12 (1190)

The action of succinate, malate, tartrate and citrate on the isolated intestine.

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Segments of the isolated intestine of the rabbit suspended in Locke's solution and containing sodium succinate exhibited increased activity in concentrations of *N*/30 to *N*/200. Stimulation was also observed in *N*/10 succinate, but this was usually preceded by primary depression. Sodium malate in concentrations of *N*/10 and *N*/30 caused depression, the rhythmic contractions disappearing almost entirely for a period of several minutes. This was followed, however, by improvement while the intestinal segments were still in contact with the salt. Stimulation was observed in tests with *N*/70 to *N*/100 sodium malate. Sodium tartrate dextro in Locke's solution produced the following results: A solution of *N*/10 made up by adding the salt to Locke's solution caused promptly a drop of tonus; rhythmic contractions became weak or disappeared entirely for a few minutes. The fact was less marked, however, with the same concentration of tartrate when it was substituted for an equivalent amount of sodium chloride. In this case a moderate decrease only of amplitude without a change of tonus in the small intestine was noticed. The large intestine showed a marked decrease of tonus and complete disappearance of rhythmic contractions. With weaker concentrations of tartrate, such as *N*/20 to *N*/50 a decrease of tonus was obtained, which was greater in segments of the large intestine, the effect diminishing with increase in dilution. The rhythmic contractions were usually augmented in force, especially in the ileum, the effects being the same with isosmotic and with hypertonic solutions.

Observations on the action of citrate indicated that a solution of *N*/400 may increase the force of the contractions and sometimes also the tonus. The effect was different with more concentrated

solutions. Tonus was depressed in practically all cases. Although the amplitude of the rhythmic contractions showed considerable augmentation with a solution of $N/200$, this was often preceded by a preliminary decrease. Total inhibition of activity was first observed with solutions of $N/50$.

13 (1191)

The nature of the toxemia of intestinal obstruction. Preliminary report.

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Confirming the results of previous investigators we found that dogs with an isolated closed loop of duodenum or jejunum die in 48–96 hours, in most cases with perforation of the isolated loop and general peritonitis. But there is usually no excessive vomiting and hence no fatal dehydration of the body tissues.

In twenty-five dogs a segment of the jejunum was isolated, washed with ether and sterile water, or sterile salt solution, and both ends closed. Sixteen of the dogs died in 4–6 days, all of them showing perforation of the loop and general peritonitis. The other nine dogs lived indefinitely (some of them to date, 6 months) in good condition. Some of the dogs were examined 1–3 months after the operation. In every case, except one, the loops were found closed, the mucosa normal, some thick fluid in the lumen of the loop containing *B. coli* and a small coccus. In one dog in good condition examined seven weeks after the operation the loop was found perforated, but there was no peritonitis and the fluid contents of the loop was sterile.

When the isolated and closed loops of the jejunum is sterile complete occulusion of the blood vessels to the isolated loop has no effect on the dog, but if the loop is not sterile, the occlusion of the circulation in the loop causes death in 24–48 hours with the usual symptoms of complete intestinal obstruction.

In nine dogs a segment of the lower duodenum was isolated,