AN ANAESTHETIC SCREEN, NEEDLE, AND THIMBLE AS "SURGICAL AIDS"

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The anaesthetic screen (Fig. 1) was designed in the first instance for goitre operations. Often when removing the thyroid gland the upper pole is found at a high level,

A towel is first wrapped round the head; the padded pieces (B) are placed in position over the towel and adjusted so that the head is grasped firmly. A sliding slot arrangement in connexion with the steel support (C) permits adjustment. A flat piece of metal (A) projects behind, and a sandbag rests on this to secure immobility. The frame (D) acts on a swivel, and can be moved backwards or forwards.

When the screen is in position the patient's head is raised, and two superimposed sterilized sheets are placed

FIG. 1.—A, plate for sandbag; B, circular pads to grasp head about the ears; C, sliding frame; D, wire screen.

FIG. 2.—Screen in position. X = goitre. The dotted line indicates the wire covered with gauze. A towel is held up for photographic purposes.

and the orthodox anaesthetic screen comes in the way of the surgeon's wrist and forearm. The screen is useful also in general work when no other anaesthetic screen is

under the neck. The superficial sheet is carried round the ear-pieces and the patient's head. The second sheet is brought round the neck in shawl-like fashion and secured to the sheets covering the patient. A gauze "wipe" of double thickness is thrown over the screen and fastened by "paper clips" (Fig. 2).

The screen is very light and portable. It is made by Messrs. Weiss and Co., Oxford Street, London.

Twin Needle

The needle illustrated is of the Doyen variety. The handle carries twin needles. The standard pattern is so designed that a Halsted suture can be quickly introduced

FIG. 3.—Twin needle. Note method of threading with straight sewing needle.

available, and in emergency operations (such as tracheotomy) undertaken in a private house. It is adjustable, and fits on to the head. The patient can neither see nor hear, which is an advantage when local anaesthesia is employed.

FIG. 4.—Showing thimble in use. An incision for counter-drainage has been made on the thimble. The tube is placed in position and guided to the bottom of the pelvis. (Wheeler's Operative Surgery.)

through the deeper layers of the abdominal wall in cases where difficulty is experienced in fat subjects or when laxity cannot be obtained. The eyes are sufficiently large to allow the passage of a straight needle for threading purposes (X, Fig. 3).

When the catgut is in position the loop between the two eyes should be pulled out several inches before withdrawing the needle. Otherwise withdrawal is difficult, and the catgut may become frayed. Fig. 3 shows one suture in position and the needle being threaded for the introduction of a second.

The twin needles are made in several sizes, and with varying spaces between the two. They are supplied by Messrs. Down Bros., London.

Thimble Guide

A thimble on the first finger acts as a guide on which a quick opening may be made for counterdrainage in cases of septic peritonitis (Fig. 4). The model now recommended is made by Weiss. It should fit the finger tightly. When the hand is passed from the main incision within the abdomen towards the suprapubic region the thimble is kept closely applied to the deep aspect of the abdominal wall, so that there is no possibility of a loop of small intestine being pushed forward and injured by the knife. A small incision is rapidly made on the finger guarded by the thimble; a tube is slipped over the top of the thimble and guided to the bottom of the pelvis by the hand. The illustration depicts a glass tube; a rubber variety is now more commonly employed. The thimble is of use in many situations (such as the axilla after breast amputation) where counterdrainage is needed.

PERFORATED TYPHOID ULCER

NOTES ON THREE SUCCESSFUL CASES

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Perforation of typhoid ulcer occurs as a complication in about 3 per cent. of all cases of the disease, and, according to various authorities, accounts for approximately 30 per cent. of the total mortality. There is but one form of treatment—namely, operation as soon as possible. This is attended by a very high death rate. Harte and Ashhurst,¹ in their classical paper on this subject, based on a large series of cases, quote it as 74 per cent., with decided increases depending upon the twelve-hour periods elapsing between the occurrence and surgical intervention. The rate is distinctly lower in children, being given as 50 per cent. by Jobson and Gitting,² and as 36 per cent. by Elsberg.³

CAUSES OF HIGH MORTALITY

The factors responsible for this high mortality may be summarized as follows:

1. The catastrophe occurs generally during the second to third week of the disease, when the patient's general condition is at its worst, with severe toxæmia and a weak and dilated heart as contraindications to the necessary shock attending surgical intervention.
2. Occasionally it is very difficult to make a diagnosis of actual perforation, particularly in cases where great abdominal discomfort, pain, and distension have been dominating symptoms from the onset of the disease. (In such cases, however, a leucocytosis will always indicate the onset of peritonitis, and in any event it is probably better to submit even a weak and debilitated patient to the risk of laparotomy than to overlook a perforation until it is too late.)
3. The perforation may be complicated and temporarily masked by the simultaneous occurrence of intestinal hæmorrhage from the separation of sloughs.
4. As a general rule, in cases of perforated typhoid ulcer, infection of the general peritoneal cavity by the

extravasated intestinal contents is present from the first, with the formation of a watery exudate, and with little attempt at localization, or the formation of adhesions. (This was a feature of Cases I and II, described below.)

5. Difficulty is frequently experienced in suturing the perforation owing to the inflamed and friable condition of the bowel caused by adjacent ulceration. This has led some surgeons to treat the condition by passing an enterostomy tube through the perforation, fixing it *in situ* by a catgut stitch, and contenting themselves by draining the affected loop of bowel. Two successful cases treated in this way have recently been published by Branch.⁴

6. Occasionally perforations may be multiple, two, or even three, being present, and the necessary handling of the intestine during the operation may cause the perforation of adjacent ulcers.

7. Leakage frequently occurs, after apparently successful suture, resulting in the formation of a faecal fistula. These possibilities (Nos. 5, 6, and 7) have caused Roux-Berger,⁵ Cadenat,⁶ and others to treat the perforated loop of bowel by exteriorization, in addition to suture or enterostomy, but this method does not appear to have lowered the mortality.

8. Pulmonary complications, notably pneumonia, are common sequels of the operation.

THE HIGH DEATH RATE IN CHINA

In China the mortality tends to be still higher, as, in addition to the above considerations, there is the fact that the majority of patients wait until their conditions are literally hopeless before submitting to operation. An interesting point in the local occurrence of the disease has been observed by Loucks,⁷ who considers that in some years typhoid infections show a much greater virulence than in others, and that there is then a much higher incidence of perforation. In view of these facts, the first and second cases here described are encouraging in that twenty and forty hours elapsed respectively between perforation and operation, which was successful, and the third case is interesting as illustrating how localization of a typhoid perforation in a hernial sac may simulate a strangulated inguinal hernia.

CASE I (J. B. G. M.)

Perforation of typhoid ulcer, with operation twenty hours after onset: recovery.

L. W., aged 11, daughter of a Chinese merchant, was suffering from a severe attack of typhoid fever (Widal ++). On September 15th, during the third week of the disease, she was suddenly seized with acute pain in the lower abdomen, with vomiting, and became very collapsed. Her medical attendant, Dr. T. J. Hua, saw her half an hour later, when abdominal distension and rigidity were becoming apparent, and diagnosed perforation of a typhoid ulcer, a diagnosis which was subsequently confirmed by two colleagues. Operation was advised, and after considerable discussion consent of the family was obtained; I was eighty-five miles away when telegraphed for. Unfortunately, owing to infrequent trains, I was unable to arrive before 6.30 the following morning. During this time the patient was kept in the Fowler position, continuous "drip" rectal saline containing 5 per cent. glucose was administered, and 5 minims of tincture of opium was given by the mouth four-hourly. I performed laparotomy, under open ether anaesthesia, at 7 a.m. on September 16th, twenty hours after the perforation had occurred. A large quantity of seropurulent fluid escaped from the abdomen when the peritoneum was opened, but there was surprisingly little congestion or lymphatic exudation on the intestinal coils. A small circular perforation in the base of an ulcer was found, situated on the free border of the ileum, about 8 inches from the caecum, and was closed by invaginating purse-string sutures of chromic catgut. The extravasated fluid was thoroughly mopped up, and the abdomen was closed with a large pelvic drain *in situ*, the whole proceeding occupying only eight minutes. The child suffered from severe shock, and her condition was very grave for about twenty-four hours, when she began to rally, and made