

duce growth of germs—the greater the stagnation the more luxuriant the growth. In the case of gastric sarcinae, retention of food is generally necessary for, when these micro-organisms are found in the contents of the stomach, advanced organic obstruction of the outlet of the stomach is almost always present. To find sarcinae without obstruction has never been the experience of the writer. A transient occurrence of the germs has been observed without stenosis of the outlet by some clinicians, but even this has never come under his personal observation.

R. Schmidt states that he found sarcinae ventriculi in a case of cancer of the œsophagus and also in a case of gastric adhesions due to tuberculous peritonitis. These are, however, very exceptional findings. In practice, the presence of sarcinae in the gastric contents should be looked upon as suggesting obstruction of the outlet of the stomach; and the physician should then proceed to make a further examination for the same condition by means of motor meals, radiographic examination, etc.

It should be remembered, however, that although sarcinae ventriculi suggest obstruction of the outlet of the stomach the converse is not true for, in a considerable proportion of cases of pyloric obstruction, sarcinae ventriculi are never present.

The condition of the secretory function is a factor in determining the growth of sarcinae as it is of most other organisms. The sarcinae ventriculi appear to grow best in the presence of a good deal of free hydrochloric acid. This is in marked contrast to the growth of Boas-Oppler bacilli, which is most luxuriant in the absence of free hydrochloric acid. Sarcinae, however, will grow in hyposecretion of gastric juice and even in the absence of free hydrochloric acid, and Boas-Oppler bacilli are not uncommon in the presence of free hydrochloric acid. In the differential diagnosis of benign from malignant obstruction of the outlet these facts must be kept in mind.

In pyloric obstruction due to peptic ulcer common findings are normal or excessive secretion of the gastric juice and sarcinae ventriculi. If in such a case cancer becomes engrafted on the ulcer there is generally, for a time, no marked change in the gastric juice. Frequently, however, after a few weeks, there commences a gradual diminution of gastric secretion. Then, both the Boas-Oppler bacilli and sarcinae are frequently found in the gastric contents. This diminution of secretion may continue until free hydrochloric acid is no longer found, but both micro-organisms may still be present. This renders the differential diagnosis of cancer and peptic ulcer difficult in such cases. The test of Wolfe