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Discussion

Dr. Waltman Walters: When Dr. Cohn wrote asking me to open the discussion of his and Dr. Sartin's paper, I thought the least I could do was review the papers by my colleagues to which they had referred in their text. Appended to this discussion, therefore, is the list of the papers which I have reviewed and on which I want to comment in order to emphasize some of the points made by Drs. Cohn and Sartin.

First of all, Drs. Cohn and Sartin studied 35 cases of gastric ulcer with a minimal diameter of 2.5 cm. and they found that the ulcers were benign in 32 and malignant in three. They comment that the high incidence of malignancy in "large" ulcerating gastric lesions reported by others is based on data which include all malignant gastric lesions which are 2.5 cm. or more in diameter.

The studies my colleagues have made at the Mayo Clinic indicate a need for defining the size of a "giant gastric ulcer," for among ulcers more than 4 cm. in diameter the possibility of an ulcer's being malignant is many times that of its being benign. Drs. Comfort, Priestly, Dockerty and coworkers,[1] in a study of 779 patients with benign and 226 with malignant gastric lesions removed surgically at the Mayo Clinic in the years 1940 through 1945, commented as follows: "It is seen that the frequency of benign gastric ulcer declines markedly when the diameter of a given gastric lesion exceeds 2 centimeters, and drops to a small percentage when the diameter exceed 4.0 centimeters." In a later paper Drs. Turner, Dockerty, Priestly and Comfort [2] considered in the category of "large gastric ulcers" only those with the diameter of 4.0 centimeters or more, for which gastric resection had been performed at the Mayo Clinic. In the 15-year period from 1940 through 1954, 100 cases met the aforementioned requirements. Ulcer of this "large size" occurred in only 4.1% of all cases of benign gastric ulcer treated surgically during this time.

Drs. Cohn and Sartin have titled their paper "Giant Gastric Ulcers" to include ulcers more than 2.5 cm. and they studied 35 gastric ulcers in this category. If they were to confine their study, as Turner, Dockerty, Priestly and Comfort [2] did, to ulcers measuring more than 4 cm. in diameter, then a better comparison could be made. In the comparative study of the benign gastric ulcers and gastric carcinomas by my colleagues, only *2.1%* of their 795 benign gastric ulcers were more than 4 cm. in diameter, whereas *75.5%* of the 924 carcinomas were more than 4 cm. in diameter.

In commenting on the reports of Alvarez and MacCarty, of Comfort and Butsch, and more recently of Comfort, Priestley, Dockerty and associates,[1] Drs. Cohn and Sartin state as follows: "The basic difficulty of these papers is the failure to differentiate between malignant ulcers of the stomach and malignancy of the stomach in general." Caruolo, Hallenbeck and Dockerty [3] in studying a group of posterior penetrating gastric ulcers found that of 91 patients operated on for posterior penetrating gastric ulcer during the 6-year period of 1944 through 1949, only 3.3% had malignant ulcers. However, in this series of cases only 28% of the ulcers were more than 2.5 cm. in diameter, and only 8% more than 4 cm. in diameter. Here is an example of the selected group of cases of posterior penetrating gastric ulcers. They

compared their cases with a series of unselected gastric ulcers and found that only 6.2% of these unselected gastric ulcers were more than 2.5 cm. and none were over 4 cm. in diameter. Caruolo, Hallenbeck and Dockerty commented that their cases were selected to exclude frank ulcerating carcinomas and that their data "must not be taken to indicate that the incidence of malignancy in all ulcerating lesions of the stomach is only 3.3%."

Drs. Cohn and Sartin emphasize that a large fixed ulcerating lesion of the posterior wall of the stomach without obvious signs of malignant development will often be benign despite its size and appearance and with this I agree as did Caruolo, Hallenbeck and Dockerty.[3] Both groups of observers comment on the possibility that the small group of malignant ulcers cannot be distinguished from the large group of benign ulcers by gross criteria only. Hence the lesson to be learned is that excision of ulcerating gastric lesions by subtotal gastrectomy should always be done in spite of the fact that local fixation may suggest an inoperable malignant lesion. If these lesions are on the posterior wall of the stomach and are benign, even though penetration has occurred to other viscera, it is not necessary to do more than separate the ulcer from its attachment and remove the open area of ulceration as part of a partial gastrectomy.

All these studies suggest two points of great importance, it seems to me. The first is that many ulcerating lesions of the stomach cannot be identified as being benign or malignant without microscopic examination of the entire area of ulceration and the posterior penetrating gastric ulcer has a high incidence of benignancy if it is less than 4 cm. in diameter. Whether benign or malignant, that part of the stomach containing an ulcerating lesion should be removed. The second point that needs emphasis is that the "giant" ulcerating lesion of the stomach, that is a lesion which is 4 cm. or more in size, stands a 75% chance of being malignant.

I have enjoyed reading and discussing this fine paper of Drs. Cohn and Sartin, and I find no difference in opinion worthy of further emphasis.

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DR. RICHARD T. SHACKELFORD: I would like to point out one facet of Dr. Cohn's interesting paper. He has written so many interesting papers that I always make a point of coming to hear him. From the discussion so far I have gathered that he is concerned chiefly with the fact that most of these ulcers are diagnosed as at least being an ulcerative lesion by x-ray study before operation. But in the past year we have had 4 cases of giant gastric ulcer with long-standing symptoms, where gastrointestinal series at various hospitals, as well as our own hospital, showed no lesion whatsoever detectable in the stomach. Of these four cases two were gastroscoped, and in one the ulcer was seen and in one it was not seen. Otherwise, they were not diagnosed preoperatively, except for the one by gastroscopic examination. It is odd to me that ulcers of this tremendous size can escape detection by a gastro-intestinal series, at least detection of the fact that an ulcer is present, whether it is benign or malignant. But I did want to point out that this syndrome can occur without any roentgenological evidence of any lesion in the stomach.

DR. ISIDORE COHN, JR.: (closing) I should like to thank Dr. Walters and Dr. Shackelford for their discussion. Dr. Walters asked how many lesions there were over 4 cm. in size. In our own series there were eight lesions over 4 cm., of which two were malignant, giving an incidence of 25% in the very large ulcers which we had. In the collected series, and I am going over this very rapidly in my own mind because we did not break down the collected series in exactly this fashion, but going over our tables very rapidly in my own mind I find approximately 100 cases over 4 cm. in size, of which approximately 30 to 35% were reported as malignant. It is interesting that one report in the French literature of three ulcers, all of which were more than 12 cm. in diameter, reported all three of these to be benign. The largest ulcer we could find was again reported by the French and was 14×8 cm. in size.

Dr. Shackelford pointed out the possibility of x-ray missing these lesions even though they are of such tremendous size. This has also been our experience. We have 5 lesions that were completely missed by the radiologist. All this is given in detail in the paper but I did not have time for it in my major discussion. One of these was missed because it was very high in the fundus. Two were missed because the radiologist found other lesions and he gave these so much attention that he missed the ulcer. One of these was a completely independent carcinoma which was confirmed at surgery, but the patient also had a benign gastric ulcer. The other was a phytobezoar and I think the radiologist was so attracted by this that he missed the ulcer completely. In one an extrinsic defect was thought to be due to a known carcinoma of the cervix and the fifth lesion was completely missed.

Dr. Shackelford also mentioned the possibility of missing these lesions by gastroscopy, and this has been true in our experience also. Four of our patients were gastroscoped, and in only one was the correct diagnosis made by gastroscopy.