symptoms initiated by eating and consisting of a feeling of fulness, pressure, distress, eructations, heartburn or actual pain in the epigastrium, left upper quadrant or subcostal region.

These symptoms can be permanently relieved only by finding and correcting the extragastric pathologic condition producing them, as exemplified in the cases reported.

The abdominal symptom complex associated with distortions of the gastric feeding reflex is the most common one encountered by the gastroenterologist and the general practitioner. An understanding of these changes in the muscular activity of the stomach associated with extragastric pathologic conditions has been of inestimable value in rationalizing otherwise difficult clinical problems.

**ABSTRACT OF DISCUSSION**

Dr. Morton J. Oppenheim, Philadelphia: There is abundant clinical evidence in support of Dr. Welch’s views. Barron and his associates reported gastric hypermotility associated with epigastric distress. They concluded that sensory nerves of the stomach were stimulated by the abnormal motor activity; after cholecystectomy, gastric hyperactivity was recorded when patients complained early of gas pains and later of excessive flatulence. The symptoms were absent when the patient was placed in the supine position. It was suggested that the flatulence was caused by increased motility and that the flatulence was the cause of the pain.

The symptoms of hypermotility and peristaltic hyperactivity in the stomach from the standpoint of the gastroduodenal reflexes are exemplified by Dr. Welch’s case reports. The symptoms of hypermotility and peristalsis were associated with increased bowel sounds, which were attributed to increased motility by Dr. Welch. It was observed that the symptoms of hypermotility and peristalsis were associated with increased bowel sounds, which were attributed to increased motility by Dr. Welch. It was observed that the symptoms of hypermotility and peristalsis were associated with increased bowel sounds, which were attributed to increased motility by Dr. Welch.

Dr. Paul B. Welch, Miami, Fla.: Dr. Oppenheim has made reference to the inhibition of gastric motility by stimulants arising from extragastric viscera. This inhibition is not confined to the stomach but occurs throughout the entire digestive tract. Abdominal pain occurs frequently in association with kidney disease, stimulating the peristaltic reflexes in the colon, reflex disturbances in the colon motility were initiated by trauma to the right urter. There was first inhibition of motor activity, followed by a prolonged and gross increase in muscle tone and peristalsis in the colon. It is probable that the mechanism to cause the operation of the feeding reflex in the stomach as in the rest of the digestive tract.

**Clinical Notes, Suggestions and New Instruments**

**A DEVICE FOR PROTECTING THE SKIN AND COLLECTING FLUID FROM FISTULAS OR FOR KEEPING PENICILLIN SOLUTION IN CONTACT WITH A WOUND**

Lieutenant Commander George Crile Jr. (MC), U.S.N.R.

It is sometimes desirable to treat open wounds by application of penicillin solution. In cases when a penicillin saturated pack cannot be applied in such a way as to reach all the recesses or when the contour of the wound is such that it will not hold the solution, a device for sealing the entrance of the wound to retain the solution is of value.

In patients with external biliary fistulas the constant saturation of the dressings with bile makes the patient wet and uncomfortable. The same is true in the case of fistulas of the small intestine, and in addition secretions digest the skin if it is not protected. There is often a need for a device which will collect the secretions and at the same time protect the skin.

The need for some way to collect the fluid and protect the skin was quite urgent in the case of a nearly complete small intestinal fistula. The skin was not as yet eroded and it appeared as though a piece of rubber dam could be cemented to the skin around the opening in such a way as to protect the skin and at the same time allow the secretions to be collected. A catheter was first placed through a tiny hole in the center of a broad piece of rubber dam. The rubber dam was next covered with rubber cement and the skin similarly treated. The dam was then placed over the fistula in such a way as to allow the catheter to lie in the wound and the other end was attached to a Wagensteen suction apparatus. The suction successfully carried away the juices and kept a negative pressure.
against the rubber dam, so that it did not pull away from the skin. The patient was grateful to be able to lie in any position, to be dry and to have his skin protected from the painful
digestion of the intestinal juices.

This device has been used on several small intestinal fistulas with satisfactory results. It is applicable to biliary fistulas if the patient is more comfortable than with the dressings wet
or if it is desired to collect or measure the bile. It can also
be used on any open wound or on any localized skin lesion in which it is desirable to keep a solution of penicillin in contact
with the lesion for a considerable length of time. The peni-
cillin can be introduced through the catheter, withdrawn peri-
odically, and more of the solution inserted. If negative pressure and frequent irrigations are not required, the catheter can be eliminated and the penicillin injected by means of a small needle.

PRECAUTIONS

1. Make the hole in the side of the small and avoid wrinkling
   of the dam. Leaks tend to occur along wrinkles.
2. Cut several large holes in the catheter so that they will
   not become plugged with mucus or all lie against the side of the
   wound.
3. Clean the skin thoroughly with ether to remove all grease
   and moisture.
4. Put a very thin coat of cement on both skin and rubber
   and let both coats dry before applying the rubber. If applied
   wet or if the cement is too thick it will not stick well.

GASTROSTOMY IN POLIOMYELITIS—HILBISH

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Pharyngeal paralysis associated with difficulty in swallowing is not unusual in bulbar poliomyelitis, but this condition seldom persists more than a few days. Wilson 1 states that “difficulty in swallowing is transitory and the worst is usually over in
one week.” Physicians treating large numbers of poliomyelitis cases have, however, experienced situations on rare occasions when pharyngeal paralysis has persisted well over the week.

It has been shown that if life can be sustained through the acute phase of the disease there is practically always a 100
per cent recovery of the pharyngeal muscles. As a rule tube
feeding is not too difficult, but dangers associated with this
procedure are always present and must be avoided whenever possible. The three main hazards are (1) aspiration of mucus or vomitus with resulting bronchial obstruction and sudden
cessation of respiration, (2) choking attacks with temporary severe anoxemia and cyanosis and (3) excessive fatigue. In
the case reported here it was the latter which necessitated a
gastrostomy as a life-saving measure.

Review of the literature reveals a surprising absence of
case reports on pharyngeal paralysis. Brahdy and Lenarsky 2 reported 5 cases in which pharyngeal paralysis persisted from twenty-one to seventy-one days. The longest time interval found was in a case reported by Miller, 3 in which there was a complete inability to swallow for a period of eighty-six days. In
all instances reported in the literature, nutrition was main-
tained by intravenous, subcutaneous and rectal routes, as well
as by gastric gavage. After a thorough perusal of writings, not a single report was found in which a gastrostomy was
performed to maintain nutrition. For this reason the present case was considered of sufficient interest to report.

REPORT OF CASE

History.—M. A. C., a white schoolgirl aged 12, was admitted on
July 30, 1944 to the U. S. Marine Hospital at Fort Stanton,
N. M., complaining of difficulty in swallowing. She first became ill on July 28, at which time she became nauseated, vomited
and felt dizzy. The following morning she was seen by a
physician because of pain in the head and teeth. Acute simul-
sitis was considered at that time because of purulent discharge observed from the sinuses. The following evening she was
admitted to the hospital with the aforementioned complaints.

The past history was noncontributory. She had had measles,
mumps and chickenpox with good recovery. She also had “acute food poisoning” at 6 years of age, following which her eyes had remained “weak.” She had a tonsillectomy when 4
years of age but no other operative procedures.

The family history was entirely negative.

Examination.—On admission the patient was acutely ill and
toxic. Her temperature was 101.6 F. and pulse rate was 120.
There was pronounced nuchal rigidity, with loss of function
of the anterior neck muscles demonstrated by complete inability in
ability to hold up the head when the shoulders were lifted from
the bed. The patient had a decided nasal “twang” on speaking
and there was a complete pharyngeal paralysis. Administration
of liquids resulted in the return of these fluids through the
nose. There was some evidence of rigidity of the para-
vertebral muscles and a diminution of the ankle and knee jerks bilaterally. Chest, heart and other systems were essentially
normal. There was no evidence of other muscle involvement
at the time of admission.

Laboratory Findings.—The blood count showed 5,000,000 red
blood cells, 110 per cent hemoglobin, 12,800 white blood cells
with 78 per cent neutrophils, and negative Kahn reaction. Urinalysis showed 1 plus albumin, a few blood cells and 20

Presented with the permission of the Surgeon General, U. S. Public Health Service.

1. Wilson, J. L.: Prognosis of Poliomyelitis and Treatment of
2. Brahdy, M. B., and Lenarsky, M.: Difficulty in Swallowing in
   Acute Poliomyelitis. J. A. M. A. 103: 239-244 (July 28) 1934.