ACCIDENTAL PERFORATION OF THE UTERUS DURING CURETTAGE—A CASE WITH BOWEL INJURY AND RESECTION OF FOUR FEET OF SMALL INTESTINE.

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The literature relating to accidents during curettage dates back to the time of the first use of the curette by Récamier. From that time to the present, accidents of various kinds have been reported. The perforations were caused by any and all of the different instruments that are inserted into the uterine cavity. The accident either was followed by no ill effects or resulted in death. Between these two extremes all varieties are represented. Perforation of the uterus during curettage has occurred in the hands of experts. More frequently, probably, the accident has happened as the result of inexperience and carelessness. The expert recognizes at once the making of a false passage and institutes the proper treatment. The novice may remain forever in ignorance of what he has done or come to a horrible realization when he pulls out, not membranes, but gut.

In spite of warning and teaching to the contrary, curettement is generally considered by the rank and file an innocent, simple and easy operation. It is said to belong to minor surgery, and every beginner performs it.

Success in a number of cases may lull a man into a state of security and contempt for such a little operation, until suddenly he is brought to a proper realization by the mischief he has done.

The object of this paper is to report a case of accidental perforation, to present a résumé of the literature and to call attention again to the danger that may lurk in a seemingly simple operation like the one in question.

History of Case.—Mrs. B., age, forty-six. Has had six children and several miscarriages; the last one a year ago required curetting. She was a hard working woman, and her general health was fairly good. She had been a few months pregnant and again aborted. Her family physician, a man of excellent general ability, was called, as the woman was flowing. Her doctor first tried to empty the uterus without an anesthetic, but could not finish on account of pain. Next day, under chloroform, he proceeded to finish the operation. A Goodell

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dilator was introduced into the patulous cervix and the blades separated. A placental forceps was then introduced, presumably into the uterine cavity, and something which was felt was pulled down. This proved to be small intestine, whereupon the same was hastily replaced and the vagina packed with iodoform gauze. The author saw the patient several hours later in consultation, and had her taken at once to the hospital. Her condition was fair; there was little shock; she looked somewhat pale and anxious. Pulse 120, temperature 101°. Abdomen flat, soft and not tympanitic; slight tenderness over lower portion. No vomiting and little pain. She was prepared for laparotomy, and the abdomen was opened about seven hours after the accident. A few clots of blood were sponged out of lower abdomen, but there was no free fecal matter. The bowels were fortunately empty. On pulling up the coils lying in pelvis they were seen to be detached from the mesentery for a considerable distance. The bowel itself was uninjured except for slight bruised areas here and there. One portion of bowel was seen to enter a rent in the anterior surface of uterus, whence it was easily pulled out. The mesentery showed no bleeding, although large arteries and veins had been torn across. The gut was torn away at its mesenteric attachment, no portion of the mesentery adhering to the bowel.

There being no other injuries, a resection of the injured portion was made and an end-to-end anastomosis done with a Murphy button. The free edge of mesentery was sutured with a running catgut suture. Four feet of bowel was removed.

The uterus was retroflexed, somewhat enlarged and firm in consistency. On its anterior surface was a transverse slit which led diagonally through the wall, terminating at point of angulation. It was large enough to admit the finger. The uterine cavity was empty. The perforation was sutured with interrupted catgut and the abdomen closed without drainage.

Subsequent History.—The patient made an uneventful recovery. Wound healed by primary union. Button passed on the tenth day. No further uterine symptoms, and at this writing the patient is quite well.

Remarks.—The perforation was due, not to any abnormal softening of the uterus, but to a failure to appreciate beforehand the direction of the uterine canal. The uterus being retroflexed, the dilators, with their curved points, were introduced, under the impression that the fundus was forward. Hence the piercing of the anterior wall at point of angulation.

In the second place the placental forceps was used and something was grasped in the dark without it being known what was in the hold of the instrument. The gut, on being pulled through the false passage, was stripped from its mesentery. The arteries and veins, owing to their severance by torsion, did not bleed, beautifully illustrating this long-known surgical phenomenon.

Is there such a thing as temporary paralysis of the uterus?—If, while passing a sound into the uterine cavity, the instrument slips to an abnormal depth—slips away into unresisting space—does that mean a perforation? It is always with a sense of relief that one feels resistance on passing sounds in a certain class of cases. Beuttner reported some cases where, after distinctly palpating the somewhat enlarged uterus, he then passed a sound which entered 13 to 20 cm. This phenomenon he tried to explain on the hypothesis of a temporary paralysis or "ballooning" of the uterus, due to mechanical stimulation. In the absence of ocular demonstration, his views were generally contested, and his cases considered as probably perforations.

Kossmann, before curetting, passed a sound with extreme care; it slipped in to 14 cm. After a short time the canal measured 7 cm., whereupon he proceeded with the operation and felt the uterus to be firm and contracted. Kossmann believes the case to have been one of temporary paralysis of the uterine wall. It is more within the realm of experience, however, to consider such cases perforations.

Can the Fallopian tubes be probed in the normal subject?—Probably not; but the presence of tumors or other morbid conditions may render them permeable to a sound. Thorn experimented on specimens removed by operation and on the cadaver. He was unable to pass even a fine probe into the tube in cases of approximately normal uteri. He regards doubtfully the claims of those who report having passed probes on the living. Generally the cases were perforations.

The cases of Bischoff and Floeckinger are the only ones on record, according to Thorn, in which a sound was passed into a tube and demonstrated to be there by immediate operation. Both cases were myomatous uteri.

It is safe to assume, then, that when a sound passes to an abnormal depth in a uterus palpably of about normal size, that it is a case of perforation.

Factors Predisposing to Perforation.—These are conditions general or local, which have as a result the atrophy and softening of the uterus.

Döderlein, in his chapter on "Atrophia Uteri" in Veits' Handbuch

der Gynäkologie, p. 390, agrees with Thorn in classifying atrophy into (a) Physiological, and (b) Pathological. The former includes lactation atrophy, senile and post-operative atrophy; but as these are mostly concentric with firm walls, the organ is rarely the seat of perforation.

The pathological variety of atrophy may be (a) puerperal, or (b) non-puerperal. It is in cases of puerperal atrophy that the accident of perforation has most frequently occurred. The prime factor in this form of atrophy is "infection."

Dittrich has demonstrated in cases of puerperal septic metritis the presence of hyaline degeneration, fatty degeneration and necrosis of muscle fiber.

Döderlein mentions cases of excentric atrophy in which the uterine canal is longer, but the wall very thin and friable. Such a uterus is usually retroflexed and very difficult of palpation. On passing a sound the instrument is liable to pass through the wall in spite of care.

Schulze-Villinghausen had two such cases occurring in weak, poorly nourished women, who had undergone numerous pregnancies and abortions. The uteri were large and soft. When the sound was passed, it simply went through the wall without any resistance being offered. The experiment was repeated and a vaginal hysterectomy done in both cases. Careful microscopic examination was made and can be read in detail in the original. The main points were the absence of fatty degeneration of muscle fiber; the separation of the muscle by an edematous infiltration; the great increase of blood-vessels with thickened walls, and the absence of inflammation.

Glaeser reports a somewhat similar case where the sound passed through of its own weight. After a vaginal hysterectomy the fundus was seen to be very thin and soft, or, as described by Glaeser, "wie gäusefett" (goose fat).

The studies of Ries on post-puerperal atrophy of the uterus have shown that the wall may be of extreme thinness, and the mucosa partially or entirely gone. In extreme cases the wall may in places consist only of thrombosed vessels, the muscle fibers having disappeared through fatty necrosis. This type is the so-called "uterus membranaceus."

Kentman reports a case of myometritis edematosa, in which he discovered that he had perforated and performed a vaginal hysterectomy. Microscopically the muscle fibers were separated from each other by large interspaces, which were filled by a hyaline exudate. The vessel walls were thickened and the muscle fibers degenerated.

Bacon and Herzog report the findings of a case which terminated

fatally soon after curettement. There had been a chronic infection lasting for months. The uterus was highly degenerated and showed areas of necrosis.

Dupuy speaks of cases where the uterus was so friable that instruments passed through with the utmost ease.

Among the local conditions which may be associated with uterine atrophy and softening are carcinoma, myoma, pelvic tuberculosis, pelvic abscess, etc.

Such general diseases as leukemia, diabetes, nephritis, Addison's disease, tuberculosis, pernicious anemia, may, along with the general wasting, be accompanied by uterine atrophy.

Gottschalk reports atrophy after acute infectious diseases, viz.: scarlet fever, typhoid fever and articular rheumatism.

Polak had a case in which the woman had a laparotomy some years before. There was a purulent discharge. Uterus perforated with Goodell dilators; immediate laparotomy. At the point of perforation the uterine wall was softened by suppuration, due to the working through of some heavy silk. Opening sutured and recovery.

Is the Operator Blamable if He Perforates the Uterus?—This is an important question from a medico-legal standpoint, and one whose decision must be based on all the attending facts and circumstances. Mention has already been made of that class of soft uteri which offer absolutely no resistance to any instrument. The most expert operator will perforate, but will at once recognize the condition and act accordingly (Brothers, Alt, Liebman, Zinke, Queisner, Schulze-Vellinghausen, Kelly, von Herff, and others).

The novice, however, will remain in the dark as to the situation, and will persist in curetting and pulling down things with the placental forceps.

In the former event the operator should not be held liable, even in the case of a fatal outcome; the accident was clearly not due to negligence or want of proper knowledge and skill. In the second case, however, there might be a question as to the liability, owing to a failure to recognize the perforation and the infliction of fatal visceral injuries.

In the Berliner Klin. Wochenschrift, 1886, July 5th, p. 452, is related the experience of a young Berlin doctor who curetted for abortion and injected liquor ferri. The woman died; at autopsy four perforations were found. In spite of the expert testimony in his favor by Professor Gusserow, the doctor was condemned to two months' imprisonment.

Von Herff, commenting on this case shortly after, warns against being too hasty in condemning a brother physician in whose hands such an accident has occurred. He cites a case of his own where there was hemorrhage after abortion, and a large, soft uterus. Using the utmost care, and thinking of perforation, the sound suddenly slipped through the wall of the uterus. All manipulations stopped. No sequelæ. In a few days he was able to curette.

Landau was called to testify in two cases where the uterus had been perforated; once for an incomplete abortion, and once for gonorrheal endometritis. The patients died, but Landau testified that the doctors were not criminally negligent, as they exercised reasonable care, and they were acquitted.

In the case of Bacon and Herzog the accused doctor was acquitted, it being shown that there were present such extensive degenerative changes in the uterus that the perforation was not due to negligence.

Cassatt (quoted by Pichevin) tells of a case where the operator perforated the uterus and introduced his curette so far that he actually lost it in the peritoneal cavity. It was eventually recovered with long forceps.

Mechanism of Perforation.—The perforation is accomplished either with a probe, sounds, curette, douche point, dilators, sponge tent, or other instrument.

The probe makes a clean, smooth puncture, depending somewhat on the character of the uterus. No intestinal injury has ever been reported following its use.

The curette naturally makes a larger hole, either from being pushed through or a portion of the wall being scraped away (Zinke). The bowel has been injured by the curette.

Sounds, such as Hegar's dilators, may perforate like a probe, only making a larger opening.

The douche point has been pushed through the wall; the main danger depends, however, on the injection of poisonous solutions into the peritoneal cavity (Queisner, Brothers, Haynes, Schenk, Lanelongue, Flandrin, Bonvalot, Raffray).

The dilators are a source of danger. They are pushed through the anterior or posterior wall at the angle, and when the blades are separated a large hole is torn. Considerable force must usually be required, because even in atrophied uteri the cervix and supravaginal portion retain much of their normal toughness. This accident is avoidable if the axis of the uterus is determined beforehand. If this maneuver with the dilators is now followed up by grasping in the

dark with a placental forceps or a volsellum, there is no end to the amount of injury which might be inflicted to the bowel.

Result of Perforation.—This depends on whether or not there is

(a) Infection carried into peritoneal cavity.

(b) Fluids injected into peritoneal cavity, e. g., liquor ferri, lysol, sublimate, etc.

(c) Visceral injury, mainly the bowel, sometimes omentum.

(a) Infection.—Where all antiseptic precautions had been taken and the uterine cavity was fairly clean, the uterus has been perforated many times by sound, curette, or dilator. This was done by expert operators and the injury recognized at once. The accident has been followed generally by no ill effects, as there was no bowel injury. Kelly, in his "Operative Gynecology," states that he has perforated the uterus with sound six times with no ill effects following.

Elder curetted for abortion; dilated with Hegars dilators. On introducing curette it slipped in and could be felt under the abdominal wall. Uterus packed; no irrigation; recovery. In another case the curette slipped in and bowel presented. This was replaced; uterus packed; no irrigation; recovery.

Queisner, after curettage, perforated with the douche point. The instrument was felt under the abdominal wall. No fluids run into peritoneal cavity; packed uterus; recovery.

Zinke, while removing a submucous fibroid, made a perforation one-quarter of an inch in diameter. Uterus packed; recovery.

Liebman perforated the uterus in two cases with sound, with no sequela.

Alt, in two cases, felt the sound pass in until it was felt under the navel. Both recovered.

Brothers says he has perforated the uterus four times in nineteen years. In two cases of abortion the curette slipped into an unknown depth. Operation stopped; no irrigation; uterus packed. Slight pelvic inflammation, but eventually recovered. In a case of curettement for sterility, the same thing happened. Recovery and subsequent pregnancy. In the fourth case the curette perforated the posterior wall. Anterior vaginal incision made; fundus delivered; perforation sutured; salpingectomy. Recovery.

Theilhaber perforated two cases (an endometritis fungosa and an abortion) with no bad results.

Auvard had one perforation among two hundred and seventy curettements. The case recovered.

Chunn had two non-puerperal cases in which the sound slipped

in and was felt at umbilicus. One of the cases barely recovered from resulting peritonitis.

These cases illustrate that where the uterus is simply perforated, and no further injury is inflicted, there follows little, if any, reaction. Usually some infection is carried in and results in a slight local peritonitis. There is some local pain and a slight elevation of temperature. The symptoms usually abate under ordinary treatment.

In those cases where there has been insufficient preparation of the patient, or septic endometritis existed, perforation becomes a grave accident. The patients either die of septic peritonitis, or there is set up a violent local inflammation with abscess formation, from which they may ultimately recover after a long siege.

Kelly saw a case in consultation. Curettement post-abortum; the posterior wall of the anteflexed uterus was perforated at angulation by Goodell dilators. There was already a peritonitis. Operation refused until some days later. Death from sepsis.

Neale reports a case of abortion with retained placenta. Some infection already present. A senior student in attempting to remove the remnants with his finger tore a hole in the posterior wall of the uterus, which admitted three fingers. Patient went into collapse; drainage inserted into the cul de sac; patient finally recovered.

Mauclaire saw two cases following abortion where the curette had perforated. One was followed by collapse and peritonitis; abdominal hysterectomy; death. In another similar case the abdomen was opened, the uterus sutured; drainage; recovery.

Guérard relates a case where a woman supposedly pregnant had a sound passed to induce labor. The instrument was left in three days, during which time the woman was very sick and suffered extreme pain. Guérard removed the sound, excluded pregnancy, diagnosed ovarian cyst and opened abdomen. There was a tubercular peritonitis with ascites; a rent in the left side of the uterus was discovered and sutured. Patient recovered.

Kentmann, in a case which was afterward shown to have been one of myometritis edematosa, did an abdominal hysterectomy for perforation and the patient got well.

Jackson reported two cases of death following curettement. They were probably perforations, although there was no autopsy.

(b) Injection of Fluids.—Other complications of perforation are due to the injection of irritating fluids into the peritoneal cavity. Among these are sublimate, lysol, liquor ferri chloridi, tincture iodine, etc.

Brothers reports a case perforated by the curette followed by sublimate irrigation. Death soon after.

Haynes reports a case of perforation and use of bichloride, followed by collapse, peritonitis, sublimate poisoning, but final recovery.

Schency had a similar case where the douche point perforated and sublimate was run into the peritoneal cavity. Laparotomy—uterus sutured; sublimate poisoning; recovery.

I have already quoted the Berlin physician who injected liquor ferri, followed by death. Lanelongue had a perforation which was first noticed when the sublimate irrigation did not return. The patient developed mercurial poisoning and finally died of septic peritonitis.

Similar cases were published by Bonvalot (Thèse de Paris, 1892) and Raffray (Thèse de Paris, 1893).

Flandrin reports two cases of perforation by the douche point and filling of the abdominal cavity with fluid.

(c) Injury to Viscera.—The viscera involved are usually bowel or omentum. Küstner reports two interesting cases.

Case I.—Curettement two years before. Some accident said to have happened at the time, but patient did not know what, except that she had considerable hemorrhage and some pelvic peritonitis. Irregular hemorrhages have continued since that operation. Vaginal hysterectomy by Küstner. A band of omentum found adherent to fundus and was ligated. Recovery. This band of omentum could be traced through uterine wall and a small mass was in the uterine cavity. The solution is clear. At the curettage the fundus had been perforated and omentum prolapsed. From the immediate effects the woman recovered, but she had a persistent, irregular flow.

Case II.—A woman of fifty-three had been curetted some years before for leucorrhea and irregular bleeding. Küstner curetted again and in the scrapings fatty tissue was found. Küstner suspected that it was a case like the former and did a hysterectomy. The operation was difficult on account of adhesions. Examination showed a band of omentum passing through the wall of uterus, there also being a small mass in the cavity.

These cases are unique and illustrate the possibility of recovery after prolapse of omentum. A number of other cases are on record where after perforation the omentum prolapsed and the condition was recognized at once or afterward.

Hoffman was called in consultation where a colleague had curetted for incomplete abortion. There was a perforation and the omentum was visible. Laparotomy; uterus large and flabby. Hole in antero-

lateral aspect; free bleeding; sutured with silk after replacing omentum. Abdomen flushed and drained. Recovery. In the discussion (Phil. Obst. Soc., April 3, 1890) Dr. William Goodell related that he had a number of times perforated carcinomatous uteri with no bad results. Dr. Davis also related a case in which a curettement was done for retained placenta with death in two weeks. Autopsy showed a perforation.

Krusen reported a case of curettement for incomplete abortion. Omentum pulled down with forceps. Laparotomy a few hours later; omentum resected; sutured wound in fundus; recovery.

At a meeting of the Gynecological Society of Berlin, in 1894, the following cases were reported:

Veit: Digital removal of membranes and placenta after abortion; prolapse of intestine; vaginal hysterectomy; peritonitis; death.

Gusserow: Abortion; curettement; omentum pulled down; supravaginal hysterectomy; ligation of omentum; thrombosis of femoral artery and death from pulmonary embolism.

Orthmann: Abortion; curettement; intestine pulled down, perforated and separated from mesentery. Laparotomy, resection of gut; recovery.

Ohlshausen: Abortion; curettement; gut pulled down; resection of 30 cm. Death from peritonitis.

Martin: Abortion; curettement; 75 cm. of bowel pulled out and allowed to remain outside; collapse and death.

Perforations or bruising of the bowel are always of a very serious nature. Owing to this the cases found in the literature will be quoted in summary.

Boldt: Woman was curetted by a doctor for abortion. It was said he pulled down a "fatty substance" and tore a "white tube." The condition of patient was so good that Boldt doubted the story. Fifty hours later peritonitis developed; laparotomy; bowel torn and gangrenous, being separated from mesentery a distance of 14 cm. Death.

Gutbrod: Curettage for abortion; perforation of uterus and gut pulled down with forceps; reposition; packing; peritonitis developed, but ultimate recovery. Two months later intestinal obstruction from adhesions; laparotomy; recovery.

J. B. Harvie (quoted by Kelly) has personal knowledge of a case where a practitioner, after dilating, passed in a pair of forceps to catch the ovum and drew out and cut off six feet of bowel without realizing what he had done.

Alberti: Curettage for abortion; loop of gut pulled down. The

doctor packed and sent patient to hospital. Laparotomy by Alberti. Loop of bowel seen entering rent 3 cm. long on right side of thin, friable uterus. Wound sutured; bowel uninjured. Recovery.

Fleischman: A doctor tried to remove with placental forceps a retained placenta after abortion, but pulled out intestine. Laparotomy by Billroth; nine inches of gut resected and a perforation in the colon sutured. Recovery.

Noble: A competent physician curetted for abortion and pulled down a loop of gut. Noble operated and resected three feet of gut which was separated from its mesentery, using a Murphy button. One-half pint free blood in abdominal cavity. Uterus sutured. Recovery.

Mann, in a paper on the subject, reports some interesting cases.

I. While operating for abortion a perforation was made with sharp curette; gut pulled down and torn across. Mann saw case one hour and a half later. Laparotomy; six inches of ileum separated from mesentery close to cecum. Head of colon injured. Ileo-colostomy with Murphy button. Abdomen contained blood and feces. Sutured uterus and drained abdomen. Recovery.

II. A good surgeon dilated uterus to remove ovum in case of incomplete abortion. Pulled down intestine with placental forceps. Was not prepared for laparotomy, as this happened in country. Nevertheless abdomen opened, gut pulled back, uterus sutured. Death from peritonitis in two days.

III. A young doctor attending an abortion used dilators and placental forceps and pulled down gut. He kept on pulling until he had about six feet of it out, under the impression that it was the fetal intestine! (Pregnancy of three months.) He cut off the gut and sent for help. The patient died.

Mann himself once perforated the posterior wall of a sharply anteflexed uterus with Goodell's dilators. He was aware of what had happened; completed the curettement; omitted irrigation and packed. Recovery without untoward symptoms.

In a meeting of the Deutsche Gesellschaft für Gynaekologie at Würzburg in 1903, Boblanck reported a case in which during curettement for abortion a loop of intestine was pulled out with a volsellum forceps. Intestine was resected and recovery followed.

Van de Warker saw a case a considerable time after a curettement for abortion. There was a history of a membrane having been pulled out and roughly handled. At the operation the bowel was found torn across. Four inches excised and Murphy button introduced. Death.

Metro-Peritoneal Fistula.—Under this heading may be mentioned the case of Lawson Tait. It was a case of myoma uteri in which Tait perforated the anterior uterine wall while curetting on account of purulent discharge. Nothing was done and the woman recovered, but returned in nine months with recurrence of discharge. A vaginal hysterectomy was done, and at the base of a myomatous nodule the perforation of nine months previous was still patent. This Tait considers absolute proof of the existence of a permanent metro-peritoneal fistula.

Prevention of Perforation.—As already mentioned, there have been numbers of cases where perforation simply could not have been prevented on account of the friability of the uterine tissue. In general, however, the following principles should be observed:

1. Make an accurate pelvic diagnosis, as to size, position, mobility and consistency of the uterus. Determine the presence or absence of tumors upon or within the organ. Observe, if possible, its contractility. Determine the condition of the adnexae and the possibility of pus tubes, ovarian tumors, pelvic abscesses and the like. In other words, get as clear a picture as possible of the pelvic organs.

2. Dilators.—In curetting post-abortum, bear in mind the possible extreme friability of the uterus. The cervix should be amply dilated to admit the finger. The direction of the cervical canal and uterine cavity should be accurately determined by means of a graduated sound. The question of angulation backward or forward should be known before introducing dilators, especially Goodell's. Disregarding this has been the cause of most perforations made with Goodell dilators. Avoid the ratchet and screw, but use the hands in dilating carefully. Dilate slowly, so as not to split the cervix, meanwhile turning the instrument around in all points of the circle. Auvard calls Sims' dilator with three blades the "dilatateur-perforateur," and claims that when dilators with two or three blades are no longer used perforations of the uterus will disappear. Kelly cites a case where there was unrecognized genital tuberculosis, in which the cervix was split into the abdominal cavity by the use of dilators. Omentum prolapsed. The wound was repaired, the appendages removed, and the patient recovered.

3. Curettes and Placental Forceps.—Some operators advise the removal of placental remains with the fingers if possible. Dull and sharp curettes each have their advocates. A sharp curette is best in the hands of the experienced. (Kelly.)

Be careful in the use of the placental forceps for pulling down something which may be felt in the uterine cavity. It may be omentum or gut. Never use a volsellum forceps for this purpose.

4. Irrigation.—Except in the presence of septic endometritis, the use of the irrigator is generally considered superfluous. (Kelly.)

If it is used, a non-toxic solution, as boric acid, should be employed. Avoid strong solutions, such as sublimate. If there is the least suspicion of a perforation, omit all irrigation.

The injection of caustics, such as liq. ferri chloridi, tinct. iodine, chloride of zinc, is not without danger and should be used only where there are special indications. Application should be with a swab.

Treatment of Perforation.—1. When the accident occurs after antiseptic precautions and is done with a probe, and if there is no evidence of visceral prolapse or injury, then the treatment is largely expectant. All irrigation should be omitted and the uterus packed.

Perforation with a sharp curette is more liable to injure the intestine, but where the operator is immediately aware of the accident and the instrument promptly withdrawn, the treatment may be the same as above. Of course, there is always the chance of infecting the peritoneal cavity or of having injured the bowel. If the perforation is large, as shown by palpation or by the prolapse of omentum or gut, then it is not safe to tampon. The rent in the uterus should be sutured either by opening the abdomen or doing a colpotomy (Rosenfeld). Where there is an infective endometritis and the condition of patient will allow, then a vaginal hysterectomy had best be done (Kentmann, Guérard, Mauclaire).

In all cases where there is evidence that the bowel has been pulled down or otherwise roughly handled by curette, placental or volsellum forceps, the best plan is to open the abdomen and carefully examine the whole intestinal tract. The bowel may be found torn across or may be separated from its mesentery. This will require suture or resection. There may be active bleeding from torn mesenteric vessels. The large and small intestine should be inspected, as there may be several injuries.

The uterus is sutured with interrupted catgut. This is usually easily acomplished, but there have been cases where the wall was so soft that the sutures tore through. In such a case do a hysterectomy if possible.

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