Treatment of an Ectopic Pregnancy: An Ethical Reanalysis

Maureen L. Condic, PhD¹
and Donna Harrison, MD²

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Abstract

There is considerable lack of clarity on the medical facts surrounding management of ectopic pregnancy. In particular, it is not widely appreciated that by the time an ectopic pregnancy is diagnosed, in most cases, there is no viable fetus (i.e., the fetus has already died). Moreover, there is very little ethical guidance from the medical profession regarding the emotionally difficult decision to terminate a wanted pregnancy when the life of the mother is at risk. The best articulated positions on this topic come from religious groups, based on the principle of double effect. Yet the application of this reasoning to termination of an ectopic pregnancy is inconsistent with the medical facts in many cases. To resolve these inconsistencies, while still providing a robust ethical context for resolving such difficult situations, we propose clear guidelines for determining when a viable fetus is present in ectopic pregnancy and clarify the moral object in ectopic pregnancy management.

Summary: This paper explores the ethical framework for clinical decision making in the case of ectopic pregnancies. Focusing on the disordered union of mother and unborn child clarifies the object and purpose of the actions used to separate the mother and fetus in order to save the life of both, or at least one. Since over 90% of tubal ectopic pregnancies present as embryos who have already died, these cases present no ethical dilemma. This paper proposes a modification of currently used criteria for determining the viability of ectopic pregnancies and calls for further research.

Keywords

Pregnancy, Abortion, Double effect, Separation of mother and fetus, Parturition, Ectopic pregnancy

Introduction

There is broad consensus that killing an innocent human being is never a good thing. Indeed, this understanding is the basis of a large body of American and Western jurisprudence that holds intentional killing of another person to be permissible only under highly specific circumstances: (1) in cases of self-defense or defense of others, where no other means of deterring the assailant are effective, (2) in cases of just war, and (3) in cases where the legitimate authorities of the state enact legally permissible capital punishment. This strong prohibition against killing, particularly killing of the innocent, spans a wide range of ethical frameworks, both religious and secular. Legal abortion, physician-assisted suicide, and euthanasia are the notable exceptions to this general view.

There is nonetheless considerable confusion regarding the application of this general prohibition

against killing to the specific case of separating the mother and the fetus in cases where the life of the mother is at risk, irrespective of the views an individual holds on the contentious topic of abortion (Markens, Browner, and Mabel Preloran 2010). Adding to this confusion are two confounding factors: (1) the considerable political connotations of terms such as “termination of pregnancy” and “abortion,” which

¹ Department of Neurobiology and Anatomy, University of Utah, School of Medicine, Salt Lake City, UT, USA

² American Association of Pro-Life Obstetricians and Gynecologists, Eau Claire, MI, USA

Corresponding Author:

Maureen L. Condic, PhD, Department of Neurobiology and Anatomy, University of Utah, School of Medicine, 20 South 2030 East, Bldg. 570 BPRB, Salt Lake City, UT 84112, USA.
Email: mlcondic@neuro.utah.edu

to the nonmedical reader, are both equivalent to elective destruction of an embryo or fetus, and (2) equivocation over definitions and terminology, which use the same term abortion to denote both spontaneous and induced fetal loss. This article suggests a new terminology to describe the moral object of procedures intended to address a fatal condition of a pregnant woman: "separation of the mother and the fetus." The use of this terminology, which is clearly defined and unequivocal both inside and outside of the medical profession, provides the precision of language needed to attempt a discussion of the ethical issues surrounding the management of ectopic pregnancy. This article also provides a moral analysis of ectopic pregnancy management based on this new vocabulary.

Ectopic Pregnancy: Current Framework for Moral Analysis

Losing a desired pregnancy for any reason can create considerable emotional distress, regardless of the parents' views on abortion or religion (Cowchok et al. 2010; Davies et al. 2005; Mann et al. 2008). Parents who desire a child are very reluctant to harm or destroy a fetus, even when the mother's health or life is at risk. For those who face these difficult choices, and especially for those who view fetuses as human beings (as opposed to mere human tissue) or as human persons with intrinsic moral value, it is important to consider whether the separation of an unborn child from his or her mother before that unborn child is able to survive outside of his or her mother's womb can be justified to save the life of the mother and, if so, under what circumstances.

Surprisingly, despite the medical challenges presented by ectopic pregnancy and the emotional distress this condition entails, many professional medical associations have no explicit policy on cases where the life of the mother is in jeopardy, other than to assert the general right to legal abortion. Thus, many professional medical associations offer no guidance on this difficult topic, leaving the decision in the hands of individual parents and their physicians. And, as noted by Foran (1999), lack of clarity on the morality of existing procedures for management of ectopic pregnancy creates "serious problems of conscience for physicians, patients and hospital personnel" (p. 27).

In contrast, some religious groups, most notably the Catholic Church, have well-articulated ethical positions on the topic of intentional termination of a pregnancy to safeguard a mother's health. While maintaining that direct killing of an innocent child

is always wrong, the US Conference of Catholic Bishops (USCCB 2009) asserts that, "Operations, treatments, and medications that have as their direct purpose the cure of a proportionately serious pathological condition of a pregnant woman are permitted when they cannot be safely postponed until the unborn child is viable, even if they will result in the death of the unborn child" (dir. 47).

This position invokes the ethical principle of double effect, that originated with Aristotle, and was refined by Thomas Aquinas in the *Summa theologiae* (II-II, q. 64, a. 7). There is a large and well-articulated body of literature concerning the principle of double effect (Woodward 2001; Cavanaugh 2006; Boyle 1981, 1980). In general, this principle asserts that an action directed toward a good end (e.g., a medical intervention designed to save the life of the mother) can be licitly conducted, even when this action has an unavoidable secondary effect that is not good (e.g., the death of the fetus), if the following three criteria are met. First, the act itself must not be unethical. Second, the intention must be to achieve the good effect and not the bad effect. And finally, the good effect must outweigh or at least equal the bad effect in ethical gravity.

In the view of the National Catholic Bioethics Center (NCBC 2013), application of the principle of double effect to medical treatments that result in separation of the mother and her fetus before the fetus is capable of surviving outside the womb requires the following:

1. Treatment is directly therapeutic in response to a serious pathology of the mother or child.
2. The good effect of curing the disease is intended and the bad effect foreseen but unintended.
3. The death of the child is not the means by which the good effect is achieved.
4. The good of curing the disease is proportionate to the risk of the bad effect.

We would note that a central requirement of the principle of double effect is point number three above, that is, that the bad effect (in this case, the death of the child), cannot be the means by which the good effect is achieved, which would place the bad effect under the agent's overall intention.

Ectopic Pregnancy: A Comparison to Uterine Cancer

Terminating a pregnancy in the case of uterine cancer is often contrasted to the case of an ectopic

pregnancy, and the contrast between these two situations illustrates a number of disturbing inconsistencies in the current ethical framework.

Under the rule of double effect, removing a cancerous uterus of a pregnant woman is considered warranted because the intention is to cure the cancer, and not kill the baby, despite this consequence being foreseen. In this case, “The woman’s health benefits directly *from the surgery*, because of the removal of the cancerous organ,” and “there is nothing intrinsically wrong with surgery to remove a malfunctioning organ. It is morally justified when the continued presence of the organ causes problems for the rest of the body” (USCCB 2010).

However, it is important to note that in this situation, the uterus is not removed because it is “malfunctioning.” Indeed, given that the primary function of the uterus is to gestate a fetus, a *malfunctioning* uterus would result in spontaneous miscarriage. Rather, the uterus is removed because it harbors cancerous cells. Cancer ultimately proves fatal only when the physical growth or biochemical products of the cancerous tumor compromise a vital organ or vital physiologic process. Removal of a cancerous uterus prevents the spread of these potentially fatal cells to new locations in the body. Thus, based on the position of the USCCB, removal of an otherwise *functional* uterus that harbors both a living fetus and cancerous cells is warranted to protect the life of the mother. However, in the face of chemotherapy agents and radiation therapy that have proven successful in the treatment of gynecological cancers in pregnant women without harming the fetus, this reasoning is further weakened (Amant et al. 2015).

In contrast to the case of uterine cancer, the USCCB (2009) clearly states, “In the case of extrauterine pregnancy, no intervention is morally licit which constitutes a direct abortion,” with a direct abortion being, “Every procedure whose sole immediate effect is the termination of pregnancy before viability” (dirs. 48, 45). The USCCB seems to be condemning any act made upon a previsible fetus directly in which fetal death is the expected outcome, even if, miraculously, death does not follow.

The difficulty with this definition of “direct abortion” is that it is not a medical definition, and operationally does not distinguish between the separation of the mother and the fetus in order to kill the fetus, and the separation of the mother and the fetus in order to save the mother’s life. Importantly, as defined by the USCCB, if direct abortion requires the “sole immediate effect” to be the termination of pregnancy, then inherent in the term “direct” is the assumption that any separation is by definition

designed with the primary intent of killing the fetus. Thus, the definition itself implicitly assumes the malice that it condemns.

Thus, addressing even a life-threatening ectopic pregnancy by surgically opening the fallopian tube and separating the fetus from the mother (salpingostomy) is illicit because such a surgery would constitute a direct attack on the fetus (Anderson et al. 2011). In contrast, if the entire fallopian tube is removed (salpingectomy), this is seen as morally licit under the principle of double effect because, “the intention of the surgeon is directed towards the good effect (removing the damaged tissue to save the mother’s life) while only tolerating the bad effect (death of the ectopic child). *Importantly, the surgeon is choosing to act on the tube (a part of the mother’s body) rather than directly on the child*” (Pacholczyk 2009, emphasis added).

This argument asserts that because the presence of a fetus in the fallopian tube results in a pathological state of that tissue, removal of the pathological tissue is licit, despite the inevitable death of the fetus. However, it would be nonsensical to consider treating this condition by removal of the pathological segment of the fallopian *without* removal of the fetus (e.g., by carefully dissecting away the regions of the tube that have begun to malfunction and covering the fetus with “fresh” fallopian tissue). This would be absurd precisely because it would allow the underlying *cause* of the pathology to persist, which is the fact that the union of the mother and fetus should not take place in the tube. It is the union (the presence of the fetus implanted in an organ that cannot sustain fetal life) that is pathological. In fact, in many cases, the presence of the fetus in the fallopian tube is a result of the use of progestin contraceptives affecting the function of the normal tube. Women on continuous progestin-only contraceptives (except depo-provera users; Borgatta et al. 2002) are at increased risk of ectopic pregnancy (Fylstra 2012). With levonorgestrel implants (Norplant), the risk is five times as high for ectopic pregnancy (Furlong 2002). In these cases, there is no persistent underlying pathology in the fallopian tube but rather the response of a normal fallopian tube to a state induced by progestin. With the current argument, then, a fallopian tube that is functioning normally would be removed, and thus, the woman’s fertility would be permanently damaged.

The current reasoning requires that in administering an operation, treatment, or medication, it must have the direct purpose of alleviating a serious pathological condition in the mother. However, in the case of ectopic pregnancy, that pathological

condition is the disordered physical union between the mother and her fetus. It is the continuation of the disordered union that gravely threatens the life of the mother. The separation of the mother from her embryo or fetus is indeed “the means by which” the pathology is *actually* addressed. The death of the fetus is an indirect result of the separation.

This disordered union remains disordered regardless of whether or not the fetus is alive. So, the death of the fetus does not undo the disorder. The dead fetal corpse must also be removed from the mother’s fallopian tube in most cases for the same reason a live fetus must be removed, that is, to eliminate the disordered union that is the cause of the pathology in the mother.

It is also not necessarily true that permanent pathology in the fallopian tube itself induced the disordered union. While known risk factors for ectopic pregnancy include previous tubal damage from infection or scarring, there are other temporary and transient risk factors that cause ectopic pregnancy, including the use of Intra Uterine Devices (IUDs) and progestins in hormonal contraceptives (Li et al. 2015).

The fact that a normal fallopian tube can be altered by progestins to allow for ectopic implantation presents a problem for the ethical analysis which states that a diseased state must exist in the organ, necessitating surgical removal of the organ, despite the fetus dying as the unintentional “double effect.” In the case of progesterone contraceptive use, the tube is not abnormal, and to remove the tube or portion of the tube in order to treat the ectopic pregnancy results in the added effect of permanently decreasing or eliminating the woman’s future fertility. In cases of abdominal pregnancies, or ovarian pregnancies, control of hemorrhage may or may not require removal of the organ on which the fetus implanted, and most frequently, the fetus is removed and the placenta left to resorb on its own (Ayinde et al. 2005; Huang et al. 2014). The idea of removing normally functioning organs because they harbor an implantation site of an ectopic pregnancy does not make those organs “diseased,” calling into question the basis of the current ethical framework.

Thus, in effecting the separation of the mother and the fetus, the least damaging means of performing the separation is the best option, out of respect for the fetal corpse and out of a desire to preserve the future fertility of the mother by protecting the function of her fallopian tube.

Ectopic Pregnancy: A New Framework for Moral Analysis

The difficulty in applying the principle of double effect in the case of ectopic pregnancy, or any other

condition in which the continued physical union of a mother and her fetus immediately threatens the mother’s physical life, comes from two sources: from the definition of the moral object of treatment as “a direct attack on the fetus” and from significant confusion regarding the medical facts pertaining to ectopic pregnancy.

This article posits that defining the separation of the ectopic fetus from the mother as a direct attack on the fetus is inaccurate and precludes any serious moral analysis by assuming *a priori* that the intent of the separation of the mother and her ectopic fetus is to produce a dead fetus, an assumption that axiomatically makes the action immoral. If, however, the object of the action is the separation of the mother and the fetus, then using the framework presented below, a moral analysis based on the principle of double effect can be coherently applied to situations in which the separation of the mother and the fetus is necessary to save the life of the mother.

All pregnancies eventually end. In almost all circumstances, the ending of a pregnancy involves the separation of the mother and the fetus. The only exception to this is the case where both a mother and her fetus die prior to separation. The vocation of the obstetrician is to affect a separation of the mother and the fetus that offers the optimum conditions for life for both the mother and her fetus or newborn.

The morality of separating the mother and her fetus can be evaluated based on three components of moral action: (a) the action itself (i.e., the “moral object”), (b) the intention of the actor, and (c) the circumstances under which the action occurs. These three components are well articulated in a number of traditions, most clearly in the work of Aristotle (e.g., the *Nicomachean Ethics*), Aquinas (*Summa theologiae* I-II, q. 18), and in Catholic (*Catechism* 1993) and Buddhist (Bretfeld and Zander 2016) teaching. They also form the basis for legal determination of guilt in the Western legal tradition, with the legitimacy of the act itself (*actus reus*) being determined by statute, while both the intention of the actor (*mens rea*) and the extenuating circumstances surrounding the event being important considerations in both determination of guilt and in severity of sentencing.

The Moral Object

We propose that the proper moral object in question (i.e., the immediate objective or action taken for medical management of ectopic pregnancy) is *the act of separating the mother and the embryo or fetus*.

This act is neither intrinsically morally good nor intrinsically morally evil, and interpreting its moral character depends critically on the context in which it occurs. For example, the act of separation of the mother and the fetus is obviously good in the situation of childbirth, where separation occurs at the natural end of the intrauterine development of the fetus, who is now fully prepared for extrauterine life. Separation at childbirth is a good act, even in cases where the health of the mother and fetus requires that separation to occur through the act of a surgeon performing a Cesarean section (C-section). In contrast, the act of separation of the mother and the fetus as part of a violent assault on the mother is obviously immoral. In both of these cases, it is not the “*act of separation*,” but rather the intention with which that act is carried out and the circumstances under which it occurs, that determines the goodness or evil of the moral object of separation of the mother and the fetus.

Intention

A medical practitioner has a number of possible intentions when performing the act of separation of the mother and the fetus:

- a. To separate in order to bring about life for the mother and the fetus. This intention is always morally licit.
- b. To separate in order to ensure a dead fetus or to address the medical condition of the mother by means of actively killing the fetus. This appears to be at least one of the meanings of the phrase direct abortion, as used by the USCCB (although procedures taken against the fetus where fetal death is the likely outcome would also be condemned, even if the fetus survives). The difference between direct abortion and medically necessary separation of the mother and fetus is one of the most misunderstood and abused principles in the entire discussion surrounding pregnancy and its outcome. The goal of separation of mother and fetus can be many things, while the goal of direct abortion is to produce a dead embryo or fetus. For example, Giubilini and Minerva (2013) have argued that infanticide should be legally permitted in all circumstances that abortion is permitted, since both have the same effect, that is, death of the fetus. For those who view the fetus as a human person, this intention is always morally illicit.
- c. To separate in order to promote the health, mental well-being, or economic prosperity of the mother. The morality of this intention depends on the circumstances under which the separation takes place, most importantly on the extent to which the health and life of the fetus are affected by the separation (see below).

Circumstances

There are a number of important questions of fact pertinent to the moral evaluation of the circumstances surrounding the act of separation:

- a. *Is the fetus alive?* If the fetus is dead, then it is a morally good act to separate the mother and the fetus because the continuation of the state of physical union of a mother and a dead fetus poses an immediate threat to the physical life of the mother, through infection and the development of a situation called “disseminated intravascular coagulation”, which causes a mother to bleed to death internally. Separating the mother and fetus in this situation involves no moral controversy.
- b. *Does the continuation of the state of physical union between the mother and the living fetus pose an immediate threat to the physical life of the fetus, according to the best medical judgment?* This situation most often pertains under conditions such as Rh or other blood group incompatibility, where the mother makes antibodies that result in the destruction of fetal blood cells, causing fetal death. The optimal obstetrical management of these fetuses involves in utero transfusions to sustain the fetus to the point of maturity that will allow survival after separation from the mother. The fetus is then separated as soon as maturity can be reasonably ensured.

This situation also pertains to emergency situations such as placental abruption, cord prolapse, and fetal distress. Effecting separation of the fetus and the mother by emergency C-section is the fastest means of separation, in order to save the life of the fetus.

Ethical controversy exists in cases where the life of the fetus is immediately threatened and the mother refuses C-section. In cases where the risks to the mother are

disproportionately low compared to the risks to the fetus and the mother refuses surgery, the moral issue becomes whether or not it is acceptable to legally compel a mother to undergo C-section surgery against her will.

- c. *Does the continuation of the state of physical union between the mother and the living fetus pose an immediate threat to the physical life of the mother, according to the best medical judgment?* This question arises in situations such as severe pre-eclampsia, chorioamnionitis (infection of the fetal membranes), and ectopic pregnancy, all of which pose an immediate risk of death to the mother if the physical union of the mother and the fetus continues.

Evaluating the morality of separation of the mother and the fetus under these grave circumstances requires consideration of whether or not the fetus is in a state of maturity which would, by best medical judgment, allow for the fetus to survive after physical separation from the mother's body.

3.c.1: If, by best medical judgment, the fetus is able to survive after separation from the mother's body, then the act of separation is morally good because separation involves the intent to save the life of both the mother and the fetus.

Continuing the state of physical union between the mother and the fetus, when the mother's life is truly at risk of death and the fetus is able to survive is an evil act, because the death of the mother will put the fetus in grave risk of death as well, unless separation is carried out near the moment of death of the mother. Thus, the result of this inaction on the part of the practitioner will be one death (the mother), and very likely two deaths (both the mother and the fetus). This situation involves professional (prudential) judgment on the part of the medical practitioner regarding the risks to the fetus and the mother, but no fundamental moral controversy.

3.c.2: If the fetus alive and, by best medical judgment, will not survive after separation from the mother's body, this situation is addressed by the principle of double effect outlined above.

A full analysis of the issue of separating the mother and fetus in cases where the fetus cannot survive separation and the mother will die unless the separation occurs is beyond the scope of this article. However, it is the opinion of the authors that in *all*

such cases, the intention of the physician is to address the pathological state of the mother, not to kill the fetus. Thus, the death of the child is *never* the means by which the good effect is achieved, and the third condition of the moral framework proposed by the USCCB is *always* met. This is clearly illustrated in considering the case of life-threatening pre-eclampsia that is diagnosed either prior to or after the point of fetal viability. In both cases, the pathology of the mother is addressed by separation of the mother and the fetus. Yet prior to viability, the unintended effect is the death of the child and following viability, the child survives. Manifestly, therefore, death of the fetus *cannot* be "the means by which the good effect is achieved."

Ectopic Pregnancy: Medical Considerations

Ectopic pregnancy is the state where an embryo has implanted in a place other than the endometrial (uterine) cavity. Locations of implantation can vary. In rare cases, full-term, healthy infants have been delivered after implanting in their mother's ovary (Huang et al. 2011; Sehgal et al. 2005), abdomen (Badria et al. 2003; Dahab et al. 2011; Isah et al. 2008; Xiao et al. 2005; Zhang, Li, and Sheng 2008), or liver (Shukla et al. 1985). However, by far the most common site of implantation is the fallopian tube. In a review of 1,679 ectopic pregnancies (Bouyer et al. 2002), the fallopian tube was the site of implantation in 95.5 percent of the cases of ectopic pregnancy, with the next most common sites being the ovary (3.2 percent) and various locations within the abdomen (1.3 percent). Within the fallopian tube itself, the most common location was ampullary (70.0 percent), isthmic (12.0 percent), fimbria (11.1 percent), and interstitial (corneal; 2.4 percent). The next most common sites for ectopic pregnancies are the uterine cornua, C-section incision sites, and the cervix (Chukus et al. 2015).

While ruptured ectopic pregnancy accounts for 3–4 percent of all mothers who die while pregnant, it is the leading cause of maternal death in the first twelve weeks of pregnancy in the United States (Centers for Disease Control 2012). Delay in treatment of a diagnosed ectopic pregnancy is thus fraught with the very real danger of death to the mother. Balancing the timing of surgical intervention with the likelihood of tubal rupture is a matter of clinical judgment.

Tubal Rupture

In a recent review of 231 ectopic pregnancy cases (Frates et al. 2014), neither sonographic findings nor

human Chorionic Gonadotropin (hCG) levels were useful predictors of tubal rupture. In other words, there is currently no reliable marker that will predict when the ectopic pregnancy tissue will result in rupturing the mother's tubes, with resultant life-threatening hemorrhage. In this study, 25 percent of the women who underwent surgery within twenty-four hours of the ultrasound scan had tubal rupture discovered at the time of surgery and were therefore in an immediately life-threatening situation. In order to avoid subjecting women to catastrophic hemorrhage, the treatment of choice when encountering an ectopic pregnancy in a clinical setting has been surgery to remove the fetus and placenta plus or minus the part or whole of the organ to which the placenta is attached.

Determination and Management of Ectopic Pregnancies with No Viable Fetus

As noted above, choices regarding the management of ectopic pregnancy depend on the status of the fetus. A recent study considered the status of the fetus in tubal (ectopic) pregnancy at the time of diagnosis (Frates et al. 2014). Based on the analysis of 231 ectopic pregnancies, the study found that an embryo with cardiac activity was found only 7.4 percent of the time. In 92.4 percent of the cases of ectopic pregnancy, there was no clear living embryo present at the time of diagnostic ultrasound. Similarly, Pivarunas (2003) argues most ectopic pregnancies to not involve a living embryo/fetus, and therefore, "If embryonic death is present, then any treatment modality can be used. Kaczor (2009) also notes that "in the vast majority of actual cases in which MXT is medically indicated, the death of the embryo has indeed already occurred."

In many cases of ectopic pregnancy, expectant management or administration of systemic methotrexate are sufficient treatments (Demirdag et al. 2017). The concept of allowing some time to pass between the diagnosis of ectopic pregnancy and surgical intervention is an acceptable management technique for those pregnancies that clearly do not involve a living fetus (Elson et al. 2004), the benefit being avoidance of unnecessary surgery. Moreover, these ectopic pregnancies involve no moral dilemma. If no living embryo or fetus is present at the site of ectopic implantation, then removal of the ectopic pregnancy with or without removing the organ to which the placenta has attached constitutes the moral equivalent of the removal of the deceased remains of the fetal corpse. In these cases, there is good moral reason to perform the surgery most

capable of salvaging the mother's future fertility. However, there is currently no accepted procedure for management of cases in which it is not clear whether a living fetus is present. The major limitation in such cases is that there are currently no accepted criteria for diagnosis of fetal demise in ectopic pregnancy.

Proposal for Diagnosis of Fetal Demise in Ectopic Pregnancies

While it is unlikely that medical criteria could be defined that would provide *absolute* certitude of fetal demise, it is possible to establish *prudential* (or moral) certitude.¹ In the case of intrauterine pregnancies, there are clear criteria that establish prudential certitude for diagnosis of fetal death (Doubilet et al. 2013):

- crown-rump length of greater than seven millimeter and no heartbeat
- mean sac diameter of greater than or equal to twenty-five millimeter and no embryo
- absence of embryo with a heartbeat greater than or equal to two weeks after a scan that showed a gestational sac without a yolk sac
- absence of an embryo with a heartbeat greater than or equal to eleven days after a scan that showed a gestational sac with a yolk sac.

Applying these criteria to evaluation of ectopic pregnancies would help to make decision-making easier for both the parents and the clinician. We propose that the above four criteria with the addition of one more (below) could be used to diagnose ectopic embryonic demise with prudential certitude:

- (For ectopic pregnancy) Presence of a complex adnexal mass without a gestational sac.

We also call for further research using these criteria (e.g., correlation of diagnosis with a postsurgery pathology report) to determine whether they accurately diagnose fetal demise in cases of ectopic pregnancy. Importantly, a clear diagnosis of fetal demise eliminates the moral dilemma inherent in situations in which the continued presence of the living fetus threatens to kill the mother and fetus. And it is likely that clear fetal demise would be diagnosed in the majority of cases of ectopic pregnancy, perhaps in 90 percent or more, based on the sonographic findings at the time of diagnosis.

Management of the Minority of Ectopic Pregnancies with a Living Fetus

The above criteria were designed for evaluation of intrauterine pregnancy with the goal of prudential or moral certainty of no living embryo or fetus before intervening with curettage for miscarriage. The purpose of these criteria is to enable the clinician to avoid ending the life of an early human being with the mistaken diagnosis of miscarriage. However, the natural history of living intrauterine pregnancies is to proceed to live birth. The natural history of ectopic pregnancies is not so good. Tubal pregnancies are not thought to be capable of proceeding to live birth. Ovarian pregnancies and abdominal pregnancies can rarely survive to fetal viability, but their more common presentation is as an acute abdomen with intraabdominal hemorrhage. A ten-year review of ovarian pregnancies (Goyal et al. 2014) revealed thirteen (93 percent) presenting in the first trimester as an acute abdomen, and one (7 percent) presenting at term as a breech presentation. Abdominal pregnancies are rare but worldwide, a few have been reported progressing to fetal viability with the outcome of live birth (Huang et al. 2014).

This then is the moral dilemma in the less than 10 percent of ectopic pregnancies associated with a living fetus: both treatment and nonintervention of ectopic pregnancy result in unintended but unavoidable consequences for both the mother and the fetus. Inaction when action is called for to save the mother's life also carries moral culpability. Whether the clinician removes the fetus and placenta, removes the attached organ with the fetus and placenta, watches and waits until hemorrhage and tubal rupture occurs, or waits until both the mother and the fetus die, all of these treatment options have real consequences for life or death of the mother and for her future ability to bear children. Any treatment option that involves delay in removal of the ectopic pregnancy in the case of a living embryo should have a reason proportionate to the risk to the mother's life. If, as in the case of a tubal location of an ectopic pregnancy, there is no hope of fetal survival, and a very real and immediate risk of maternal death (see Circumstances 3.c.2), consistent with the existing ethical framework discussed above, the principle of double effect should apply to the separation of the mother and her fetus.

However, an important modification of the existing ethical framework afforded by the current analysis is that the means of curing the mother is *always* the separation of the mother and fetus, and

never the direct killing of the fetus. Thus, so long as separation does not involve direct killing of the fetus (see below), separation should be performed in the manner that best preserves the health and fertility of the mother.

“Direct Killing” versus Allowing to Die

An important distinction in the medical management of ectopic pregnancy is the difference between actions that directly cause the death of the fetus (dismemberment, decapitation, methotrexate injection, etc.) and actions that allow the fetus to die (induction of premature labor or other means of removing the fetus from the body of the mother at a developmental stage when it is not able to survive independently). This distinction is based on the commonly accepted view that good cannot be accomplished by evil means, and therefore, if an action is objectively wrong (e.g., direct killing of the fetus), it cannot be permitted under any circumstances.

Although circumstances of a life-threatening medical complication of pregnancy may require a “fatal outcome” for the fetus, the distinction between actions that directly terminate the life of the fetus and those that indirectly result in the death of the fetus is both significant and nuanced. A simple example may help clarify this difficult distinction: Is there a moral difference between strangulation (direct killing by depriving the victim of oxygen) and salpingectomy (which results in the killing of the fetus by depriving it of oxygen)? Prior ethical analysis of this situation (Anderson et al. 2011) would suggest that strangulation is a direct killing whereas, salpingectomy is allowing a fetus to die, after taking a direct action against a malfunctioning portion of the mother's body.

Yet, based on this distinction, would “indirectly” depriving an adult of oxygen in a manner similar to salpingectomy, for example, by sealing off a room to prevent air circulation, be seen as simply allowing him or her to die, rather than a direct act of killing? Under the principle of double effect, the interpretation of this example turns entirely on the intentions behind the action. If sealing off the room met the criteria of double effect outlined above (e.g., if the room was sealed to prevent the escape of a toxic gas that would kill everyone in the building), it would not be a direct act of killing. In contrast, if the intention were to kill the adult by sealing the room, it would be a direct action against that person. In contrast, strangulation is always a direct killing because

there can be no purpose intended other than the death of the victim.

Thus, while the distinction between direct killing and allowing to die can be subtle, it is an important distinction to avoid viewing killing simply as a convenient means of achieving a positive outcome for the mother.

Summary

In summary, determining the morality of separating a mother and her fetus involves a detailed evaluation of the three components of moral action: (a) object, (b) intention, and (c) circumstance. In this analysis, we propose:

- a. The moral object is the act of separation of the mother and her fetus, an act that is neither intrinsically good nor intrinsically evil.
- b. The intention of separating the mother and fetus is to produce the death of the fetus (i.e., direct abortion), to produce life for the mother and her fetus, or to improve the health, well-being, or prosperity of the mother. The morality of these intentions depends both on the circumstances under which the separation occurs and the view of the moral value or personhood of the fetus.
- c. The medical circumstances under which the separation of mother and fetus takes place, including whether or not the fetus is alive, the outcome for both fetus and mother if the physical union of the two persists, and the outcome for both the mother and the fetus following separation, are a critical component of the moral consideration.

In the vast majority of cases of ectopic pregnancy, there is no living fetus or embryo at the time of diagnosis. Therefore, after determination of fetal death by the rigorous medical criteria proposed here, removal of the fetal corpse is entirely warranted and morally uncompromised.

In cases where the status of the fetus is ambiguous, we propose further research using clear criteria for arriving at a sound medical judgment and call for more detailed medical evidence on the poorly researched subject of embryo viability in ectopic implantation sites.

In a minority of cases where the embryo is clearly alive (detection of a heartbeat), or the ambiguity regarding the status of the embryo cannot be resolved, the current reasoning under the rule of

double effect applies with an important modification. The current guidelines that recommend the removal of the mother's fallopian tube in order to avoid a "direct attack on the fetus" are fundamentally flawed. The flaws in the current reasoning result from (1) a failure to understand that the true pathology is a disordered union between the mother and the fetus, (2) a misidentification of the moral object as death of the fetus (i.e., direct abortion) rather than the separation of the mother and the fetus, and (3) a mischaracterization of the intent of separating the mother and the fetus as a direct attack on the fetus rather than an attempt to address the pathological condition of the mother.

This article respectfully calls for a reappraisal of the current moral analysis of ectopic pregnancy treatment and a clarification of the true moral object in cases involving the separation of the mother and her living fetus. So long as this separation does not involve direct killing of the fetus, separation should be performed in the manner that best preserves the health and fertility of the mother.

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Note

1. For a discussion of the concept of prudential certitude, see Aquinas, *Summa theologiae*, I-II, q. 96, a. 1, ad 3; II-II, q. 47, a. 9, ad 2.

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Biographical Notes

Maureen L. Condic, PhD, is an associate professor of neurobiology and anatomy at the University of Utah, School of Medicine, with an adjunct appointment in the Department of Pediatrics. Her current research involves the control of human stem-cell potency and differentiation. In addition to her scientific research, she teaches both graduate and medical students. Her teaching focuses primarily on embryonic development, and she is the director for human embryology in the University of Utah, School of Medicine's curriculum.

Donna Harrison, MD, is a board-certified obstetrician and gynecologist and executive director of the American Association of Pro-life Obstetricians and Gynecologists. She has lectured extensively as a continuing medical education speaker in the United States and internationally on topics of medical abortion with Mifepristone and Misoprostol, adverse events associated with Mifepristone and Misoprostol, emergency contraception with Ulipristal, maternal mortality and the association with abortion, and postabortion short- and long-term complications. She is an adjunct professor at Trinity International University in Deerfield, IL, USA.