CARCINOMA OF THE STOMACH AFTER GASTRO-JEJUNOSTOMY.

BY

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A good deal of discussion has recently taken place as to the liability of a simple gastric ulcer to become carcinomatous, and there is considerable difference of opinion as to the frequency of such an occurrence. The appearance of carcinoma in the case of a long-standing gastric ulcer would be in keeping with the now widely accepted fact that it is a frequent sequel of irritation in any form, and would be a development that might quite well be regarded as both possible and probable. In the same way, considering the frequency with which gastric lesions are now treated by gastro-enterostomy, followed as this operation must be by the presence of a certain amount of scar tissue (also a favourable nidus for the cancer process), it would not be surprising if such an artificial opening might, in the course of years, become the seat of carcinoma. Relative to these two points the following case, which was under my care at the Glasgow Royal Cancer Hospital, is of interest, and, I think, has some bearing.

A car-conductor, aged 52, married, was admitted on November 21st, 1921, suffering from a tumour of the stomach. The letter sent with the patient gave the information that he had been operated upon by Sir Kennedy Dalziel at the Western Infirmary, Glasgow, in 1910, when gastro-enterostomy was performed. It further stated that in 1920 he was readmitted there with a recurrence of gastric disturbance, and laparotomy was performed, when it was found that there was a carcinomatous growth of the lesser curvature, stretching down the posterior wall and involving the new opening of the gastro-enterostomy. There were also secondary growths in the peritoneum beneath the left ribs. Under these conditions nothing further was done, and the wound was closed.

When admitted to the Glasgow Royal Cancer Hospital he was in a very anaemic and emaciated condition, weighing only 6 st. 11 lb., his height being 5 ft. 2 in. The gastric tumour could be felt on palpation. The clinical history of the case while in the Cancer Hospital was somewhat uneventful, but he had periodic attacks of gastric disturbance, with some vomiting and, at times, diarrhoea. The matter vomited was chiefly the food that he had taken. He got gradually weaker, and died on April 8th, 1922.

Post-mortem Examination.

The report of the *post-mortem* examination stated that: "The body was that of an extremely emaciated man. There was a central abdominal scar from an old operation. The left leg was very oedematous, and the right was also swollen, though to a lesser degree. *Thorax*: The lungs were oedematous and congested. *Heart*: The myocardium showed brown atrophy. There was atheroma of the coronary arteries and of the aorta. *Abdomen*: A firm mass was present, occupying the pyloric part of the stomach. This organ was opened along the greater curvature. An extensive malignant ulcer with raised, thickened, and rounded edges, was found at the pylorus, stopping short at the pyloric sphincter. This ulcer was about four inches in diameter, with irregular eroded base. The middle finger could be passed through the sphincter into the duodenum. A posterior gastro-enterostomy had been performed. Its stoma was represented by a conical ulcerated depression, one and a quarter inches in diameter and about the same depth. The edges were thickened and continuous with the ulcer margins. The stoma presented the same appearance as the ulcer, and was evidently malignant. A probe could not be passed into the distal part of the attached jejunum, but the proximal side admitted the forefinger. The liver was fatty, slightly enlarged, and showed numerous nodules throughout. There was thickening and shortening of the omentum near the pylorus. The mesenteric glands were enlarged. There was nothing of note in the kidneys, and the spleen was small and soft. A thrombus was present in both iliac veins, but not extending into the inferior vena cava. The microscopic section showed a typical adenocarcinoma of the stomach, with invasion of the mesenteric lymph glands and secondary nodules in the liver. The edges of the gastro-enterostomy opening were also found to be malignant and of the gastric type.

From the report of the *post-mortem* examination it is evident that the malignant disease was of gastric origin, and the condition of the gastro-enterostomy wound—namely, that a probe could not be passed into the distal part of the jejunum while the proximal side admitted the forefinger—indicated that the food must have passed more or less in a vicious circle through the duodenum and back into the stomach.

It is unfortunate that there is no record in the Western

Infirmary journals to show the reason for the operation of gastro-enterostomy done twelve years previous to the patient's death, nor is there any note made of the presence of any ulcer. An interview with the patient's daughter gave the following information: At the beginning of his illness her father complained of diarrhoea, which continued for a long time, and in consequence of which he was sent to the Western Infirmary, where, as noted, an operation was performed, she states, for dilated stomach. Decided improvement in his health followed the operation, and the diarrhoea ceased, so that he was able to go back to work after having been off duty for a year subsequent to the operation. He seems to have been able to continue his work for eight or nine years, when he began to become emaciated. He was again sent to the Western Infirmary, where the abdomen was opened a second time, and the condition already described was found. Her mother was told that at the seat of trouble there was a tumour almost up against the new passage, and that practically nothing further could be done. Shortly before his admission to the Glasgow Royal Cancer Hospital some vomiting showed itself, but there was no history of haemorrhage at any time. The paleness present on his admission to the hospital was a matter of recent date, as previously he had a fresh colour. He was a heavy smoker, but temperate as regards alcohol.

In view of the above statement of the patient's daughter it would be a fair inference that the gastro-enterostomy was done for a dilated stomach, probably connected with some ulceration in the vicinity of the pylorus and leading to some obstruction at that orifice, necessitating the gastro-enterostomy operation. If this be the case, in view of what was found at the *post-mortem* examination two surmises are possible: one is to assume, as I have done, the existence of an ulcer which in time became malignant and extended into the gastro-enterostomy wound; the other, that the malignant action commenced in the wall of the gastro-enterostomy wound on the gastric side, and, by extension, involved the old ulcer. The balance of weight of opinion is probably in favour of the former extension, but it does not put out of court entirely the possibility of the latter.

In the *Lancet* of June 13th, 1925, Mr. Sherren is quoted as having stated that he had never seen carcinoma develop after gastro-jejunostomy. I learn from Mr. Sherren, however, that I had not correctly interpreted his statement, and that he did not say that he had never seen carcinoma develop after gastro-jejunostomy, but that he had never seen the late development of carcinoma after gastro-jejunostomy had been carried out for a small mobile ulcer on the lesser curvature. How far the above case has a bearing on the latter point one cannot say with certainty, but I think that the case has some value in connexion with the question of ulceration of the stomach being a forerunner of carcinoma, and I must leave other surgeons to draw their own conclusions as to its being an instance of a gastro-enterostomy opening becoming the seat of cancer.

THE POSITION OF THE STOMACH IN HEALTHY BRITISH AND AMERICAN SUBJECTS.

BY

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A STUDY of the position of the abdominal viscera is being carried on at the x-ray laboratory of the department of anatomy at University College, London, for the purpose of determining the normal positions and their range of variation in healthy living subjects. Radiographs have been taken of 53 men and 20 women. This is too small a number from which to draw definite conclusions; but the results warrant the interesting, though at present tentative, suggestion that in the British the stomach occupies a lower position than it does in Americans.

With the subjects in the standing position, after a meal of two ounces of barium sulphate in two cups of malted milk, the lowest part of the greater curvature of the stomach was found below the interiliac plane, a line drawn