

terference with the vermicular movements of the organ. But, if the ulcer progresses, it then frequently leads to perforation and, by escape of the contents of the stomach, gives rise to general and usually fatal peritonitis.

In respect to extent and size numerous gradations occurs, and the form of the stomach is still more irregular, when several ulcers become confluent.

CAUSES.

The causes of simple gastric ulcers are not sufficiently known. Probably several factors concur in their production. We may assume, as probable, that a partial disturbance of nutrition, due to disease of the blood-vessels, occasions a circumscribed gangrenous destruction of mucous membrane. The hypothesis, that an altered condition of the gastric juice gives rise to the ulcer, appears to me to be unfounded; nevertheless it cannot be denied that the vermicular movements of the stomach and the action of the gastric juice hinder the cicatrization and consequent healing. Without doubt, similar ulcers occur on other mucous surfaces; but, on the one hand, they are not followed by the same severe consequences, as in the simple ulcer of the stomach; and, on the other hand, they heal much more readily. Under unfavorable circumstances, as has been mentioned, the ulcer ends in perforation of the stomach and fatal peritonitis; but this occurrence will not rarely be prevented by the circumstance that the base of the ulcer has formed adhesions to some of the neighboring organs. Such adhesions are formed corresponding to the seat of the ulcer, more frequently between the stomach and pancreas or duodenum, and also with the left lobes of the liver, the anterior walls of the abdomen and omentum, the spleen, the diaphragm, the colon, etc. If the loss of substance be small and the adhesions to the neighboring parts firm, life may be prolonged for a considerable period. But if the loss of substance be great, the function of the stomach will, in spite of the cicatrization, be much disordered, and the nutrition of the animal economy will suffer severely in consequence. Besides, even with firm adhesions, subsequent perforations may occur, from softening of the false membrane.

SYMPTOMS.

The symptoms which accompany ulcer of the stomach during life are very variable. Sometimes for a long interval the symptoms are very insignificant or may be entirely absent; but, for the most part, disorders of the stomach manifest themselves. Generally we observe a very painful sensation in the epigastrium, of weight, or drawing together. By pressure in the region of the stomach, a fixed, painful spot is detected. But these phenomena are also manifested in chronic gastric catarrh, and in carcinoma of the

stomach; and either one of these complaints may be confounded with simple gastric ulcer.

The appetite is usually more or less disturbed, occasionally unchanged, and oftentimes increased. Yet the patients complain of slow digestion after meals, of pains, of pyrosis, eructations, etc. As the disorder increases, retching and vomiting make their appearance. The pain is generally fixed, but not confined to the same spot. All these symptoms, as is evident, are not pathognomonic, and physicians are, therefore, at an early period of the disease not in a position to make a positive diagnosis. The hæmatemesis is of greater importance, and it is also one of the most dangerous symptoms, from its dreaded tendency to relapse. Vomiting of blood occurs with varied intensity. The vomited matters are either only slightly tinged with blood, or are colored chocolate brown, or like coffee grounds, the dark color arising from the action of the gastric juice upon the blood effused into and detained for some time in the stomach.

Should, during the course of ulceration, a larger blood vessel be eroded, the hemorrhage might be sufficient to cause immediate death, or at all events the highest degree of anæmia, and exhaustion would result. A feeling of weight and fullness of the epigastrium frequently precedes the vomiting of blood. The hæmatemesis may take place at any period of the disease. The results of profuse vomiting of blood are similar to hæmorrhages all over the body—syncope, pallor, coldness of the extremities, feeble pulse, etc. Sometimes hemorrhage takes place without vomiting. If a patient suddenly turns pale after a momentary feeling of weight and heat in the epigastrium, and, on examination, the region of the stomach yields a hollow percussion sound; if the pulse becomes feeble, and syncope comes on, from these symptoms we may conclude that an internal hemorrhage has taken place. Such an internal hemorrhage may occasion death without vomiting as the bleeding generally occurs during digestion. Bodily and mental emotions may induce it, but especially any excitement of the circulation. Emetics also, for which the patient often craves, may bring it on.

Several stages of this disease may be distinguished. In the first, the formation of the ulcer occupies a considerable time for its completion, the chief symptom being simply a kind of gastralgia, sometimes indeed of a most intense degree. The pains present nothing characteristic; they may be continuous and fixed or paroxysmal, and may be very easily mistaken for nervous gastralgia. The occurrence of pain in the spine opposite the epigastrium is also not characteristic, being found in other gastric affections. Hence, in the early stage, ulcer of the stomach is very difficult to diagnose. Palpation reveals at most a fixed spot, where pain is increased by pressure, and only in the case of