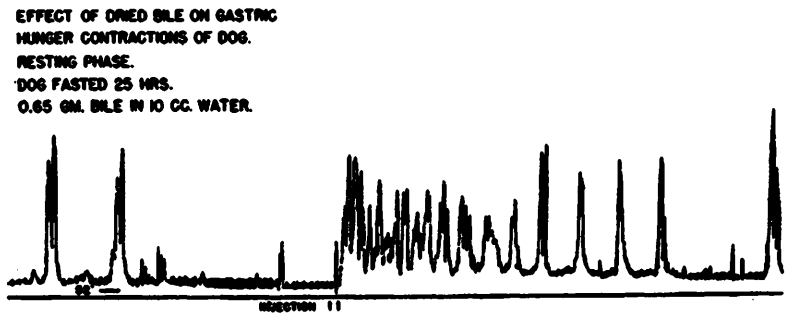

FIG. 1.

Note immediate effect, increase in tone and production of forceful contractions after injecting whole bile into stomach during quiescent phase.

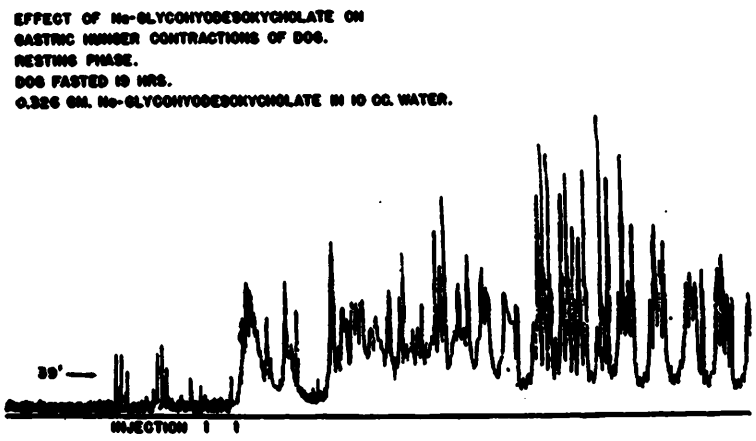

FIG. 2.

Note immediate effect, increase in tone and production of forceful contractions after injecting sodium α-glycohyodesoxycholate into stomach during quiescent phase. Effect the same as obtained with whole bile.

cohyodesoxycholate dissolved in water are placed in a dog's stomach during the quiescent phase gastric hunger contractions are produced (Figs. 1, 2). This response occurred in all of 24 experiments using whole bile and in all of 5 experiments using the bile salt.

On the contrary, when dried whole swine bile was placed in a dog's stomach during the contraction phase, it apparently caused a definite but relatively short inhibition of contractions in 21 of 34 experiments.

The same inhibitory effect on gastric contractions was noted in 6 of 13 experiments when sodium α-glycohyodesoxycholate was used. The effect, however, was less marked than that obtained with whole bile.

Introduction of plain water to the amount of 10-15 cc caused mild inhibition of gastric hunger contractions in 8 of 26 times attempted.

This effect is much the same as that obtained with the bile and sodium α-glycohyodesoxycholate solutions although the bile inhibition occurred somewhat more consistently.

If the stomach happens to be in a quiescent phase, the production of contractions might conceivably explain the prompt hunger sensations and relief of anorexia seen clinically.

The mechanism is not clearly understood as yet. Whether the response occurs because of an irritative phenomenon on the mucosa of the stomach or because of an effect on the intrinsic nerves cannot be stated at present.

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Attempts to Demonstrate Poliomyelitis Virus in Extraneural Tissues.*

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The recovery of the virus of poliomyelitis from nasopharyngeal washings[1] and the recent positive results with sewage,[2] stools of poliomyelitis patients[1, 3, 4] and healthy carriers[5, 6] has again raised the question of virus distribution in tissues other than those of the CNS. Studies with experimental animals have demonstrated the presence of viruses such as rabies[7] and poliomyelitis[8–12] in the extraneural tissues following intracerebral or intravenous injections. In the present work an attempt was made to recover the virus of polio-

* This work was aided by a grant from the Clara Ward Seabury Clinic for Infantile Paralysis.

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