Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Surgical Treatment Of Ulcer

Volume XIII Friday, May 22, 1942 Number 26

STAFF MEETING BULLETIN
HOSPITALS OF THE . . .
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Volume XIII | Friday, May 22, 1942 | Number 26

INDEX

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during the school year, October to June, inclusive.

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William A. O'Brien, M.D.

I. LAST WEEK

Date: May 15, 1942

Place: Recreation Room
Powell Hall

Time: 12:15 to 1:00 p.m.

Program: "Blood Substitutes"
Paul Dwan
Robert Hoyt

Discussion
Harry Hall
C. J. Watson
Willard White
Charles Rea
Ralph T. Knight
Robert Hoyt
Paul Dwan

Present: 107

Gertrude Gunn
Record Librarian

- - -

II. MEETINGS

1. ANATOMY SEMINAR

Saturday, May 23 at 11:30 a.m. in room 226, Institute of Anatomy.

"Studies of the craniopharyngeal canal"
Glenn A. Drager
"Lipoids of the human pars nervosa"
John H. Randolph

- - -

2. PHYSIOLOGY-PHARMACOLOGY SEMINAR

Tuesday, May 26 at 12:30 p.m. in room 217 Millard Hall.

"Discussion of combat rations"
Ancel Keys

- - -

3. SEMINAR IN PATHOLOGY

Monday, May 25 at 12:30 p.m., in room 104 Institute of Anatomy.

"Review of 100 cases of cor pulmonale.
Dr. G. K. Higgins

- - -

4. JOURNAL-LANCET LECTURE

The second annual Journal-Lancet Lecture will be held on Friday, May 22, at 8 p.m. in the Medical Sciences Amphitheatre.

Dr. Herald R. Cox, principal bacteriologist of the National Institute of Health of the United States Public Health Service at Hamilton, Mont., will speak on the topic, "Typhus Fever: With Special Reference to Epidemiology and Immunity."

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III. CENTER FOR CONTINUATION STUDY

PROGRAM

May 25-29	Kenny Method (Nurses)
June 1-6	Kenny Method (Physicians)
June 3-5	Emergency Hospital Procedures (Nurses)
June 8-10	Diseases of Early Childhood
June 11-13	Industrial Nursing
June 15-20	Kenny Method (Nurses)

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IV. WEDDING

Robert Alway and Sophie Chamberlain - May 21st at 4:00 P.M., at the home of Professor and Mrs. Frederick J. Alway in St. Paul.

Congratulations and best wishes.

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V. SURGICAL TREATMENT OF ULCER

B. G. Lannin

Introduction

From the literature of recent years it is apparent that the radical surgical treatment of ulcer is being more generally accepted. Finsterer of Austria and Berg, Strauss and Lewissohn in this country have, for many years, championed the more radical operations of resection and condemned the more conservative procedures. Recently, Roscoe Graham, Lahey and Marshall, Steinberg, Wangensteen and others have expressed essentially the same opinion.

The end results of the conservative surgical procedures have too frequently been disappointing. Secondary ulceration, which followed an appreciable percentage of these procedures, has many times left patients in far worse circumstances than prior to their operations.

It is quite well agreed that ulcer is not primarily a surgical disease and that all cases deserve a thorough trial on rigid medical management before surgery is undertaken. On the other hand, there is no questioning the necessity of operative intervention when any of the complications of ulcer have developed. The indications for surgical therapy - 1) failure of medical management, 2) perforation, 3) obstruction, 4) repeated severe hemorrhage, 5) suspected malignancy, are quite well established.

Types of Operative Procedures

What type of operation will give the patient the greatest promise of a permanent cure? Except in the acute perforation, an acceptable operation must markedly reduce the acidity of the gastric secretion. Although it is conceded that other factors may play a role, experimental and clinical evidence have demonstrated conclusively that the acid factor is the most significant in the genesis of ulcer.

Varco, Walpole and Hay, working in this laboratory using Code's method of histamine implantation in beeswax have produced ulcer in various experimental animals by stimulating the endogenous mechanism of gastric secretion causing a copious and prolonged flow of highly acid gastric juice. Thus, it is apparent that achlorhydria is much to be desired in the successful management of ulcer.

It is our belief that recurrent ulceration will not develop in the presence of achlorhydria. Using achlorhydria, even to maximal stimulation such as can be determined by a triple histamine analysis, as the criterion which a satisfactory operation must fulfill, the worth of eight different types of surgical procedures has been evaluated. In an earlier publication from this clinic, seven operative procedures were discussed and a preliminary report given. Since this time, one other procedure has been added and, in the light of what we have learned, a majority of the procedures have been discontinued. The following types have been studied:

Group I	Gastrojejunostomy
Group II	Antral or Partial Gastric Resection
Group III	Extensive Gastric Resection (75-80 per cent)
Group IV	Finsterer Antral Exclusion (Modified)
Group IVA	Finsterer Antral Exclusion with Excision of Antral Mucosa
Group V	Antral Excision with Complete Intragastric Regurgitation (Schimilinsky)
Group VI	Fundusectomy with Gastrojejunostomy
Group VII	Fundusectomy

Method of Analysis

All analyses are done utilizing continuous suction with the patient lying supine in order to determine, as accurately as possible, the actual status of the gastric secretion. The

suction apparatus employed is merely a modification of the ordinary nasal suction (Wangensteen) apparatus with a test-tube being used to collect the secretion instead of the usual trap bottle. The test-tube may be changed at intervals and a Y-tube outlet is provided for the simultaneous aspiration of two patients. All analyses are done on the fasting stomach.

Preoperative analyses are done on all patients except those who have suffered recent hemorrhage of any appreciable amount. An interesting observation is the occasional absence of free hydrochloric acid in patients with roentgenologically active duodenal or gastric ulcers.

Observations of this type, undoubtedly, account for occasional reports in the literature of achlorhydria associated with duodenal or gastric ulcer.

These findings would agree with those of Palmer who noted considerable variation in the response of gastric secretion to histamine stimulation and thus demonstrates the necessity of repeated aspirations to determine more accurately the gastric secretory response.

Several patients have been observed who have been achlorhydric even in response to stimulation with three consecutive doses of .5 mg. of histamine hydrochloride and who have on subsequent analyses shown high acid values. The reason for this is not altogether clear. In accord with Palmer's observations, no patient in this clinic, with a proven active chronic gastric or duodenal ulcer, has demonstrated persistent achlorhydria.

Postoperative analyses are done on all patients before their discharge from the hospital, usually the tenth or eleventh postoperative day. They are then followed in the Outpatient Clinic and are studied at intervals of two weeks, six weeks and three months following their discharge from the hospital and, subsequently, at three to four-month intervals. Analyses are done at each visit and motility and emptying time are checked by fluoroscopy as often as indicated. All patients who are achlorhydric to a single dose of .5 mg. of histamine hydrochloride subcutaneously are given two additional doses of .5 mg. histamine at thirty-minute intervals and samples are again collected. This "triple histamine" test requires two and one-half hours, during which time five samples are collected and, we believe, gives maximal stimulation to the gastric secretion. The response to alcohol is not considered to be nearly as significant as that to histamine and has, therefore, been discontinued. Likewise, no especial significance is attached to the total acid values.

Results

Incidence of Achlorhydria and Gastrojejunal Ulcer After Varying Types of Operation for Ulcer (156 Cases)

Type of Operation	No. of Patients	No. of Patients Consistently Achlorhydric to Triple Histamine	Gastrojejunal Ulcer
Group I Gastrojejunostomy*	29	0	10%
Group II Antral or partial gastric resection	6	0	2 (33%)
Group III Extensive gastric resection**	82	50 (61%)	0
Group IV Finsterer antral exclusion (modified)	12	3 (25%)	1 (8.5%)
Group IVA Finsterer exclusion excising antral mucosa**	11	6 (55%)	0

Table I (Cont.)

Type of Operation	No. of Patients	No. of Patients Consistently Achlorhydric to Triple Histamine	Gastrojejunal Ulcer
Group V Antral resection with complete intragastric regurgitation (Schmilinsky)	3	0	2 (68%)
Group VI Fundusectomy with gastrojejunostomy	8	2 (25%)	0
Group VII Fundusectomy	5	0	0

*Only 29 patients submitted to study after triple stimulation with histamine. In 138 patients who have had gastrojejunostomy, gastrojejunal ulcer was observed 14 times.

**Eighty per cent of patients achlorhydric on all except one examination.

Group I, Gastrojejunostomy. This procedure is one which has almost entirely been discontinued as it is of value in only a few selected cases. There are numerous reports in the literature; Church and Hinton, Jordan and many others of unsatisfactory results following this procedure, although it is admitted that a large percentage of these unfortunate sequelae may have been due to injudicious selection and/or improper indications. In this clinic, gastrojejunostomy is performed only on elderly poor-risk patients in whom the chief complaint is obstruction and whose acid values are low. The high incidence of jejunal ulcer following this procedure in younger individuals with high acid values is well recognized. Our own incidence of jejunal ulcer in 138 cases reviewed by Bergh, Hay and Trach is 10 per cent. However, we have seen several patients in whom jejunal ulcer developed twenty to thirty years after the gastrojejunostomy and in all probability in the ultimate analyses, the true incidence of recurrent ulcer would be higher than the above figure. This item will be mentioned again.

In this group (Group I) 29 cases were studied and not a single patient has been rendered persistently achlorhydric to maximal stimulation; thus, this operation fails to satisfy the criteria which have been established and has almost entirely been abandoned.

Group II, Antral or Partial Gastric Resection. This operation has proven to be equally, if not more, disappointing than gastrojejunostomy and undoubtedly accounts for the unsatisfactory results attributed to those designated as more radical surgical procedures. It is now apparent that a more extensive segment of the stomach must be sacrificed to insure an adequate reduction of the acid values. None of the six patients in this group were rendered achlorhydric, and two subsequently developed gastrojejunal ulcers necessitating reoperation. All were done for massive hemorrhage in the earlier part of this series.

It would appear that the Edkins hypothesis would be invalid as regards this operation as although the antrum and pylorus are completely extirpated, the gastric acidity is not lowered and the incidence of jejunal ulcer is high. Thus this procedure, too, fails to satisfy the criterion of achlorhydria and has, therefore, been discontinued - no operation of this type having been done since September 1939.

Groups III and IVA - Extensive Gastric Resection, and Finsterer Antral Exclusion with Resection of Antral Mucosa. It is in these groups that we have had our greatest experience and the most encouraging results. The two groups will be presented together as they are essentially the same procedure except for technical variations in the inversion of the duodenum. The Group III operation entails resection of the distal 75 - 80 per cent

of the stomach, including the antrum and pylorus with inversion of the duodenum followed by a Hofmeister retrocolic anastomoses without enteroanastomoses. (In the earlier part of the series, anteroanastomoses was occasionally performed; however, follow-up studies, in these cases, as compared with a similar group of patients without enteroanastomoses showed no significant difference in postoperative achlorhydria).

The Group IVA operation is used in those cases of so-called "inoperable" duodenal ulcer in which technical difficulties, i.e., previous perforations, choledocho-duodenal fistula, et cetera present closure of the duodenum in the ordinary manner. This procedure is identical with the Group III procedure, except that the stomach is divided at the antrum - the antral mucosa is dissected out and the antral musculature is then closed as described by Finsterer, Plenk, Bancroft, and, more recently, reemphasized by Wolfson and Rothenberger. As can be seen in Table I, the incidence of postoperative achlorhydria, as would be expected, is nearly identical.

In the two groups there were 93 patients, 74 males and 19 females. The average duration of symptoms prior to operation was eleven years. It might be again emphasized that all patients had undergone rigid medical management before surgical intervention. Table VI illustrates the duration of symptoms as compared to the location of the ulcer. As would be expected, the gastric ulcers come to operation much sooner than the duodenal.

Table VI

Relation of Location of Ulcer to Duration of Symptoms Prior to Operation. (93 Cases)

	Location of Ulcer	No. of Cases	Duration of Symptoms
1.	Duodenal	54	11 years
2.	Gastric	18	4 years
3.	Gastric and Duodenal	12	12 years
4.	Gastrojejunal*	9	15 years

*Average interval between original gastrojejunostomy and subsequent resection.

Average duration of symptoms of entire group - 11 years.

An interesting observation is the fifteen-year interval which elapsed between the performance of the original gastrojejunostomy and the subsequent development of the jejunal ulcer necessitating resection.

Although this figure is much higher than those usually reported and is, admittedly, obtained from a series of cases much too small to be statistically significant, it, at least, illustrates the long interval which may elapse before recurrent ulcer develops. The interval of approximately five years, noted by Church and Hinton, is perhaps much more representative of the usual case.

Table VII denotes the frequency of the complication of ulcer which ultimately brought these patients to accept surgical therapy. It will be noted that 80 per cent of the patients had observed one or more of the complications prior to operation.

Table VII

Frequency of Complications of Ulcer Noted Prior to Operation (93 Cases)

	Complication	No. of Cases
1.	Obstruction	30 (32%)
2.	Hemorrhage	51 (53%)
	Acute or massive	23
	Chronic	28
3.	Perforation	12 (13%)

80% of patients had one or more complications.

The classification of the bleeding group into acute or chronic is necessarily in most instances, dependent upon the accurateness of the history as given by the patient and, as such, may be subject to considerable error.

Table VIII demonstrates the relation of the location of the ulcer to post-

operative achlorhydria. As has been quite generally observed, the gastrojejunal ulcers are the most difficult to render achlorhydric, the duodenal next and the gastric ulcers, much the easiest. It is interesting that in the small series of gastric ulcers (18 cases), 22 per cent (4 cases) were diagnosed as carcinoma preoperatively, both by x-ray and gastroscopy. Again this series is too small to be significant, but it does indicate that our best adjuncts in diagnoses still are not perfect.

Table VIII

Relation of Location of Ulcer to Post-Operative Achlorhydria (93 Cases)

	Location of Ulcer	No. of Cases	No. of Cases Achlorhydric Postoperatively
1.	Duodenal	54	29 (54%)
2.	Gastric	18*	14 (77%)
3.	Gastric and Duodenal	12	9 (75%)
4.	Gastrojejunal	9	4 (44%)

*Four cases (22%) diagnosed as carcinoma preoperatively both by x-ray and gastroscopy.

Table IX denotes the relation between the age of the patient and the percentage of postoperative achlorhydria. Again, as would be expected, it is observed that the younger patients are more difficult to render achlorhydric than those in the older age groups.

Table IX

Relation of Age of Patient to Postoperative Achlorhydria (93 Cases)

	Age Group	No. of Cases	No. of Cases Achlorhydric Postoperatively
1.	Under 35 years	10	4 (40%)
2.	Between 35 and 50	48	24 (50%)
3.	Over 50	35	27 (77%)

Age Range: Youngest patient, 14 yrs. Oldest patient, 73 years. Average age of entire group, 47 years.

The youngest patient in the group was a boy of 14, who had hemorrhaged profusely at least five times prior to operation and surgery was undertaken with some misgivings at the insistence of his parents. Although copious quantities of highly acid secretion were noted preoperatively, an extensive resection had rendered this boy persistently achlorhydric even to maximal stimulation and he is now entirely symptomatic, living as any other normal boy of his age. The oldest patients in the group were usually those with gastric ulcer in whom malignancy could not be excluded. However, even in the advanced age group, patients with duodenal ulcer are not infrequently seen with serious complications of ulcer, bleeding obstruction and even perforation, indicating that, initially, no age group is immune to this disease.

Table X indicates the functional end results of the group and includes, with the exception of four cases, all patients operated upon between March 1, 1939 and July 1, 1941. As this Table was compiled in January 1942, it is evident the longest period of follow-up is 27 months and the shortest, only 6 months. 81 (87%) of the 93 cases have been observed adequately enough to draw accurate clinical conclusions. Although a more inclusive study would certainly be more satisfactory, it is to be remembered that all patients are from the charity service of the University Hospitals and live throughout the state, at considerable distance

from the hospital. The social and financial hardships resulting from long, frequent visits to the Outpatient Clinic make the above figure more understandable.

An accurate follow-up depends upon careful integration of the patient's mental make-up with the clinical findings which may be definitely demonstrated. Patients in whom any psychoneurotic tendency is noted preoperatively give notoriously poor results, even though the physiologic result as determined by gastric motility - acidity studies et cetera is apparently satisfactory.

The criteria used in classification of the end results are the 1) alleviation of all symptoms, 2) the adequacy of the gastric capacity, 3) the ability to return to work, and 4) the maintenance of a satisfactory body weight. Those patients classified as "excellent" satisfactorily fulfilled all four of the above criteria; those classified as "good" at least three; "fair," only two, and the "poor" results satisfied one or less of the requirements.

Table X

Summary of Functional End Results
(81 Cases)

End Result	No. of Cases
1. Excellent	61 (75%)
2. Good	11 (14%)
3. Fair	6 (7%)
4. Poor	3 (4%)

48 per cent of patients below preoperative weight. Average weight loss, patient = 10 pounds. 52% of patients above preoperative weight. Average weight gain, patient = 10 pounds.

The observations regarding the postoperative weight of the patients are quite interesting. However, this unusual division into two almost equal groups of those patients below and above their preoperative weight is necessarily dependent in a large measure upon the preoperative status of the patient. Patients whose diets have, as a result of rigid prolonged medical management, consisted mainly of dairy products, may be somewhat above their normal weight. With the sudden discovery in the postoperative period of their ability to eat anything they wish, and as a result of the natural antipathy which they have developed against milk, cream, etc., it is not surprising to find the patient selecting foods which are not particularly high in caloric value. On the contrary, patients with any degree of obstruction are usually underweight and, as would be expected, begin to gain quite rapidly as soon as the obstructing mechanism has been removed. It is obvious that the gastric capacity will be reduced in the early months of convalescence and, as a result, patients are instructed to eat five or six times daily. However, if it will be remembered that the fundic portion of the stomach which remains is the most dilatable, it is not surprising to soon observe the development of a satisfactory gastric capacity. The patients may then subsist quite comfortably on three meals a day with absolutely no dietary restrictions enjoined upon them. In recent months, all patients have been given a 3000 caloric diet in their early convalescence, and with proper food selection and a little helpful guidance, they quite uniformly are able to maintain a satisfactory weight.

The development of complications many years after the more conservative procedures has already been emphasized. What will the ultimate analysis of this group of more radically treated cases show? Will such serious sequelae as anemia, calcium deficiency or malignancy follow prolonged achlorhydria? Admittedly this follow-up period is far too short to draw accurate conclusions and time alone will give the final answer.

As has been mentioned, it is our belief that recurrent ulceration will not develop in the presence of achlorhydria and leading support to this thesis is the absence of jejunal ulcer as yet in this group of patients (Table I). Castle has shown that the fundic portion of the stomach in man produced adequate amount of intrinsic factor. As this portion of

the stomach remains, the development of pernicious-like types of anemia would not be expected. Iron deficiency anemias, if they should appear, may be readily combatted by the oral administration of iron.

The absorption of calcium occurs principally in the upper part of the small intestine. There is a direct relationship between the acidity of the duodenal contents and the acidity of the gastric secretion as noted by Kearney, Comfort and Osterberg. Irving and Ferguson have found the absorption of calcium chloride in dogs to be facilitated when buffered to acid solutions. Brechner and Armstrong have noted a definite relation between achlorhydria and alveolar bone resorption.

However, Lederer and Crandall have noted that the absence of gastric secretion in gastrectomized dogs does not seriously interfere with the absorption of large doses of calcium. It seems probable that any calcium deficiency which might develop might also be treated by oral administration of calcium. At the present time a study is going on to determine any roentgenological evidence of decalcification in this group of patients.

The relationship of achlorhydria to the etiology of carcinoma is not definitely established. Jenner has noted a definite increase in gastric malignancy in cases of pernicious anemia and Washburn and Rozendaal have also noted an increase of this occurrence.

However, it seems probable that the underlying factor in both these conditions, i.e., pernicious anemia and carcinoma, is the associated chronic gastritis. Thus, it seems unlikely that evidences of malignancy will appear in more than the normal ratio in this group.

It will be observed (Table I) that none of the operative procedures will render 100 per cent of the patients achlorhydric. Granted that reduction of gastric acidity by surgical methods is not the final solution in the treatment of ulcer, until more satisfactory agents for depressing gastric acidity can be found, it is apparent that extensive gastric resection including the pylorus and antral mucosa offers the best assurance of a permanent cure.

Group IV. Finsterer Antral Exclusion (Modified). This group is composed of 12 patients, of whom only 3 (25%) subsequently became achlorhydric. The procedure performed was essentially the "resection for exclusion" first described by Finsterer except the extent of resection was similar to that in Groups III and IVA. One patient developed a jejunal ulcer and was successfully reoperated upon. Another patient continued to have symptoms and at a subsequent operation the excluded antral segment was excised. Following this procedure, the patient has become achlorhydric and is now completely asymptomatic.

This operation then, contrary to the Group II resection, would lend credence to the Edkins hypothesis. The excised antral segment in the second case measured only 16 square centimeters. It seems highly improbable that the additional resection of this tiny amount of tissue in the fundic region would have been followed by such a dramatic development of achlorhydria and complete cessation of symptoms. Although the exact nature of the hormonal function of the antral mucosa is not definitely established, it seems essential to excise the antral mucosa to assure the development of achlorhydria.

Group V. Antral Excision with complete intragastric regurgitation.

This procedure is mentioned only to be condemned and belongs in the discard with other such disastrous operations as those of Devine and von Eiselsberg.

Fortunately, only 3 such operations were performed: two patients promptly developed jejunal ulcers from which they eventually succumbed. The other patient still has difficulties and is not achlorhydric. Lai has shown the acidity of the gastric contents to be increased following cholecystgastrostomy for calculous obstruction of the common duct. It would appear that the constant entrance of the alkaline duodenal contents into the gastric pouch stimulates intermittently the

second phase of gastric secretion with the resulting prompt development of jejumal ulcer. It is indeed unfortunate that operations of this type were ever performed.

Group VI. Fundusectomy with Gastrojejunostomy.

This procedure is based on the principle described by Connell in 1929. The entire fundus is excised leaving a narrow tube of gastric mucosa and a gastrojejunostomy is added. Eight patients have been operated upon according to this plan. No jejunal ulcers have developed as yet, although only 2 (25%) have been persistently achlorhydric.

In the main, these patients get along quite satisfactorily, although as most of the dilatable fundic portion of the stomach has been removed, the gastric capacity is not as satisfactory as in the Group III patients.

This procedure lends additional support to the Edkins thesis as although the acid secreting area excised is as large or even larger than the Group III operation, only 25 per cent of the patients become achlorhydric indicating the necessity of excising the segment of antral mucosa.

Group VII. Fundusectomy.

This procedure more closely approximates Connell's original description. Obviously this operation must be restricted to those cases without obstruction or hemorrhage. Our experience with this operation has been that of others, as Watson, Nollinger and Seely; namely, that acidity may be initially reduced but subsequently quite promptly returns to preoperative levels. This procedure has been performed upon five patients and not one patient has become achlorhydric. Four patients are symptomatically improved, but the fifth continues to have difficulty and will need reoperation.

Summary and Conclusions

Effective reduction of gastric acidity is the most important criterion which an acceptable operation for ulcer must fulfill. Recurrent ulceration will not develop in the presence of achlorhydria.

Anastomotic operations (Group I) and small gastric resection (Group II) fail to render patients achlorhydric and are followed by a prohibitive percentage of jejunal ulcer.

Extensive gastric resection, including the pylorus and antral mucosa, is at present the most valuable weapon in the surgeon's armamentarium in the treatment of ulcer. Consistent achlorhydria is achieved in approximately 60 per cent of the patients in Groups III and IVA, and 80 per cent have been achlorhydric on all except one examination. The elderly age group with gastric ulcer are the easiest to render achlorhydric, whereas the younger age group with gastrojejunal or duodenal ulcer are followed by a much lower percentage of achlorhydria. No jejunal ulceration or other untoward complications have as yet developed in this group of patients and the functional end result is satisfactory in a significant percentage.

Groups II, IV, IVA and VI give opportunity to test the validity of the Edkins hypothesis. The results in Group II would tend to indicate that this thesis is invalid; whereas those in Groups IV, IVA and VI would lend support to this hypothesis.

The Schmilinsky principle of complete intragastric regurgitation is to be condemned.

The Connell principle of fundusectomy with or without gastrojejunostomy is not followed by an appreciable percentage of achlorhydria and is, therefore, an unsatisfactory operation in the surgical treatment of ulcer.

GOSSIP

It is a group of fathers and sons from St. Thomas Military Academy. All the youngsters look spic and span as their fathers beam proudly upon them. There is an exchange of ohs and ahs as they meet and show off their sons. Many of the boys are in the rapidly growing period of adolescence. They are so thin and tall, their backs are so straight, their neck and legs are so long that they remind me of Grant Wood's conception of adolescence in young roosters. Even the little feathers are duplicated on the youngsters' necks and chins. Many parents like military schools because they make their children keep clean and neat and mannerly. The private schools are enjoying an enormous increase in enrolment. Many parents feel that the undisciplined freedom allowed the rank and file in the public schools will not result in orderly habits of thought. Social science expositions of complex world affairs are solved by over-simplified impossible answers. The result is that we lead the unthinking to believe that they are thinking through world affairs. For these and other reasons the private schools are on the upgrade. Cadet Colonel Meyerding, son of Edward Meyerding, of the Minnesota Public Health Association, makes an excellent response to a gift of a flag to the unit. I tell them of progress in military medicine and if this was a certain diary published each week by a national medical journal I would add that the crowd was much impressed and pleased by my remarks. As I said before, the boys were polite and the fathers were very much interested in them....To radio station WLB to speak to my junior high school class of appendicitis. We have learned much of radio technique by speaking to youngsters. Only a few ideas, well explained can be received. Lately I have received comment from my adult listeners that they are learning a great deal from the Wednesday morning classes. I am wondering if I should not change my Saturday morning technique and continue to talk to the children....There is a rush for the bus as a large number of over-stuffed ladies burdened with bundles attempt to find their favorite place in the vehicle. When they are loaded they inevitably discover that someone from their home town or the next place is also riding in the same direction. This results in much shrieking and hollering back and forth, all occasioned by the great surprise of seeing them there, followed by requests for intimate details concerning themselves and other members of their family and acquaintances. Eventually we start, only to stop at the transfer station where we wait for something which evidently does not materialize. In Mankato with an hour to spare before dinner so I wander to the railroad station where a train is being made up. The crew is in the eating house consuming their dinner before the trip starts. No one ever seems to have quite so much in common as waitresses in railroad stations and train crews. I once rode across country with two ex-waitresses who might have been two movie actresses returning on a triumphant tour for no one has ever received quite the personal attention and acclaim as these two ladies did. An immaculate pullman porter is eating dinner in the most immaculate way. From time to time newcomers address their remarks to him. He looks up with frightened eyes to answer quickly for no one can appear more concerned and agitated than individuals of his temperament. To the hotel to meet my host and there the lobby is filled with raucous laughter by the boys coming in off the road for dinner. The one in every group who is the loudest always punctuates his remarks with profanity. When he does so he looks around with mock humility with his hand over his mouth, never appreciating that he has done it thousands of times without asking himself whether other people appreciate it or not until afterwards. It is a meeting of the public health association. Large number of ladies present with a scattering of men and school teachers. Large numbers of persons are introduced after the 65¢ swiss steak dinner. Annual report is read and all are cautioned to be brief, which they are. I tell them of the advancing front of medicine and they seem pleased to know that they are helping....Dorothy Jones, favorite person of the staff and our hospital children's greatest friend, is convalescing from a fall in which she had the misfortune to fracture her femur. She feels very proud of her fracture like No member of our organization enjoys the friendship of so many people who sincerely wish for her a speedy recovery.....