Open Letter

to Dr. L. Wittelshoefer

by Prof. Th. Billroth

Vienna, Feb. 4, 1881.

My Esteemed Colleague:

It is with great pleasure that I comply with your request to relate to you the
details of the stomach resection I performed on Jan. 29 of this year. It is essentially
a question dealing with the problem of whether the all-too-frequent stomach
cancer, against which all internal therapy is helpless, can be cured surgically.

Seventy years have passed since a young physician, Karl Theodor Merrem,
published a dissertation in which he proved, through experiments with dogs,
that the pylorus can be extirpated and that the stomach can be joined with the
duodenum; two of three animals so operated upon survived. He was heroic enough
to propose that this operation could be carried out on human beings with incurable
pyloric carcinoma. However, on the one hand, the opinion that the processes
of life, its disturbances and its equilibrium is the same in animal and human
bodies had not yet been established; on the other hand, the operative technique
was not yet advanced enough for the meaning of these experiments to be grasped
entirely and the physiological results correlated to humans. The question con-
cerning the best technique of combining stomach and intestinal wounds has
perplexed surgeons for some time and comes up again and again in discussions.
The leading anatomists and surgeons of France, England and Germany have busied
themselves with this topic in the course of this century since Lembert found
the only proper principle for this operation (exact apposition of serosa to serosa).
After this came many successful utilizations of this suture for intestinal lacerations.
As regards extirpation of diseased intestinal portions, certainly no one as yet
has had the courage to do so. Only in the course of the last decade were new
and satisfactory advances ushered in in this field.

In 1871 I proved that one can extirpate pieces of the esophagus in large dogs.
The esophagus healed well with a slight narrowing which could be dilated easily.
Czerny was the first to perform this operation successfully in man. Then followed
Czerny’s experiments on the extirpation of the larynx, a few years after which
I successfully removed a carcinomatous larynx in a human being. There followed
the experiments of Gussenbauer and Al. v. Winiwarter of resections of pieces
of bowel and stomach, which in turn were proven and enlarged upon by Czerny
and Kaiser. Martini's and Gussenbauer's success in resection of the sigmoid
and my successful gastreorrhaphy (1877) proved that further advances in this realm
would be feasible. The last-mentioned operation also eliminated the question of
whether the gastric juices would dissolve the scar of the stomach thus formed.
That is why I closed the report of that operation with these words, "It is only
a courageous step from this operation to the resection of a piece of carcinomatous
degenerated stomach."
In order to quiet the opinions of those who think of my present operation as being an extremely heroic experiment on humans, I have given the foregoing introduction. It is not bold by any means. The basis for resection of the stomach is anatomically and physiologically sound, as shown by my students and myself. Every surgeon who has had personal experience in these animal experiments and similar operations in humans comes to the conclusion that resection of the stomach in the human also must and will succeed. Péan, a Parisian surgeon with the greatest experience in laparotomy, came to this same conclusion. In 1875 he resected a carcinomatous pylorus having a spread of 6 cm. in a patient who was cachectic and died four days postoperatively. The method of operation he used and also the suture material (catgut) seemed to me to be ill-chosen so that I do not esteem his failure too highly. The operation did, however, discourage Péan himself since otherwise he would have repeated it; but so far as I know he did not. Also, as far as I know, no other surgeon dared this difficult operation. The few cases which I chanced to see in the last few years did not seem to lend themselves for the first operation of this kind. It was not until last week that my clinical assistant, Dr. Wölfier, showed me a female patient who suffered, without a doubt, of a movable carcinoma of the pylorus. After a few days of observation and repeated examinations I was prepared to undertake this operation to which the patient consented, since she felt that because of her increased debility and inability to retain food, her end would be near.

This 43-year-old woman had always looked pale but had been healthy and well-nourished in the past. In October, 1880, she rather suddenly took sick with vomiting. Soon the symptoms of a carcinoma of the stomach with stenosis of the pylorus developed, the characteristics of which I shall not describe since they are well known. She vomited coffee-ground stomach content only a few times; the extraordinary pallor and loss of weight, as well as the thin, rapid pulse, had occurred only in the last six weeks. Because of the small amount of food and the continuous vomiting the only thing that saved her from complete starvation was the ability to retain some quantity of sour milk. Preparation for the operation consisted of getting the patient used to peptone enemas and washings of the stomach with the well-known method of injection and pumping out. I shall not now mention all the preliminary plans we considered in the event that during its course, the operation as such would prove not to be feasible, or that the union of stomach and duodenum after the excision should be impossible. I also reserve for a later, more detailed report the mention of especially important details of the operative technique. Because of the great debility of the patient and the expected long duration of the operation (Péan’s took 2½ hours), I asked H. Barbieri, my well-versed private assistant, to administer the anesthesia. You understand that I wanted to apply myself solely to the operation without having to fret about the anesthesia. The operating room, especially equipped for laparotomies, was for well-known reasons heated to 24° Reaumur. All my assistants were aware of the great importance of our undertaking; there was not the slightest interference nor a single minute of unnecessary stoppage. The
movable tumor, the size of a medium apple, was situated just above and to the right of the umbilicus. A transverse incision about 8 cm. long was made over the tumor through the thin abdominal layers. The tumor was difficult to deliver because of its size—it proved to be a partially nodular, partially infiltrated carcinoma of the pylorus involving more than one third of the lower portion of the stomach. Separation of the adhesions to the omentum and the transverse colon. Careful separation of the greater and lesser omentum—ligation of the blood vessels before cutting them. Extremely small loss of blood. Complete exteriorization of the tumor outside the abdominal wall. Cut through the stomach 1 cm. proximal to the infiltrated part; at first only posteriorly, then also through the duodenum. The cut ends could be brought together. Six sutures through the edges of the wound but not yet tied, the thread being used only to keep the edges of the wound in situ. Further incision through the stomach obliquely from above and inferiorly to below and exteriorly, always 1 cm. removed from the infiltrated part of the stomach wall. Next, union of the oblique wound of the stomach from below to above until the opening was just big enough to fit the duodenum. Thereafter complete removal of the tumor from the duodenum 1 cm. distal to the infiltration, by means of an incision parallel to the incision in the stomach (oval amputation). Exact fitting of the duodenum to the remaining opening in the stomach. Altogether about 50 sutures with CZerny’s carbolized silk, cleaning with 2 per cent carbolic lotion. Review of the entire suture; a few more auxiliary sutures in apparent weak spots. Reposition into the abdominal cavity, closure of the abdominal wound, dressing.

The operation lasted, including the slowly induced anesthesia. 1½ hours. No weakness, no vomiting, no pain after the operation. Within the first 24 hours only ice by mouth, then peptone enema with wine. The following day, first every hour, then every half hour, 1 tablespoon of sour milk. Patient, a very understanding woman, feels well, lies extremely quiet, sleeps most of the night with the help of small injections of morphine. No pain in the operative area, subfebrile reaction. The dressing has not been changed.

Broth was tried but denied by the patient so that only sour milk in the quantity of 1 liter was taken. The peptone and pancreas enemas gave mild flatulence and colic and were therefore discontinued. An injection of a little wine two or three times daily by rectum is agreeable to the patient. Yellow pasty stool as with nursing babies. The pulse is by far quieter and stronger than before the operation. Thus it goes without the slightest setback. As proof of the well-being of the patient I want to tell you that the day before yesterday, I had to bring her from her isolated room to a general room because she couldn’t talk enough with another patient who had had an oophorectomy the same day.

The excised piece was (terrible to say) 14 cm. at the greatest curvature, and through the pylorus one can just about force the shaft of a feather. The shape of the stomach is little altered—it is only smaller than before.

I am happily astounded over the extremely smooth course; I expected more local and general reaction; I might almost say I expected more naughtiness from
the stomach. I still cannot quite believe that everything will continue as well. There could be a relapse into the prior debility—this would be the most fatal complication since nothing more could be done about it. The wound and everything around it must be by now, after a six-day course, without reaction so that even if one or the other of the sutures should suppurate a general peritonitis should not be expected. There could be circumscription suppurations—abscesses around the scar. We hope we shall discover them early enough so that we can drain them.

The course thus far proves the feasibility of this operation. The objective of further studies has to be the indications and contraindications and the techniques for different cases. I hope we took a good step in the right direction to cure some of the unfortunates who have been thought to be incurable thus far, or at least to alleviate the pains of those who finally will succumb to carcinoma and its metastases. Please forgive me if I have a certain pride in the works of my pupils which made this progress possible.

*Nunquam retrorsum!* was the watchword of my teacher, Bernhard v. Langenbeck—it shall be mine and that of my pupils.

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