

media were used. Fifty cc. of these various agar media were put in flasks and sterilized. After cooling to 50°C. Coli-phage was added in amounts varying from 0.1 cc., 0.3 cc., 0.5 cc., 0.7 cc., 1 cc. and 2 cc. and poured into petri dishes. The surface was seeded and smeared with spreader, then incubated for 21 hours. The best results were obtained when 0.3 cc. and 0.5 cc. was added to the 50 cc. agar media. Increase in concentration of phage causes inhibition of *B. coli* growth. The eosin methylene blue media has worked best in our hands. These plates must be protected from light. The phage is destroyed or inhibited when exposed to light. Eosin Methylene Blue phage media can be stored for days in the dark in the icebox and retain its original phage content. The *B. coli* susceptible colonies lose their shining luster, are smaller and irregular. A relatively clear, transparent zone develops around the *B. coli* phage-sensitive colonies. When viewed against a light background the ratio of phage-resistant to phage-sensitive *B. coli* colonies can be readily determined.

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Influence of Vascular Impairment on Absorption of Bacteria into Blood from Upper Intestinal Tract.

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Vercellano found that there was absorption of bacteria during 24 hours, following ligation of the superior mesenteric vessels to the duodenum. His technic consisted of ligating both the superior mesenteric artery and vein, and withdrawing specimens of blood directly from the rabbit's heart at time of ligation and after 1, 4, 12, 18, and 24 hour intervals culturing this blood in broth for 24 hours. His conclusions were that the bacteremia present was due to the lack of blood supply. However, he failed to test absorption of bacteria within intervals of less than one hour.

Twenty-five dogs were used for this experiment under nembutal anesthesia (3% solution, using 1 cc. per kilo). In the control series (8 dogs) a 3-inch midline incision was made in the abdomen. Fifty cubic cm. of a suspension of *B. prodigiosus* (24 hour agar culture

using 50 cc. of saline) was injected into the duodenum with a fine needle syringe. At 5 minute intervals, 2 drops of blood were taken from femoral vein and plated on agar.

In the second series (8 dogs) used the above technic and ligated 3 large rami of the superior mesenteric artery to the duodenum before injecting the *B. prodigiosus* suspension. Blood was withdrawn every 5 minutes for one hour and plated on agar.

In the third series (9 dogs) used the above technic with the exception that the blood was withdrawn at intervals for a 2-hour period. (See chart.)

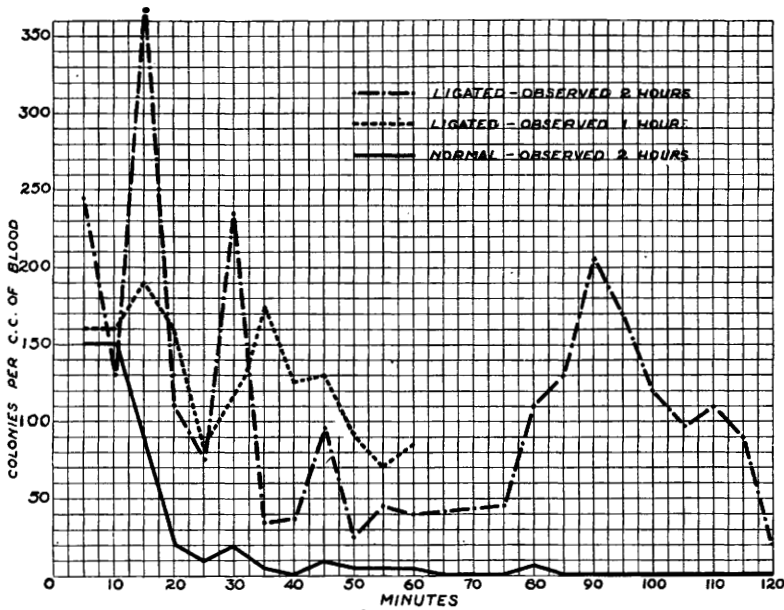


FIG. 1.

Ordinate represents the number of bacteria per cc. of blood from femoral vein. Abscissa represents time in 10 minute intervals.

B. prodigiosus injected into the duodenum and cultures taken from femoral vein; results are represented by continuous line. Same technic, except superior mesenteric artery, ligated, represented by the dot-dash line in one series for 2 hours, the dotted line prolonged for only one hour after injection.

The abscissa represents the time in minutes. The ordinate represents the number of colonies per cc. of blood.

Our results show that in the control series we have some slight absorption from the intestine immediately, while in the other 2 series, there is a marked increase in the rate of absorption.

Therefore, any disturbance of the arterial blood supply of the small intestine (especially the upper portion) causes increase in rate of absorption of bacteria into the blood from the small intestine.