Clinical Differences between Gastric Ulcers with and without Duodenal Deformity

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In 1926 Wilkie reported 53 per cent of patients requiring resection for benign gastric ulcers had associated duodenal ulcers.[7] Gastric ulcer with associated duodenal ulcer or roentgen duodenal deformity has been designated "secondary" gastric ulcer; that unassociated with duodenal ulcer or roentgen duodenal deformity, "primary" gastric ulcer.[6] It has been suggested that secondary gastric ulcers are more persistent and complicated and are more often operated upon than are primary ulcers.[1, 2, 3, 6] The present study confirmed the clinical importance of this distinction.

Materials and Methods

Records of 46 patients hospitalized at Boston City Hospital (BCH) and 44 patients at University Hospital (UH) during 1964–65 with radiographically demonstrated benign gastric ulcers were reviewed. Two physicians reviewed the records without knowledge of the radiographic findings and all roentgenograms were as-

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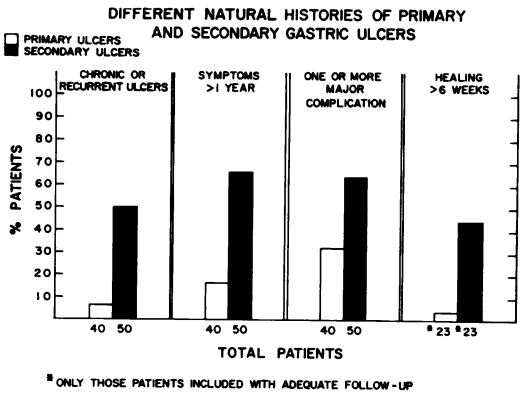

FIG. 1. Different natural histories of primary and secondary gastric ulcers: Acute vs. chronic or recurrent; duration of symptoms; major complications; and rate of healing. All differences significant ($P < .01 - \chi^2$ test with Yate's modification). This graph includes all patients studied at University Hospital and Boston City Hospital. The same contrast was present when each hospital was evaluated separately.

sessed by one radiologist without knowledge of the clinical findings. The ulcers were classified as acute, chronic or recurrent; radiographic demonstration for more than 6 months was the criterion for chronicity. An ulcer was considered recurrent if an initial ulcer had been seen to heal radiographically and another ulcer in the same location or elsewhere was later demonstrated. The chronic and recurrent ulcers were grouped together. Rate of complete healing was assessed either by repeated roentgenograms or from pathology reports of surgical specimens and classified as greater or less than 6 weeks. Measurements of ulcer crater sizes were made. Ulcers within one inch of the pylorus were classified as prepyloric, those between one inch of the pylorus and the incisura as antral, and those above the incisura but below the fundus were classified as in the corpus. Only unequivocal findings of deformity of the duodenal bulb were accepted.

Results and Discussion

The high incidence of secondary gastric ulcers (48% of gastric ulcers at BCH) confirms Wilkie's original report.[7] The even higher incidence at UH (64%) may reflect the higher percentage of referred patients with complications.

Secondary ulcers both at BCH and UH were more frequently chronic or recurrent and typically produced symptoms for more than one year in contrast to primary ulcers which were more frequently acute and typically produced symptoms for less than one year. The incidence of major complications (bleeding requiring transfusion, obstruction, penetration or perforation) was significantly higher among the secondary ulcers. Primary gastric ulcers healed (radiographically or at operation) in less than 6 weeks more frequently than did secondary ulcers (Fig. 1). Only four of 40 patients with primary ulcers (10%) were operated upon for complications or recurrences compared to 12 of 50 secondary ulcers (24%).

There were no significant differences between patients with the two types of ulcer with regard to: age, sex, race, family history, season of admission, history of medications, associated disease, nutritional status, liver function, serum cholesterol or electrolytes, size or location of ulcer. Eighty-eight per cent of secondary ulcers occurred in patients over 50 years of age as compared to 62 per cent of primary ulcers, a difference which is suggestive but not significant. Low serum albumen was frequently present in patients with both primary and secondary gastric ulcers at BCH but not at UH. Alcohol or other gastric irritants were not more frequently associated with either type of gastric ulcer. As previously reported,[3, 4, 5] there was a suggestion of group O predominance in patients with secondary ulcers.

Our study does not support the view that prepyloric ulcers typically behave like secondary ulcers.[1] On the contrary, there was no significantly higher incidence of prepyloric ulcers in the secondary ulcer group and primary prepyloric ulcers were even

less complicated than the whole group of primary ulcers.

Summary

When 90 benign gastric ulcers were classified as primary or secondary depending on the absence or presence of roentgen duodenal deformity, distinct clinical differences were found. Primary gastric ulcers were more often acute, occurring in patients who had symptoms for a short time; had fewer serious complications and healed more rapidly. Secondary gastric ulcers were more often chronic or recurrent occurring in patients who had symptoms for many years; had a higher incidence of complications and therefore more frequently required operation. It is concluded that the classification of gastric ulcers on the basis of coexisting duodenal deformity yields two distinct types of gastric ulcer with differing natural histories. The presence or absence of duodenal deformity by roentgen examination is an important prognostic sign in the evaluation and management of the patient with a gastric ulcer.

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