

Minilaparotomy Technique for Ectopic Pregnancy for Family Medicine Obstetricians

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Abstract

Family Medicine physicians trained in obstetrics have become particularly invaluable in areas, such as rural communities, where a physician practicing solely obstetrics and gynecology is fiscally impractical. In such communities, often the general surgeons are reluctant to manage any pregnancy complication, including ectopic pregnancy, leaving the Family Physician trained in obstetrics the only physician capable of aiding such unstable patients. Ectopic pregnancy is a life-threatening obstetric emergency demanding accurate diagnosis and expedient treatment. Obstetrics fellowship programs in the United States have heretofore not taught surgical management of ectopic pregnancy. Obstetrics fellows can be taught a fairly simple minilaparotomy technique for surgical treatment of these emergencies. Physician credentialing is also discussed.

Obstetrics fellowship training for Family Medicine physicians who want to deliver babies continues to increase nationwide. Originally, Family Medicine residencies included Obstetrics as part of their curricula but also had obstetrics tracks for house staff who anticipated practicing obstetrics as part of their practice after residency training. After six months of obstetrics, an upper-level resident could apply for cesarean section privileges and become a junior obstetrics attending with staff OB/GYN backup. Because of decreased numbers of obstetrics patients in teaching programs, the current trend since 1985 has been to do a fellowship year of obstetrics if a family physician planned to practice obstetrics.

There are twenty-five recognized Obstetrics Fellowships in this country and an additional number of part-time training programs, none of which are accredited. Most programs teach routine obstetrics, instrumental delivery, cesarean section, tubal ligation, prenatal care, ultrasound, suction curettage, cryotherapy, cervical conization, and office gynecology. The real deficit in training programs universally is the inattention to instruction in surgical management of ectopic pregnancy. This paper de-

scribes a minilaparotomy technique for surgical management of ectopic pregnancy that is very similar to an open minilaparotomy bilateral tubal ligation. Family physicians routinely perform tubal ligations at the time of cesarean section, immediately postpartum by an infraumbilical incision and interval or postpartum tubal ligation by a minilaparotomy approach. The uterus and tubes are identified. The tubes are grasped and ligated by some means. Then the abdomen is closed.

The stability of the patient will determine the need for expedient management. A patient in shock from blood loss anemia will mandate immediate intervention, while a hemodynamically stable patient, not in much pain, will not. Medical management not described in this paper may even be an option, if the patient meets certain standard criteria. The availability of an operating room, staff, and anesthesia are also necessary. A Foley catheter must also be placed to drain the urinary bladder. It is left in place during the procedure and removed the day after surgery. General anesthesia is utilized not only for the urgency of the procedure but also because regional anesthesia can cause hypotension. Prophylactic antibiotics are given. If the patient is in shock and/or has a low hematocrit, begin transfusion preoperatively, if possible.

Make an incision no larger than necessary, accomplished by initially making the smallest possible incision, and later extending it, if necessary. The choice of incision is influenced by many factors including previous incision, body habitus, cosmetics, hemodynamic stability, and patient's weight and size. A minilaparotomy technique described by Rock and Jones is utilized.¹ A small five centimeter Pfannentiell ("Bikini") incision just above the symphysis with pubic hair clipped works well. When the pubic hair grows out, it will usually cover the healed scar. The skin is incised down to the dermis where electrocautery is then used to take the incision down to the fascia. The fascia is then divided horizontally and laterally with electrocautery or Mayo or Cooley scissors. The upper portion of the fascia is grasped

with two Oschner Clamps and dissected from the underlying rectus muscles by both blunt and sharp dissection. Bleeders are controlled with electrocautery. The lower portion of the fascia is also dissected down to the symphysis. The midline between the rectus muscles is identified and the posterior sheath divided. The peritoneal cavity is entered either sharply or bluntly. The incision is extended both upward and downward.

The pelvis is immediately explored and mobility of the uterus determined. A single figure-of-eight suture of dissolvable suture, usually 2-0 Vicryl®, is placed superficially in the fundus of the uterus to elevate it. Free blood and clots are removed with the use of a pool suction device, which minimizes trauma to delicate structures, such as the intestine. Adequate visualization is essential. Immediately clamp active bleeding sites with Kelly, Heaney-Ballentine, or Zeppellin Hysterectomy Clamps to stop bleeding. A moist, tagged laparotomy pack is placed behind the uterus to elevate it and expose the fallopian tubes. Additional packs may be used to pack the intestines out of the operative field. Any small self-retaining retractor, such as an O'Conner-O'Sullivan Retractor, may be used for visualization. Alternatively, hand-held retractors, such as Deavor, Richardson, or Herrington Retractors, may be used.

A tubal pregnancy looks like a bulge in the fallopian tube. It may be ruptured or unruptured. Above clamps are used to clamp beneath the tube in the mesosalpinx and the segment of involved tube excised. This is usually a larger segment of tube than that removed at tubal ligation. Dissolvable suture, such as Vicryl®, is used to suture the tissue below the clamps. Sutures are often transfixed and may require oversewing to control bleeding. Many techniques for surgical management of ectopic pregnancy have been described. While excision of the portion of tube containing the pregnancy is the simplest, a salpingostomy and excision of the pregnancy may not be much more technically challenging and arguably advantageous in preserving fertility of the remaining tube. Using a fine needle electrocautery, the antimesenteric border of the unruptured tube is incised, and the pregnancy carefully plucked out. Bleeding is controlled and the opened tube is left open to close by second intention. Copious irrigation and diligent hemostasis is important here. The risk of persistence of gestational tissue and recurrence of the ectopic pregnancy is increased with salpingostomy and excision. To reduce this risk, postoperative Methotrexate may be given.

At this point, ask the circulating nurse and the anesthetist to give an estimate of blood loss, based on the blood in the suction canister and soiled laparotomy packs. Irrigation of the pelvis is then performed to make sure that there is no active bleeding. Remove any clots present and, if there is no active bleeding, remove tagged laparotomy packs and self-retaining retractor. Make sure the surgical instrument and pack counts are correct. Do not remove the uterine fundus figure-of-eight stay suture but cut the suture above the knot. Cover the pelvic contents and intestine with omentum, if possible, and close the peritoneum with running dissolvable suture. Loosely approximate the rectus muscles with suture. Make sure the tissues are dry. Close the fascia with running Vicryl® or PDS suture. If there

is a lot of oozing or the panniculus adiposus is thick, place a drain above the fascia and suture it in place in the skin. Usually this is unnecessary. The skin can be closed with staples or subcuticular sutures.

If there has been a substantial blood loss, obtain a hematocrit in the recovery room. Otherwise, check a postoperative hematocrit in four hours. With massive bleeding, coagulation studies may also be necessary. Anticipate some oozing and decrease in hematocrit from intravenous fluid hemodilution. If the hematocrit drops precipitously or the patient develops signs of internal bleeding, transfuse and re-explore the abdomen in the operating room. Most patients can be discharged home within 48 hours.

A discussion of a new surgical technique would not be complete without a discussion of physician credentialing. Obstetrics Fellowship Programs have not taught surgical management of ectopic pregnancies until now. Whether during official training or afterwards, adequate numbers of proctored procedures are essential to obtain privileges in any hospital today. Privileges for cesarean section presume that a physician should be able to perform a laparotomy on the same patient earlier in pregnancy. A physician should be able to be credentialed to do both.

There are a few points worth reiterating. Make an incision no larger than necessary; it can always be extended. Evacuate blood and clots from the abdomen and pelvis so that visualization is optimal. Control active bleeding; it is better to achieve hemostasis now rather than later. Irrigate well before closing. Clots left in the abdominal cavity may be a focus for infection or adhesions and subsequent bowel obstruction. If there is any suspicion that trophoblastic tissue may be left inside, give the patient postoperative Methotrexate. Most patients will do well with this technique. The importance of a Family Physician trained in obstetrics to be able to manage ectopic pregnancies surgically cannot be overstated.

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Reference

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