THE
POST-OPERATIVE MANAGEMENT OF
GASTRIC CASES

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The discussion of the care of the patient after a gastric operation will be dealt with under the following headings:—

1. The general management following a major operation on the upper abdomen designed to minimise complications.
2. Special treatment including diet for the more usual types of operative procedures of the stomach.
3. The recognition and treatment of the complications of such procedures in the early post-operative period.

(1) General Management

The problem of the return to the ward of a shocked patient is undoubtedly best solved by bringing the bed up to the operating theatre and transferring the patient gently from the table to his well-warmed bed. There can be no question of the deterioration in the condition of a patient by the disturbance of repeated moves. An unconscious patient is difficult to lift at any time, and the process is carried out more smoothly under the eye of the surgeon with the greater number of helpers available in the theatre as compared with in the ward. The point is, of course, of importance in proportion to the magnitude of the procedure which is being carried out.

It is now our aim to raise the patient from lying flat into the Fowler position as soon as it is safe. Thereby any peritoneal exudate tends to gravitate towards the pelvis and away from the subphrenic space. In addition, the pressure beneath the diaphragm is relieved and the embarrassment to respiration, always a problem after an abdominal incision, is diminished. After inhalation anaesthesia, the patient can usually be propped up gradually as soon as he comes round from the anaesthetic. Those who have had a spinal, though even more liable to develop chest complications than after a general, must remain flat for at least six hours and preferably a little longer in order to lessen the liability to subsequent headache.

Deep breathing exercises are instituted from the first post-operative day since thereby the percentage developing chest complications is smaller. It is a sound practice to give M & B tablets by mouth two days before operation to minimise infection of any subsequent collapsed area of lung. After operation injections of soluble sulphapyridine are given for three days.

Cases for gastrectomy or gastro-enterostomy will have had an aspiration and lavage of the stomach through a Ryle's tube passed nasally. It is a good plan to leave the tube in situ throughout and after the operation for the routine emptying of the stomach. Aspiration is carried out hourly for the first twenty-four hours and then at increasing intervals aiming to remove the tube after forty-eight hours or when the contents are clear, pale, and small in volume. I personally, employ the tube solely for aspiration and do not encourage it to pass into the efferent loop for early feeding into the jejunum past the anastomosis. Aspiration of the stomach is the most effective means of preventing an acute dilatation. Also by removing fluid that otherwise becomes foul and infected the liability to post-operative diarrhoea is diminished.

In my own cases no fluids are swallowed during the first twenty-four hours, and for some days subsequently the intake is not sufficient to meet body requirements and to guard against infection of the mouth leading to parotitis. Thus antiseptic mouth washes from the outset allay the dryness of the mouth and at the same time minimise infection. In order to meet the need for fluid, 5 per cent glucose and tap water should be given as a rectal drip. It will be retained satisfactorily for two days which will suffice in the average case. With more severe dehydration and where large quantities are being aspirated an intravenous drip of glucose saline, plasma or blood is set up according to the needs of the patient.

(2) Dietetic Treatment

The following diet chart indicates the lines upon which my patients are fed during the post-operative period following gastrectomy, suture of perforation or gastroenterostomy. It is conservative and may be stepped up more rapidly especially in the case of an uncomplicated gastroenterostomy until the patient adopts one of the standard routines laid down for the medical treatment of peptic ulceration.

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1st Day.
Sterile water 1 ounce hourly.

2nd Day.
Equal parts citrated milk and water 1 ounce hourly. (On the second day the Ryles tube is withdrawn.)

3rd Day.
Alternate hourly feeds of citrated milk 1 1/2 ounces and citrated milk 1/2 an ounce added to 1 ounce of albumen water.
1 ounce of water is sipped between each feed as desired.

4th Day.
Citrated milk 2 ounces into each pint of which is beaten up 1 egg. 2 ounces of water given between each hourly feed.

5th Day.
3-ounce feeds of egg and milk every one and a half hours. Water as before.

6th Day.
4-ounce feeds every one and a half hours of milk, egg and milk, or flavoured feeds (Ovaltine, etc.), as desired.
Water is now given more freely and junket is added to the midday and six p.m. feeds.

7th Day.
Two-hourly feeds of 5 ounces with egg custard added to midday and six p.m. feeds.

8th Day.
As above with thin crustless bread and butter and milk pudding added. A lightly poached egg and thin bread and butter should be substituted for the six p.m. milk feed.

9th Day.
Add creamed potatoes and weak milky tea.

10th Day.
Breakfast.—Lightly boiled egg, bread and butter, and milky tea.
Dinner.—Pounded fish, creamed potatoes, egg custard or jelly.
Afternoon Tea.—Milk or flavoured milk feeds are given between meals.

Following Gastrostomy

A 3-ounce feed of sterile water is run in through the tube. If this is well tolerated two-hourly feeds of 5 ounces of 5 per cent glucose-saline are instituted for the remainder of the day of operation.

1st Day.
5 ounces of milk two hourly.

2nd Day.
5-ounce feeds of egg and milk, thick or clear soups, Ovaltine or gruel, given two hourly.

3rd Day.
Three-hourly feeds of 8 ounces are instituted and, from now on, can be increased as they are tolerated.

A temporary remission in the dysphagia may result from the rest to the oesophagus and the patient may be able to swallow foods of varying consistency. Vitamins are given via the gastrostomy tube as are laxatives and other drugs when indicated. Great care should be exercised in the early post-operative period to ensure that the tube does not come out of the stomach through being dragged upon during feeds or the adjustment of the bandage. Peritoneal adhesions do not readily form in cachetic patients and it is sometimes difficult to replace the tube without separating the stomach from the anterior abdominal wall. The penetrating light and the suction apparatus which are available in the operating theatre make the task easier and safer.

Rammstedt’s Operation

For congenital hypertrophic stenosis of the pylorus.

Feeding is begun four hours after operation as follows:—

4 to 16 hours, one drachm 5 per cent glucose hourly.

16 to 22 hours, 2 drachms of breast milk hourly (or with artificial feeding diluted skimmed milk half measure to the ounce of water during the first day).

22 to 24 hours, 3 drachms as above, hourly.
24 to 26 hours, 4 drachms hourly.
26 to 28 hours, 6 drachms hourly.

The baby can now be put to the breast for feeds as convenient. He is allowed 1 ounce two-hourly for the first day, and 2 ounces on the following day. Three-hourly feeds are gradually instituted, the quantity being judged by the baby’s weight before he is discharged from hospital.

According to the practice of the Hospital for Sick Children, Great Ormond Street, artificial feeding is given in the same amounts and at the same intervals. Half Cream dried milk is substituted for skimmed milk on the third day.

The baby should be discharged as soon after the eighth day as is compatible with the home conditions since even the most efficient ward isolation...
may not prevent the occurrence of diarrhoea, recognised as the most deadly complication for this type of case. Occasional vomiting can often be prevented by allowing more time for bringing up wind even during the smallest feeds. If troublesome, 1 cc. of 1 in 10,000 solution of freshly prepared eumydrine can be given twenty minutes before the feeds.

(3) Post-Operative Complications

Haemorrhage. Reactionary haemorrhage becomes apparent by the vomiting of blood or its withdrawal through the Ryle's tube. The aspiration of a little stale blood is not unusual after a gastric resection or anastomosis. If it is more persistent, the quantities should be watched by aspiration every quarter of an hour, this serving also to keep the stomach free from clots when half to one cc. of adrenalin may be left in the stomach. Morphia may be given as a sedative and the trend of the pulse and blood pressure recorded. If the bleeding is copious enough to be vomited around the tube it is highly probable that operative interference will be indicated. A drip transfusion should be set up to replace the blood lost without at the same time raising the blood pressure sufficiently to promote further bleeding. If the operation has been a gastroenterostomy the suture line is easy of access through an incision in the anterior wall of the stomach. Bleeding points are seen and controlled by suture. Such, however, is not the case after a gastrectomy. Not only is exposure difficult but the severity of the procedure so recently performed, makes it preferable to rely upon the "medical" treatment of haematemesis.

Persistent Vomiting

When this occurs after an operation involving an anastomosis between the stomach and the jejunum it may be due to any of the following conditions:

1. Vicious circle vomiting.
2. Acute dilatation of the stomach.
3. Paralytic ileus—with or without peritonitis.

(4) Intestinal Obstruction

In the early stages the condition may be due to oedema or valve formation narrowing the recently sutured anastomosis with consequent dilatation of the stomach. Oedema will subside within some 48 hours but the true regurgitant or vicious circle vomiting is nearly always due to a mechanical fault of the loop and as such is an example of high intestinal obstruction. The fluid in the stomach contains bile in large quantities from the start, whereas that due to acute dilation of the stomach contains much less bile and much more mucus. Severe epigastric pain, frequent vomiting and a steady deterioration in the general condition of the patient as evidenced by rise in pulse rate, sunken facies, and cyanosis. Such conditions as herniation of small intestine into the lesser sac, or behind the loop selected for the anastomosis, or the twisting of the loop itself may give rise to this syndrome. So also may intussusception of either loop of the jejunum into the stomach.

Now whether the cause of the vomiting will have to be dealt with by operation is not immediately apparent, and since the ancillary treatment is the same for all types it should be instituted at the onset of vomiting in all cases. Therefore gastric suction is set up at once and the fluid and the chloride loss are replaced by intravenous infusion of 5 per cent glucose in saline in such volume as to allow of chloride appearing in the urine when the silver nitrate test is done. Morphia need not be withheld, but no fluids are given by mouth. Where no true obstruction exists the patient's general condition will be at least maintained by this treatment and within seventy-two hours should start.
to improve. This improvement will occur in cases due to oedema, causing valve-formation at the anastomosis, those due to acute dilatation of the stomach which has been taken early, and in cases secondary to a peritoneal irritation caused by some soiling at the time of operation but which is not now progressive. If no improvement occurs it must be assumed that the vomiting is secondary to paralytic ileus with or without peritonitis, or to an obstruction of the type already mentioned. In any case the ancillary measures must be persisted with when any attempt is made to deal with the additional factor.

Cases of paralytic ileus show a silent distended abdomen which is tympanitic or percussion. They are difficult to treat and the measures to be adopted are not universally agreed. My own routine is to make the following additions to the treatment detailed above. An intramuscular injection of anti-gas gangrene serum (forty-five thousand units) is given. Soluble sulphapyridine is instituted and changed to penicillin if I feel dissatisfied. I believe that the bowel requires rest, and purgatives and enemata are withheld for three days at least. On the other hand I believe that the bowel should be kept in tone by the three-hourly injection of ½ cc. of pitressin alternating with eserine until flatus is passed. I do not advocate ileostomy and I do not pass a Miller-Abbott tube as I fail to see how it can pass down a bowel which has no peristaltic activity.

Any case which deteriorates in spite of this treatment or in which there is reason to suspect that a spreading peritonitis is present must of necessity be returned to the operating theatre. A leaking suture line is closed and the peritoneal cavity drained. Obstruction confined to the afferent loop is treated by entero-anastomosis and internal herniation by reduction and repair.

**Burst Abdomen**

This is a self-evident complication usually following upon distension and especially in a malignant case. As soon as it is discovered the wound and the prolapsed intestines are wrapped in a sterile compress of normal saline and arrangements made for re-suture in the operating theatre. The operation is never easy but is best performed by a series of stout silkworm gut stitches passed through all layers including skin and peritoneum but left untied. They are held up while such layers as it is possible to suture are approximated by interrupted stitches of No. 2 chromic catgut. The silkworm stitches are now tied and the skin sutured with finer gut. With regard to anaesthesia gas and oxygen with intravenous curare is the ideal, with novocaine locally and pentothal intravenously where curare is not available.

**Sub-Phrenic Abscess**

An uncommon and comparatively late complication is sub-phenric abscess. It is notoriously difficult to diagnose and to treat. It is characterised by loss of strength, fever, wasting, and upper abdominal pain, sometimes referred to the shoulder. The leucocyte count is raised and the signs in the chest are of a compressed lower lobe of the lung with perhaps a small pleural effusion. The X-ray shows a raised diaphragm with diminished movement on screening and in certain cases a bubble of gas under the diaphragm and a fluid level in the abscess. There is no need to rush into surgical drainage. A full course of penicillin followed if necessary, by one of sulphonamide, may well allow the resolution of the abscess. Failing this an anterior abscess should be drained through the epigastrium and a posterior one by a resection of the twelfth rib.

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