FOREIGN BODIES LEFT IN THE ABDOMINAL CAVITY AFTER OPERATION.

BY

PALMER FINDLEY.

Omaha, Nebraska.

In former years, the abdominal surgeon was seriously disturbed by well-grounded fears of secondary hemorrhage and sepsis, but surgery has mastered these problems to a large degree and they are little feared and seldom experienced. Now it is the thoughts of the sponge that disturb the night's repose when the report comes that something has gone wrong with our patient.

As with the shade of Banquo, the subject will not down. No matter how confident the operator may feel in his safeguards, he can never rid himself of the feeling of uncertainty as to the possibility of leaving a sponge or an instrument in the abdominal cavity.

In reviewing the literature and in talking with surgeons one is impressed with the great diversity of precautionary measures, and yet it is doubtful if any are infallible.

It is usually in the difficult cases requiring a great number of sponges that the accident occurs, and it is in just such cases that any routine practice may miscarry.

In 1899, Neugebauer collected 108 cases of accidental leaving of foreign bodies in the abdominal cavity (*Zent. f. Gyn.*, 1904, No.

3, and *Monat. f. Geb.*, vol. xi, No. 4). He has since made additional reports; the last appearing in the *Archiv. für Gynäkologie*, 1907, Band lxxxii. The total number of cases reported by Neugebauer now number 236. He refers to the unfortunate consequences in case suit is brought. When the court absolves the surgeon from legal responsibility, there is yet the sacrifice in loss of time, loss of practice and moral depression.

Schauta says that every suit brought against a surgeon for the leaving of a foreign body in the abdomen is equivalent to conviction, because the surgeon is discredited in the eyes of the public.

The following case is in point:

Döllinger, of Budapest, removed a sarcomatous growth from the abdominal cavity. Fifty artery clamps were used in the operation, but these were not counted. The operation was hurried because of the depression of the patient. Patient remained in the hospital twenty-three weeks. Two years later she became pregnant and in the second month of her pregnancy an abscess developed in the scar of the abdominal incision. Shortly after the birth of the child, which was at full term, a fistula opened in the scar and in the fistula an artery forceps was found. She was taken to another hospital where the forceps was removed. Döllinger was held responsible in damages. The public press took up the cry, comic papers made capital of it and pamphlets on the case were sold at cigar-stands. This went on for a year. The court decided for the defense. Though acquitted before the law, the surgeon was convicted in the eyes of the public. Döllinger afterward stated that the case consumed all his time for thirteen months, during which time he was so disturbed in mind that he was wholly unfit to do scientific work. Some of his critical colleagues worked to his detriment and the harm done by the public press was irreparable.

Döllinger asks: "What can we do to protect ourselves against such blackmail?" In the absence of international jurisdiction, it is impossible to come to mutual agreement. It is not the verdict that we are so much afraid of as the abuse of press liberty and sensational reports.

For the purpose of emphasizing the possible occurrence of this accident in the hands of the most skilled of surgeons, of showing how the accident may occur, and what the penalty to patient and surgeon, the following cases are briefly recited. These records are taken from already reported cases. Some of them have been given me by my colleagues for the purpose of making this report.

Amann, of München, proceeded to operate on a case for a fibroid of the uterus that had been operated on in America eighteen months previously. The fibroid proved to be a pear-shaped mass on the fundus of the uterus composed of an inflammatory exudate surrounding a gauze sponge. Recovery followed its removal.

Van Marter and Carson reported in the AMER. JOUR. OBST., 1904, two full-term ectopic pregnancies, in one of which a gauze tampon was expelled through the rectum seventy-five days after the operation. The gauze measured thirty-six by eighteen inches. There was no temperature in this case, but the pulse was rapid and the patient complained of abdominal pains and constipation. After the expulsion of the gauze recovery was rapid.

Eckstein performed a laparotomy for the removal of an ovarian cyst. A stitch infection appeared on the ninth day. This cleared up promptly and the patient was apparently well for one year, at which time she complained of pain at a point one inch above and to the right of the umbilicus. Three months later a fistula opened at this point and through the opening a small strip of gauze was removed. Recovery was speedy. The count of the sponges was correct, but the lost strip was loose in the folds of a gauze pad.

Allison, an English surgeon, reported a case in the *Lancet* of February 16, 1901, in which a man of forty-nine years had been operated eight and one-half years previously for an internal incarceration. He found a metallic foreign body protruding through the abdominal wall on the right side and immediately above Poupart's ligament. It was recognized as an artery clamp. The man refused an incision and the surgeon removed only the point of the instrument. Later the patient returned with half the forceps which found its way out, but at the time of making the report he was still carrying the remainder of the forceps in his abdominal cavity.

Gruzdew (*Zent. f. Gyn.*, 1906, No. 46) recorded the case of a woman of fifty-eight years who presented herself in his clinic with a foreign metallic body protruding through the abdominal wall. On vaginal examination, the handle of the instrument was felt in the cul-de-sac of Douglas and was removed per vaginam. Recovery was rapid. The instrument was a clamp 20 cm. in length and was partially covered with white connective tissue.

Hedlund (*Hygiea*, 1904, No. 9) removed a Peán forceps from the abdomen of a patient who had been operated six years before for

a myomatous uterus. She was apparently well two years after the original operation. Then followed disturbances of the stomach for four years. Ilius developed six years after the initial operation, when Hedlund removed a Peán forceps that had perforated the small gut and was buried in adhesions. The patient died in forty-eight hours from uremia. The autopsy revealed a contracted kidney, but no peritonitis.

Janczenski, after ten years of careful work in abdominal surgery, removed a pyosalpinx and ovarian cyst. It was a difficult operation because of adhesions. Both vaginal and abdominal drainage was established. A pad of gauze placed over the viscera while sewing the peritoneal incision was forgotten. Convalescence to the fourteenth day was normal and the stitches were removed; the patient left her bed. On the twenty-first day, the wound opened and the gauze pad which had remained sterile presented at the opening. After its removal the wound closed promptly.

Küster, of Breslau, removed a cystic tumor of the pancreas. It was a difficult, bloody operation. The basal part of the cyst was stitched into the abdominal incision. Convalescence was slow. Six weeks after the operation, a tender spot appeared at the upper end of the incision. This was incised and a small forceps removed. Recovery followed, though slowly.

Poten, of Hanover, removed a large adherent ovarian cyst. Large areas of peritoneum were stripped from the abdominal wall in the removal of the cyst. Bleeding from the raw surfaces was controlled by a long strip of gauze; this was forgotten. A stitch abscess developed and in this abscess the end of the gauze roller presented. Removal of the gauze was followed by a speedy convalescence.

H. Riese (*Archiv. f. klin. Chir.*, vol. lxxiii) lost gauze compresses in two cases out of a total of 900 laparotomies. The first was an intraperitoneal nephrectomy. For several days there was evidence of peritoneal involvement, then convalescence progressed satisfactorly for a month. At the end of this time pain and fecal vomiting set in and a tumor the size of a man's first was located to the left of the umbilicus. An incision was made over the tumor and there was removed a gauze strip one metre long. Recovery followed.

The second case of Riese was a tubal pregnancy, a difficult operation. Convalescence was uneventful. Three years and ten months later the patient returned to the hospital complaining

of abdominal tenderness, constipation and a sensation as of a foreign body in the abdomen. At the left of the uterus was found an ovarian cyst and above this was a cyst the size of a billiard ball, the contents of which was a sterile gauze sponge.

Riese recalled another case where the woman, after an abdominal operation, pulled from her mouth a piece of gauze and claimed that it had been left in the abdomen by the operator. Suit for damages was brought. Riese was called before the state's attorney for explanation. The impossibility of such an occurrence was impressed upon the state's attorney and the case was dropped.

J. Veit reported a case to the Berlin Obstetric Society in which a vaginal hysterectomy was performed and a rubber tube was left for drainage. The tube was forgotten and four and one-half months later was passed by the bowel.

A similar case was also reported by Veit in which a rubber tube was passed through the bladder and urethra. (*Zeitsch. f. Geb. u. Gyn.*, Bd. xii).

Winter (*Zeitsch. f. Geb. u. Gyn.*, Bd. li, H. 1, 1904, S. 170) removed a myomatous uterus. It was a difficult operation. There was considerable hemorrhage, and compresses were used to control the oozing of blood. Three weeks later death occurred from an embolus emanating from a thrombus in the iliac vein. Over this vein was a foul-smelling compress.

Waldo, of New York, reported a case in which a strip of iodoform gauze remained two years in the abdominal cavity. It was removed and recovery followed.

Stewart Fergusen (*Australian Med. Gaz.*, Sept., 1906) reported a case in which an ovariotomy was performed, and ten and one-half years later a forceps was found in the left iliac fossa which had caused local pain and bladder disturbances. It had ulcerated into the bowel. The forceps was removed and intestinal anastomosis performed and recovery followed.

Le Gende (*Gaz. des Hosp.*, May 13, 1906) reported a case in which a forceps was left in the abdominal cavity during a period of six years when death occurred. The autopsy revealed the forceps, which had caused an abscess formation and necrosis of the bowel.

In the *Russian J. of Obst. and Gyn.*, March-April, 1906, is recorded a case in which an artery forceps was left in the abdominal cavity. Necrosis of the bowel occurred, requiring resection of the bowel. Recovery.

Essen-Moeller reported the case of a woman, sixty-six years of age, from whom a cancerous ovary was removed. An artery clamp was left on a bleeding vessel, coils of bowel covered it and it was forgotten. Death followed symptoms of ileus. In the postmortem examination the forceps were found to have perforated the bowel.

Sippel, of Frankfurt, removed a broad ligament tumor. A gauze compress was used to control the hemorrhage. An abdominal drainage of iodoform gauze was used and removed on the following day. Six weeks later the forgotten compress was discharged through the bowel.

Th. Landau operated a case of extrauterine pregnancy (*Berlin. klin. Woch.*, No. 32, 1906). Six years before, this patient was operated for an ovarian tumor and eighteen weeks subsequent to this operation a towel was removed from the abdomen.

W. Stoeckel (*Zent. f. Gyn.*, No. 1, S. 1–5, 1907) reported a case in which a gauze sponge was left in the urinary bladder. The bladder had been injured accidentally in an abdominal operation and this sponge had been placed in the wound. Bladder tenesmus and turbid urine called for a cystoscopic examination, and in this manner the gauze was located.

MacLaren, of St. Paul, in writing of "Personal Surgical Errors" (*J. A. M. A.*, vol. xlix, No. 3) reported four cases:

Case I.—Ovariotomy and ventrosuspension. Gauze sponge left in peritoneal cavity; expelled by the rectum ten days later; recovery. The sponge occasioned obstinate constipation, pain and a temperature reaching 101° F., until the sponge was expelled through the bowel.

Case II.—Hysterectomy. Immediate recovery; later persistent pain and tenderness in pelvis, with formation of tumor in right loin at end of two years. Abdomen opened and artery forceps found imbedded in adhesions, omentum and ulcerated bowel. The point of the forceps lay within the appendix, the handle in the lumen of the cecum, the middle of the shank transfixed a coil of the ileum. The cecum was opened to remove the forceps, the adherent coils of bowel were separated and the openings into the bowel were closed with catgut. Recovery was perfect.

Case III.—Vaginal section for pelvic suppuration. Gauze strip left in wound. Strips of iodoform gauze were used to control hemorrhage from the vaginal walls. Because of secondary hemorrhage, the case required two subsequent packings. After

returning home an odorous discharge from the vagina incited the patient to make a digital examination. Her search was rewarded by the finding of a strip of iodoform gauze, for which she was rewarded handsomely by the operator, though admitting that it was not his fault.

CASE IV.—Hysterectomy. Tape sponge left in the abdomen. The operation was bloody. The count of the sponges and instruments was reported correct. At the postmortem examination on the fourth day, following the operation a tape sponge, twelve inches square, was found rolled into a ball under the liver. No other cause of death was discovered.

MacLaren speaks of having witnessed two postmortem examinations when an interne in a New York hospital, where the leaving of sea sponges caused general suppurative peritonitis. He observes that in these later days when gauze sponges have replaced sea sponges the mortality of these cases is much lessened. He has knowledge of ten cases where sea sponges were left in the abdominal cavity, and in nine of this number death ensued from general suppurative peritonitis; in the tenth case there was a localized abscess formation.

It is of interest to note the various safeguards adopted by surgeons. Colmann recommends that the compresses have a tape attached to the free end that is long enough to tie to the leg of the operating-table and after using they are to be dropped to the floor.

Fisher, in the *Annals of Surgery*, 1908, proposes a linen tape, three to four feet in length, armed at one end with a needle by which the compresses are transfixed on the tape. A piece of lead weighing a half-pound is attached to each pad to prevent the pads from being lost in the coils of bowel.

Gruzdew, at the completion of the operation, irrigates the abdominal cavity with sterile normal salt solution and then passes his hand over all parts of the viscera in search for sponges and instruments.

Fritsch sews on each compress a long black thread which hangs out of the wound and over the side of the operating-table.

Kruitchmann marks his sponges in Roman and Arabic numerals and in letters as follows: I, II, III, IV; 1, 2, 3, 4,; a, b, c, d. After using, the sponges are placed on the floor by a nurse in the order as marked.

Mikulicz attached a long thread to each compress and on the end of the thread he strings a glass ball which hangs over the side of the operating-table.

Rossel attaches to each compress a tape 20 cm. long at the end of which is a sinker weighing three grams.

My own method is as follows:

Three sizes of gauze sponges and compresses are used; a roll five yards long and four inches wide and six plies in thickness; second, a compress one yard long, eight inches wide and three plies in thickness; third, tufts of gauze so folded as to infold all edges to prevent loose threads or layers of gauze from rubbing off on the viscera. To the free ends of the rolls and compresses is sewed a tape twelve inches in length and to this tape is attached an artery clamp. From the time the abdomen is opened to its closure no sponge is handed the operator or assistant without a sponge holder in the form of a long clamp.

Before sterilizing the rolls, compresses and sponges, they are counted three times by two nurses, then wrapped in towels and the number marked with indelible ink on the wrapper.

Before these sponges are removed from their wrappers all loose sponges about the operating-room are removed. The sponges and compresses to be used in the operation are then counted by the clean nurse and the assistant. This count is made separately to avoid the possibility of error, and the number is then placed on a slate. If additional sponges are required in the course of the operation they are to be counted and added to the number on the slate.

The soiled sponges and compresses are thrown into a receptacle from which they are taken by the nurse in attendance and arranged in parallel rows on the floor in order that the count may be facilitated at the close of the operation. While closing the peritoneum, the assistant and clean nurse count the sponges and compresses, and if the number corresponds with that on the slate the wound is closed; if not, search must be made for the missing sponge. The clamps, forceps and scissors are also counted prior to the opening of the abdomen and before the incision is closed.

Observance of these rules has twice saved me from the loss of a sponge in the abdominal cavity. In both these cases the count showed one sponge missing after the peritoneum was all but closed. The stitches were removed and the sponge found in the pelvis. In another instance it did not save me from the grievous error. In the course of the operation I cut a roller in two and called the attention of the assistant and nurse to the fact. At the close of the operation they reported all sponges and compresses accounted for and the abdomen was closed. Ten days later I cut

down upon a swelling in the left lumbar region and removed a strip of gauze five feet in length. Convalescence was satisfactory after the removal of the gauze. It is needless to remark that thereafter I have cut no more compresses.

The following reports of cases which have been settled in court will be of interest in showing the temper of the court in these cases.

Dr. Mary Thorne, of England, was sued for leaving a sponge in the abdomen. She was fined twenty-five pounds. The defense claimed that the responsibility rested with the nurse whose duty it was to keep track of the sponges, claiming it to be the sole duty of the surgeon to devote her attention to the patient. The justice recognized the skill of the surgeon, but the question under consideration had reference to the want of due and reasonable care and superintendency in the counting of the sponges. The second question involved was; Was Mrs. Palmer, the nurse, employed by the defendant to act as an assistant in the operation? Third, Was the nurse guilty of negligence in counting the sponges? Fourth, Was the counting of the sponges a vital part of the operation which the defendant undertook to see properly performed? Fifth, Was the nurse under the control of the defendant during the operation?

The jury answered all these questions in the affirmative. The damages were assessed at one farthing. The justice returned the jury and a second judgment was rendered for twenty-five pounds.

Prof. Pior Foa, of Turin, operated a case for gall-stones. The wound was left open and packed with gauze. The next day part of the gauze was removed by the operator and the case was then placed in charge of the interne. Patient improved, but an unfavorable prognosis was given. Later he was removed from the hospital. Soon pain, dyspnea and temperature set in. The wound closed, leaving two fistulæ, through which a strip of gauze was detected by a second physician. The patient died. At the postmortem examination two litres of pus were found in the abdominal cavity, together with a gauze pad 70 x 40 cm. The report of the pathologist was: "General suppurative peritonitis and pleurisy due to the presence of gauze left in the abdominal cavity. Suit followed.

First suit decided that the patient would have died from other causes than the presence of gauze in the abdomen. The prosecution claimed that the records of the hospital were falsified,

hence a second trial was granted. In the second suit ten experts testified that the gauze was the exciting cause of the death. The suit was withdrawn for lack of proof. Pior Foa concludes that the Italian government should submit such cases to technical men rather than to quacks, and blames the pathologist for his examination and report.

The question may arise, How can we prevent litigation in such cases? Unquestionably, the prophylactic measure of exercising every possible precaution is of the greatest value. For the operator to demand a release on the part of the patient before operating is a confession of weakness and has no practical value.

Kossmann advocates starting a counter suit for libel in the expectation that the prosecution will retract. Such protection as is afforded by the Physician's Defense Company will prove the greatest service to the surgeon, not so much in defense in court as in preventing these cases from coming to suit.

Richardson says he has on several occasions found foreign bodies in the abdomen left there by other surgeons, but in no instance has the occurrence been made known to the detriment of the operator.

It is to be hoped that all surgeons will be equally charitable, if for no other reason than that we are all liable to become the victims of this grievous error.

3602 Lincoln Boulevard.