CONSERVATIVE SURGICAL TREATMENT OF ULCER OF THE STOMACH AND DUODENUM*

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MANY of the steps in our progress are directly traceable to suggestions gained from a study of the views expressed by our forebears, although in their time, their ideas may have been thought untenable. Evidently Hippocrates was none too optimistic about the future of gastric surgery for he stated that accidental wounds of the stomach were deadly. Three hundred years later, Galen commented that wounds of the stomach had been known to heal, although seldom. Early in the sixteenth century, Fallopius recommended suturing wounds. Some of the methods used to secure closure of the wounds were novel. At one time, after approximating the edges of wounds, ants' heads were employed as clips; the mandibles were aseptic by virtue of the formic acid normally present in them. After the ants closed their jaws, the bodies were cut off and the heads remained attached until the wounds were closed.

In 1810, Merren began experimental work; he attempted pylorectomy in dogs to determine the possibilities of gastric surgery. About 1876, Gussenbauer and Winiwarter resumed his work and with moderate success. Billroth likewise had been studying the problem and, in 1877, prophesied that gastric resection would be the next step in the development of surgery of the stomach. He was the first to carry out the operation successfully in man (1881) and the procedure later became known as the Billroth I operation. Pean had attempted pylorectomy in one of his cases in 1879, and Rydygier had tried it in 1880. It is probable that Nicoladoni proposed gastrojejunostomy that same year, but it remained for Wolff to employ the operation with a good palliative result in a case of advanced carcinoma of the pylorus; he gave the operation its name. Gastrojejunostomy by the retrocolic approach was devised by Courvoisier in 1883. By 1884, Ransohoff, of Cincinnati, was performing the operation. The year 1885 found von Hacker also using posterior gastrojejunostomy and Billroth discarding his first method of gastric resection in favor of the procedure now known as the Billroth II operation.

Although a clear-cut distinction between gastric and duodenal ulcer was not made until the twentieth century, nevertheless reports in the literature indicate that gastric ulcer was recognized as early as 1600: two cases of duodenal ulcer were recorded in 1817. Even though these lesions undoubtedly are somewhat allied, they should be looked upon as distinct entities. A fact which stands out is the extreme rarity of malignancy in the duodenum and the relative frequency of malignant ulcerations in the stomach. In the few instances of primary malignancy of the duodenum which have been reported, it has been difficult to prove that the disease has been a sequel to chronic duodenal ulcer. However widely the statement may be contested, it is known that there frequently is some association between chronic gastric ulcer and certain forms of malignant disease of the stomach. Often it is impossible grossly to distinguish between carcinomatous gastric ulcer and ulcerating carcinoma.

PATHOGENESIS OF GASTRIC AND OF DUODENAL ULCER

The problem of the origin of gastric and of duodenal ulcer has been studied from the clinical, experimental, anatomic and pathologic standpoints. Approach to the study of this problem is difficult, especially experimentally, since these lesions are peculiar to man. Cohnheim divided the problem into two parts, one dealing with the cause of the original defect and one with the cause of chronicity. That an acute ulcer may become chronic is a reasonable assumption; nevertheless it is an open question whether chronicity involves fundamental principles other than those involved in the origin of the original defect. During the first decade of this century, the question of the origin of ulcers centered around the theories of Rokitansky and Virchow who believed that ulcers were the issue of the combined action of localized vascular disturbance with focal nutritional changes and the digestive action of the gastric secretion on devitalized tissue. In principle, this hypothesis is held today. Aschoff adopted Cohnheim's attitude and attempted to explain the cause of erosions on the one hand and the factors producing chronicity on the other. He grouped the factors tending to produce chronicity under the mechanical functional theory.

The characteristic lesions of peptic ulcer usually occur in the mucosa of the lesser curvature; they are found therefore in that region which may be exposed to an acid medium or on which the gastric contents may impinge with considerable force. Experimental investigations revealed that it was difficult or impossible to expose the gastric mucosa constantly to an acid medium by administering acid. It was believed that such exposure might be brought about by eliminating the secretions that are poured into the duodenum beyond the pylorus and which tend to neutralize the acid which has not been neutralized in the stomach. When this was accomplished by various experimental anastomoses, ulcer developed in almost every instance on the duodenal side of the anastomosis. It has not been difficult to produce acute ulcers experimentally, but only recently has it been possible to produce chronic lesions.

In a series of experiments carried out in an attempt to re-
produce the changes in the liver resulting from the use of cinchophen, Bollman found that gastric ulcer developed in some dogs after use of the drug. According to our experience, there are few instances in which gastric ulcer develops after taking ordinary chemicals into the stomach.

Infection and inflammation undoubtedly play a part in the etiology of ulcer of the stomach and of the duodenum. A striking example of this is the rather extensive gastritis that is found in some cases. It is surprising how well some of the patients get along after foci of infection are cleared up. This is an important consideration in the conservative treatment of ulcer of the stomach and the duodenum. However, in many of the cases, it will be found that infection is not responsible for the original development of ulcer.

Knowledge of the pathogenesis of ulcer has remained almost stationary in spite of the great amount of research work done. One thing which we have learned about this phase of the subject is that certain types of individuals are more likely than are others to have peptic ulcer. This is particularly true of duodenal ulcer. Often the condition responsible for the digestive disturbance is not true duodenal ulcer but rather, an inflammatory process which has been designated “duodenitis.” There may be no demonstrable break in the mucosa, although occasionally pin-point ulcerations may be found. The roentgenologic examination will disclose a deformity of the cap of the duodenum without any sign of a crater. A history of hemorrhage is common in this group of cases.

Many of the patients in whom these lesions develop are of nervous temperament; they are likely to be artistic and highly intelligent. Unfortunately, this type of person does not respond well to surgical treatment. The result of almost any operation is likely to be unsatisfactory, partly because of the functional nature of the complaint and partly because of the tendency to form secondary lesions. In cases with such a background, surgical treatment should be avoided until it is evident that it is absolutely necessary because of persistent pain, hemorrhage or obstruction.

We know that the chemical action of pepsin-hydrochloric acid, trauma to the mucosa, infection or toxins, a poor general systemic condition and irregular habits of living are factors in the development of peptic ulcer. Any logical treatment of peptic ulcer, whether medical or surgical, must be directed toward correction of these recognized etiologic factors.

**Gastric Ulcer**

We know that sometimes the symptoms of gastric ulcer may be relieved more readily through a medical regimen than are those symptoms resulting from duodenal ulcer. In a few instances in which there is reason to feel that the lesion is benign, one might be justified in offering a trial of medical management providing the patient can be kept under close observation. Up to the present time, we have no clinical or roentgenologic criteria which will determine whether there is an area of malignancy in the border of a chronic gastric ulcer, and so it is evident that the lesions must be removed and microscopic study made before we can be certain of the nature of the lesion. In certain patients, the symptoms will subside and the large crater defect produced by a gastric ulcer will not be visible after a short period of rest, relaxation, and dietary regimen. Nevertheless, if exploration is made at a time when it is presumed that ulceration is almost healed, one may find that he has been deceived, and that there is still a fairly prominent ulcer present. Probably we have all had this experience and so there can be no question but that such a situation obtains in at least some of the cases in which patients are comparatively symptom-free under carefully regulated regimens.

Even in the light of present day methods of diagnosis and greatly improved medical treatment, we think that early operation is advisable. However, it should be emphasized