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PRACTICE GUIDELINE

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Ectopic Pregnancy

AAPLOG is frequently asked about ectopic pregnancy treatments, since these are medical and surgical treatments to end pregnancies. Are these like abortions? This document proposes an ethical discussion of ectopic pregnancy from the same scientific grounds as those which lead to opposition to abortion.

Background

Ectopic pregnancy is defined as any pregnancy outside of the endometrial cavity, and represents about 2% of pregnancies.[1] Historically, ectopic pregnancy was the most common cause of death in the first trimester, because ectopic pregnancies of any type can rupture as they expand and lead to hemoperitoneum, and death.[2] Preventing death in the maternal patient requires that the embryo either spontaneously or artificially die or be removed.

Treatments of ectopic pregnancy have provoked ethical analysis among those who view the embryo has a distinct human person, since these treatments preserve one life and lead to the end of another. Ethical discussion of ectopic pregnancy typically focuses on the principle of double effect.[3] There is a notable difference in the ethical literature and the public opinion surrounding interventions causing embryo death in ectopics, and the literature and opinion on interventions causing embryo death in intrauterine pregnancies (IUP).[3-7] There are rare opponents to intervention in ectopic pregnancy, but their small minority opposition is not as mainstream as the opposition to abortion of intrauterine pregnancy has ever been. Put another way: there are no supreme court decisions about ectopic pregnancies, and most physicians accept the need to treat them.

Language

There is a disturbing disparity in the language used to discuss ectopic embryos. They are often referred to as “not viable.” While “viable” is subject to frequent equivocation, it most often refers to survivability outside pregnancy. “Nonviable”

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can mean “pre-viable,” or “before the age of viability,” it can mean a fetus of any gestational age with a life-limiting condition, or it can mean a fetus which will inevitably die given the current situation, such as a 14 week fetus half-delivered through the cervix, or an embryo in an ectopic pregnancy. The authors have collectively heard each of these unspoken definitions.

It is true that ectopic embryos are completely unable to survive a pregnancy at this time in history. But “inevitably going to die” is not the same is “not alive now,” and we should not dismiss all moral discussion about them as a result of their inability to survive their current situation.

AAPLOG does not believe there is *zero* moral discussion to be had, but is still comfortable with protecting the lives of mothers in the setting of ectopic pregnancy, and believes this is consistent with its positions against termination of intrauterine pregnancy by direct action on the body of fetuses.

The Principle of Double Effect

A person who views the embryo as an individual organism and who believes that its bodily integrity should be respected, may have significant questions about taking actions that end in the death of an embryo. An ethical principle called the principle of double effect can illuminate the difference. The principle of double effect is a way of judging the acceptability of acts with good and bad effects. For an act with a bad effect to be morally acceptable, it must conform to the four criteria laid out in Box 1.

Surgical intervention in the case of ectopic pregnancy meets the criteria laid out in the principle of double effect. First, the act of removing a fallopian tube or opening a fallopian tube is morally neutral. This is so because these actions can be undertaken outside of pregnancies for good purposes. In fact, if there ever is to be a way of “rescuing” ectopic pregnancies, this may necessarily be a step in the process. Second, the good effect (i.e. preserving the mother’s life from serious morbidity such as hemorrhage, need for transfusion or open and more invasive surgery, intensive care, and death) can be the only effect intended. Third, since the removal of the fallopian tube in salpingectomy precedes the death of the fetus (or the resection of the fetus in salpingostomy), the death of the fetus is not the means by which the mother’s life is preserved. Importantly, it is necessary to avoid embryonic dismemberment when resecting products of conception in salpingostomy. Fourth, the preservation of the mother’s life is proportionate to the expected but undesired bad effect, the end of the fetus’ life.

There is an important and legitimate debate among well-meaning pro-life physicians on whether methotrexate meets these criteria. In fact, there is still discussion about whether methotrexate *needs* to meet these criteria. On one hand, methotrexate is a non-surgical intervention, far superior in the eyes of a treating surgeon to even a minimally invasive procedure. In addition, methotrexate is generally well tolerated and in the case of significant multi-dose regimens, effects can be monitored by simple laboratory tests (a complete blood count and a comprehensive metabolic panel). It is well demonstrated to be safe for women and effective at resolving the majority of tubal ectopic pregnancies. Methotrexate has also been studied in other types of ectopics as well. Best of all, it is the best treatment for preservation of maternal fertility, with the lowest rates of scarring and recurrent ectopic pregnancy after resolution of the index ectopic pregnancy.

On the other hand, methotrexate seems to obtain these good outcomes *by means of* affecting the body of the embryo. The trophoblast is part of the embryo; it is not a shared organ.[8] The trophoblast interacts with maternal decidua, but the decidua does not contribute to the trophoblast. The embryo generates the trophoblast in its entirety and the embryo is physically continuous with it. Moreover, the trophoblast is in fact the embryo's most important vital organ. In fact, embryos can survive near-impossible conditions if their trophoblasts/placentas are functional. Methotrexate acts directly on the trophoblast, inhibiting its cell division (its main action) and inducing apoptosis.[8] Since methotrexate directly acts to harm an organ of the fetus in order to bring about the end of the pregnancy and the good effects for the mother, there is question in the minds of some pro-life physicians about its use.

Box 1. The Principle of Double Effect.

Actions leading to undesirable secondary effects, even if anticipated, can be permissible when all of the following criteria are met:

1. The primary act must be inherently good, or at least morally neutral.
2. The good effect must not be obtained by means of the bad effect.
3. The bad effect must not be intended, only permitted.
4. There must be no other means to obtain the good effect.

There must be a proportionately grave reason for permitting the bad effect.

Excerpt from "Double Effect Ethics Statement," used with permission from the Christian Medical and Dental Association.

However, even institutions with characteristic decisiveness on moral issues, such as the Catholic Church, leave the use of methotrexate to the individuals involved. It is beyond the scope of this document to conclude the matter universally for pro-life physicians.

Clinical Questions and Answers

Q *What are the options for tubal ectopic pregnancy currently in use?*

Options for tubal ectopic pregnancy include expectant management for embryos that appear to be deceased or for pregnancies of unknown location; salpingectomy, removal of the fallopian tube with the ectopic pregnancy in situ; salpingostomy, opening the fallopian tube and allowing egress of the gestation; and use of intramuscular methotrexate, either in single-dose or in multi-dose regimens.

Q *What are the ethical implications of salpingectomy?*

Salpingectomy provokes very little debate among physicians; this is recognized as the removal of a maternal organ which threatens harm to the maternal patient. After the tube is *ex vivo*, gas exchange becomes impossible, and the embryo eventually dies of acidosis. This type of death is like the death the embryo would experience without any intervention: eventually, the embryo would also die from inability to exchange gases due to inadequate blood supply, whether before or after tubal rupture.

Q *What are the ethical implications of salpingostomy?*

Salpingostomy invites slightly more discussion than salpingectomy since it is possible to remove the embryo and its extra-coeolmic membranes in pieces. A pro-life physician endeavors not to dismember a living fetus.

Q *What options are available for other types of ectopic pregnancy?*

There are other options available for other ectopics, which are often handled by specialists with a higher volume of experience in the various surgical techniques required, such as wedge resection of isthmic ectopic pregnancies or cesarean scar ectopic pregnancies.

Q *Are there options for ectopic pregnancy that allow the embryo to survive?*

At this time in history, there are no surgical or medical options which allow an ectopic embryo to survive. Rarely, an ectopic embryo survives when it is implanted in a very vascular organ, such as the liver or in the uterus outside the endometrial cavity. Investigations are underway to attempt ectopic pregnancy transplant in an animal model.[9]

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