

THERAPEUTIC SALPINGOSTOMY

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Abstract

The number of ectopic tubal pregnancies has increased greatly in recent history with a corresponding increase in loss of life of the affected embryos. Surgical removal of the section of the fallopian tube containing the embryo, known as salpingectomy, necessarily entails the death of the embryo and loss of fertility via the severed tube. However, there have been at least two incidences of pregnancies advancing to term, beginning as ectopic tubal pregnancies, after salpingostomy and embryo transfer to the uterus of the mother. These cases, separated by some seventy years, are the exception rather than the rule. Therapeutic salpingostomy (TS) is a morally viable alternative to salpingectomy. Its scientific viability will challenge the acceptance of embryonic death inevitably resulting from salpingectomy and long standing reliance on the principle of double effect to justify its use. Absent consideration of TS, where feasible, resort to salpingectomy will itself become morally suspect.

The Moral Problem: Life-Threatening Complications and Tubal Ectopic Pregnancy

Ectopic pregnancy is a condition where the embryo becomes implanted in an extrauterine fashion. A great majority of these occur in the fallopian tube, and if left unresolved, may cause the tube to rupture resulting in hemorrhaging, which may lead to the death of the mother. This life-threatening complication may be addressed medically in a number of ways, including self-resolution, salpingectomy, salpingostomy and the use of methotrexate alone or in conjunction with salpingostomy. Salpingectomy is a surgical procedure in which the portion of the fallopian tube containing the embryo is removed, whereas salpingostomy involves incision in the fallopian tube and removal of the embryo and its trophoblast without removal of any portion of the tube

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itself. Methotrexate is a molecular compound that will disrupt implantation. Because any of these active medical interventions will directly or indirectly affect the fate of the embryo, they implicate the teaching of John Paul II in *Evangelium vitae* (EV) no. 61 that “Human life is sacred and inviolable at every moment of existence, including the initial phase which precedes birth.”² In EV he specifically condemned non-therapeutic experimentation and research carried out on embryos as well as in-vitro fertilization and disproportionately risky or eugenic pre-implantation diagnostic practices.³ This is in continuity with the teaching of the Catechism:

Human life must be respected and protected absolutely from the moment of conception. From the first moment of his existence, a human being must be recognized as having the rights of a person - among which is the inviolable right of every innocent being to life...

Life must be protected with the utmost care from the moment of conception: abortion and infanticide are abominable crimes...

Since it must be treated from conception as a person, the embryo must be defended in its integrity, cared for, and healed, as far as possible, like any other human being. Prenatal diagnosis is morally licit, if it respects the life and integrity of the embryo and the human fetus and is directed toward its safe guarding or healing as an individual... It is gravely opposed to the moral law when this is done with the thought of possibly inducing an abortion, depending upon the results: a diagnosis must not be the equivalent of a death sentence.

One must hold as licit procedures carried out on the human embryo which respect the life and integrity of the embryo and do not involve disproportionate risks for it, but are directed toward its healing the improvement of its condition of health, or its individual survival. It is immoral to produce human embryos intended for exploitation as disposable biological material.⁴

² John Paul II, *Evangelium Vitae*, http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_25031995_evangelium-vitae.html, (25 March 1995), no.61.

³ Ibid, no. 63.

⁴ *Catechism of the Catholic Church*, http://www.vatican.va/archive/ENG0015/_P7Z.HTM, n. 2270-2271, 2274-2275 (internal quotation marks omitted).

This teaching, reaching back to the apostolic tradition expressed in the Didache and writings of the early Church Fathers⁵, was elaborated in *Donum vitae*⁶ and has been repeatedly affirmed by the Magisterium.⁷ In the circumstance of ectopic pregnancy the issue is particularly acute when medical intervention is necessary due to the serious risk posed to the mother's life.

Salpingectomy is universally accepted as moral, while the salpingostomy and the use of methotrexate are not held to be morally acceptable by many, and at present are being debated extensively.⁸ The moral problem is apparent in view of the Ethical and Religious Directives for Catholic Health Care Services (ERD),⁹ which precludes direct abortion and the *removal* of an embryo during pregnancy.¹⁰ ERD 36 prohibits any action that has as its "purpose or direct effect

⁵ Didache 2, <https://www.ewtn.com/library/SOURCES/DIDACHE.TXT>;
Ep. Barnabae, Ch.19, <http://www.ewtn.com/library/PATRISTC/ANF1-9.TXT>;
Letter to Diognetus, Ch. V, <http://www.ewtn.com/library/PATRISTC/ANF1-2.TXT>;
Tertullian, Apol. Ch. IX, <http://www.ewtn.com/library/PATRISTC/ANF3-1.TXT>.

⁶ Congregation for the Doctrine of the Faith, Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation: Replies to Certain Questions of the Day *Donum Vitae*, http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19870222_respect-for-human-life_en.html (22 February 1987).

⁷ Benedict XVI, *Address to the Participants at the 12th General Assembly of the Pontifical Academy for Life and Congress on The Human Embryo in the Pre-Implantation Phase*, http://w2.vatican.va/content/benedict-xvi/en/speeches/2006/february/documents/hf_ben-xvi_spe_20060227_embrione-umano.html (27 February 2006); "The Magisterium of the Church has constantly proclaimed the sacred and inviolable character of every human life from its conception until its natural end (cf. *ibid.*, no. 57). This moral judgment also applies to the origins of the life of an embryo even before it is implanted in the mother's womb." See also, Francis, *Address to Huntington Disease Patients and Their Families*, http://w2.vatican.va/content/francesco/en/speeches/2017/may/documents/papa-francesco_20170518_malati-corea-huntington.html (May 18 2017): "[N]o ends ... can justify the destruction of human embryos"; and Congregation for the Doctrine of the Faith, Instruction *Dignitas Personae* on Certain Bioethical Questions, http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20081208_dignitas-personae_en.html (8 September 2008).

⁸ Christopher Kaczor, *A Defense of Dignity: Creating Life, Destroying Life, and Protecting the Rights of Conscience* (Notre Dame, IN: University of Notre Dame Press, 2013), 70.

⁹ United States Conference of Catholic Bishops, *Ethical and Religious Directives for Catholic Health Care Services*, 5th edition (Washington, DC: USCCB, 2009), nos. 36, 45, 47, 48.

¹⁰ Kaczor, *A Defense of Dignity*, 69-71. ERD 36 addresses treatment following sexual assault and prohibits "removal" of an implanted ovum which, in context, must refer to an embryo but does not distinguish uterine and extrauterine implantation.

the removal, destruction, or interference with the implantation of a fertilized ovum.” ERD 45 defines abortion as follows: “Abortion (that is, the directly intended termination of pregnancy before viability or the directly intended destruction of a viable fetus) is never permitted. Every procedure whose sole immediate effect is the termination of pregnancy before viability is an abortion.” ERD 47 incorporates double effect reasoning by permitting certain interventions to address a “serious pathological condition” during pregnancy “when they cannot be safely postponed until the unborn child is viable, even if they will result in the death of the unborn child.” ERD 48 explicitly addresses “extrauterine pregnancy” and precludes any intervention “which constitutes a direct abortion.”

Salpingectomy, which removes the affected fallopian tube containing the embryo, is considered morally licit because the object is the removal of the affected tube and the intention is to save the mother’s life, while the loss of the embryo is viewed as a proportionate, foreseen and unintended circumstance acceptable under the Principle of Double Effect.

Salpingostomy, on the other hand, involves the removal of the embryo from the fallopian tube through an incision leaving the tube intact, and therefore is seen by many to posit as its object the removal of the embryo itself rather than the tube¹¹ thus constituting a direct assault on innocent human life rendering the procedure morally illicit. The Church has not as of yet made a clear and definitive determination as to the morality of salpingostomy, and has left the question open for debate.¹²

¹¹ John Paul II, *Veritatis Splendor*, http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_06081993_veritatis-splendor.html (6 August 1993), no. 76-82.

¹² William E. May, *Catholic Bioethics and the Gift of Human Life*, 3rd edition (Huntington, IN: Our Sunday Visitor, 2013), 195-196.

Another moral concern is in the use of methotrexate (MTX), a drug exquisitely toxic to the embryo, to the extent of being an embryonic poison. MTX is a chemotherapeutic agent widely used in treating cancer, and carries a “pregnancy category X” rating, indicating that it should not be used during pregnancy, and that its risks outweigh its potential benefits. This certainly reveals that MTX is abortifacient in nature, and raises serious questions about its use during pregnancy. It will kill any live embryo, and it is sometimes used in conjunction with another equally toxic drug known as misoprostol. Beyond what has been stated, the scope of this paper will not include an in-depth consideration of uses of MTX as it is obviously precluded.

Therapeutic salpingostomy (TS), in which an excised embryo is transferred to the uterus, is a licit alternative to salpingectomy and the guaranteed death of the embryo the latter entails. More research needs to be done for it to be widely used, and this research cannot be done on human embryos. But there has been some success in transplanting ectopic tubal pregnancies from the fallopian tube to the uterus, and a few, albeit rare, recorded instances of successful births.¹³ This paper addresses what can morally be done today, and what may be considered licit in the future within specified parameters, through advances in medical science.

Ethical Considerations in Salpingectomy vs. Salpingostomy vs. Methotrexate

Up to seventy percent of all ectopic pregnancies resolve spontaneously.¹⁴ The remaining percentage requires medical intervention before tubal rupture occurs. Salpingectomy is traditionally justified under the Principle of Double Effect because all of its five conditions are adhered to. First, the action of removing the affected tube of the mother is good in itself. Second, the good effect is not obtained through an evil one: the embryo is not directly attacked. Third,

¹³ Kaczor, *A Defense of Dignity*, 52; and Landrum B. Shettles, *Tubal Embryo Successfully Transplanted in Utero*, *American Journal of Obstetrics and Gynecology* 163.6 (December 1990): 2026-2027.

¹⁴ Kurt T. Barnhart, *Ectopic Pregnancy*, *New England Journal of Medicine*, 361.4 (July 23, 2009): 385.

saving the mother's life is proportionate to the regrettable loss of the embryo. Forth, the intention is to save the mother while the loss of the embryo is only tolerated. Fifth, there is no other avenue available which is less harmful.¹⁵ The operation is licit because the serious pathological condition warrants immediate action even though it will indirectly result in the death of the unborn child,¹⁶ and the intervention does not constitute a direct abortion.¹⁷

The traditional view of salpingostomy is generally negative. The procedure would be unquestionably licit if the embryo was dead, but many authorities see it as morally illicit if the embryo is alive.¹⁸ Application of the Principle of Double Effect typically holds that salpingostomy does not satisfy its criteria. If the embryo is alive, the action of removal from the fallopian tube is not good or indifferent, the good effect is obtained through a bad effect and the intention is directed towards the bad effect. Because the procedure is directed at an innocent human being, who will not benefit from the operation, it also appears to fail by looking very much like a direct abortion.¹⁹ It is this description of salpingostomy as illicit, according to the current traditional view, which this paper will engage *infra*.

MTX has as its basic mechanism of action the inhibition of deoxyribonucleic acid (DNA), which stops the production of rapidly growing cells, found in such situations as cancer and early embryonic development. In early pregnancies, MTX is thought to specifically attack

¹⁵ Ibid, 672.

¹⁶ USCCB, *Ethical and Religious Directives*, <http://www.usccb.org/issues-and-action/human-life-and-dignity/health-care/upload/Ethical-Religious-Directives-Catholic-Health-Care-Services-fifth-edition-2009.pdf>, no. 47.

¹⁷ Ibid, 48.

¹⁸ Marie A. Anderson et al., *Ectopic Pregnancy and Catholic Morality: A Response to Recent Arguments in Favor of Salpingostomy and Methotrexate*, National Catholic Bioethics Quarterly 11.1 (Spring 2011): 669, 672.

¹⁹ USCCB, *Ethical and Religious Directives*, no. 48; and Paul VI, Encyclical Letter on the Regulation of Birth *Humanae Vitae* (25 July 1968), no. 14.

trophoblastic cells thereby stopping embryonic cell proliferation,²⁰ resulting in embryonic death. Because the use of MTX, as described, is a direct assault on a live embryo, it is murder of an innocent. It is intrinsically evil and illicit.²¹ It has no moral use in treating pregnancies, ectopic or otherwise, when the embryo is alive.

Christopher Kaczor defends the use of MTX by his claim that the placenta, and by implication the trophoblast, should be considered organs of both the mother and the embryo. In his further arguments he states that the trophoblast may not be an organ of the embryo at all, thus, the claim that MTX's attack on the trophoblast is not a direct attack on the embryo. He admits that the trophoblast contains the DNA of the embryo alone, but that does not prove that it is an organ of the embryo.²² Kaczor's belief that the placenta and the trophoblast are not organs of the embryo alone, but rather of both the mother and the embryo is not reasonable. If they were organs of both, one would naturally expect DNA of both to be present, and this is not the case. The only DNA present is that of the embryo, which precludes it from being a joint organ.

He later reasons that the trophoblast is not an organ of the embryo at all, because upon removal or death of the embryo, the trophoblast may persist for hours, days or weeks, without additional nutrition, unlike other organs, such as the heart, lungs or liver, which would die quickly.²³ This could be explained by the reasoning that the trophoblast receives nutrition through the link to the mother, as did the embryo, and without the embryo drawing from the limited supply in the fallopian tube, it might persist for a time on its own. Therefore, it is reasonably clear that the trophoblast is an organ of the embryo alone, and an attack on it is

²⁰ Albert S. Moraczewski, *Arguments in Favor of Salpingostomy and Methotrexate*, in *Catholic Health Care Ethics: A Manual for Practitioners*, eds. Edward J. Furton et al. (Philadelphia, PA: National Catholic Bioethics Center, 2009), 123.

²¹ USCCB, *Ethical and Religious Directives*, no. 48; John Paul II, *Evangelium Vitae*, no. 62.

²² Christopher Kaczor, *The Ethics of Ectopic Pregnancy: A Critical Reconsideration of Salpingostomy and Methotrexate*, *Linacre Quarterly* 76.3 (August 2009): 274-278.

²³ *Ibid.*

indeed an attack on the live embryo, making the use of MTX illicit as being a form of direct abortion.²⁴

In an argument against the use of MTX in ectopic pregnancies, Maria DeGoede reminds us that the trophoblast is produced by and for the embryo alone, and it is of no use to the mother for her own benefit. She concludes by stating that the evidence of the trophoblast being an organ of the embryo is more compelling than the contrary, and agrees that an attack on the trophoblast by MTX is a direct attack on the embryo and constitutes direct abortion.²⁵ DeGoede's line of reasoning is formidable in showing the immorality of using MTX in ectopic pregnancy when the embryo is alive.

The Current State of Salpingostomy, With or Without Use of Methotrexate

The first consideration to address is what moral restrictions, if any, must be adhered to in treating tubal ectopic pregnancy if the embryo is either dead or no longer present. The answer is quite obvious: if the embryo is dead, then any method of treatment may be used,²⁶ because there is no chance of direct abortion without life present. The same holds true if the embryo is absent, as in post-salpingostomy, if part of the trophoblast remains and continues to grow and bore into the fallopian tube, a state called "persistent ectopic pregnancy."²⁷ Direct abortion is abortion willed as an end or a means, and always constitutes a grave moral disorder, since it is the deliberate killing of an innocent human being.²⁸ If there is no live embryo present, abortion is not possible and any safe means, including the use of MTX, may be used.²⁹

²⁴ USCCB, *Ethical and Religious Directives*, no. 48.

²⁵ Maria T. DeGoede, *An Argument Against the Use of Methotrexate in Ectopic Pregnancies*, National Catholic Bioethics Quarterly 14.4 (Winter 2014): 631-632.

²⁶ Presuming, of course, the usual conditions associated with medical interventions are satisfied: informed consent, reasonable hope of benefit, etc.

²⁷ Kaczor, *The Ethics of Ectopic Pregnancy*, 265.

²⁸ John Paul II, *Evangelium Vitae*, no. 62.

²⁹ Kaczor, *A Defense of Dignity*, 70.

The next question is how to know, with moral certitude, that the embryo is dead. Knowing whether a human fetus is dead presupposes that we are able to define death. It is necessary to distinguish between defining death and determining that death has occurred.³⁰ Traditionally, self-motion or self-change has been seen as a unique characteristic of the integrated unity of life. In determining fetal or embryonic death a bright line assessment involves consideration of one aspect of a living beings activity, namely growth.³¹ There is a fixed point in time when death occurs and the unity of the organism no longer exists, even though there may be individual parts or cells that continue to exist for a time. Because an organism is made up of living cells, tissue and organs, it should be noted that the death of a living organism as a whole is not the same as the death of the whole organism. When an organism has lost its unity as a whole - that is, its integrated functioning - it has ceased to exist as an organism, even though some cells, tissue and organs may continue to exist in disunity for a while. It is this loss of function, not structure, which determines death.³²

To determine the loss of unity, which in this case is the cessation of cell division, ultrasound and human chorionic gonadotropin (HCG) levels are used as indicators. Transvaginal sonography (TVS) is very sensitive in detecting ectopic pregnancies and the death of the fetus.³³ The biochemical marker, HCG, is detected within seven days of fertilization in maternal serum, and in maternal urine by the time the first period would have been due, if fertilization had not occurred. The combination of TVS and serum beta-HCG concentrations determines the presence

³⁰ Peter J. Cataldo and Thomas Murphy Goodwin, *The Determination of Fetal Death in Miscarriage: It's Ethical Significance for Fetal Tissue Transplantation*, in *The Fetal Tissue Issue: Medical and Ethical Aspects*, eds. Peter J Cataldo and Albert S. Moraczewski (Braintree, MA: The Pope John XXIII Center, 1994), 101.

³¹ *Ibid*, 102.

³² *Ibid*, 103-105.

³³ Bassem Rafaat and William L. Ledger, *Ectopic Pregnancy*, in *The Fallopian Tube in Infertility and IVF Practice*, eds. William L. Ledger et al. (New York, NY: Cambridge University Press, 2010), 9.

of an ectopic pregnancy.³⁴ Initially, in ectopic pregnancy, one would expect a doubling of serum HCG levels every two days. If after two days there is a leveling, decrease or a drastic decrease in HCG levels, embryonic death is to be considered. Further evaluation using TVS and HCG serum levels over subsequent two-day periods would confirm the death with certitude.³⁵

The consensus of theologians varies greatly in determining the morality of using salpingostomy alone or with MTX when the embryo is alive.³⁶ Some theologians who see salpingostomy as indirect abortion and state that its use may be morally good in treating ectopic pregnancy are Germain Grisez, Joseph Boyle, Marcellino Zalba, William E. May, Christopher Kaczor, Albert Moraczewski and Patrick Clark. Some who are against its use are T. Lincoln Bouscaren, Joseph V. Dolan, Ronald Lawler, Kevin Flannery, Fr. Nicanor Pier Giorgio Austriaco, Eugene Diamond, Thomas Hilgers and Kelly Bowring.

Germain Grisez is the most prominent of the former group, and completely accepts the teaching of the Magisterium that every direct abortion is gravely immoral. He offers his point of view not as practical norms to be followed by believing Catholics, but as hypotheses to be critically examined in the light of faith. Grisez says salpingostomy can be morally justified as indirect abortion because the death of the unborn is foreseen but not intended. It is not chosen as a means to the good end of saving the mother's life, or as an end in itself.

He accepts it in light of the Principle of Double Effect, and equates it to Thomas Aquinas's analysis of "killing" to defend against an unprovoked attack.³⁷ St. Thomas maintained that it is lawful to defend oneself against an unprovoked attack by an aggressor; however the

³⁴ Ibid, 7-8.

³⁵ Mark A. Damario and John A. Rock, *Ectopic Pregnancy*, in Te Linde's Operative Gynecology, 9th edition, eds. John A. Rock and Howard W. Jones (Philadelphia, PA: Lippincott Williams & Wilkins, 1992): 707-715.

³⁶ Kaczor, *A Defense of Dignity*, 70.

³⁷ William E. May, *The Management of Ectopic Pregnancies: A Moral Analysis*, in *The Fetal Tissue: Medical and Ethical Aspects*, eds. Peter J. Cataldo and Albert S. Moraczewski (Braintree, MA: The Pope John XXIII Center, 1994): 133-137.

intention must be to defend and not to kill. If in defending, the aggressor is killed, the action is licit, but if the intention is to kill the aggressor, then the action is illicit. If the means in self-defense is the act of self-defense and not to kill, then the natural species of the act may be killing, but the moral species is self-defense.³⁸ Grisez equates this explanation to using salpingostomy as self-defense against the trophoblast, which is making an unprovoked attack on the mother. He sees the procedure as self-defense, and the death of the embryo as indirect abortion, unintended but foreseen, and the act as moral.³⁹

Joseph Boyle holds that in salpingostomy, the “death of the fetus” is not a means to the end of saving the mother’s life.⁴⁰ Marcelino Zalba is in substantial agreement with Grisez and also fully accepts the teaching of the Magisterium in reference to direct abortion.⁴¹ At some time prior to 1994, William May adhered to Grisez’s thoughts, but after 1995 and in his first edition of *Catholic Bioethics* he reversed his position. By the time of his third edition, May changed his mind one more time and agreed with Grisez as to the moral use of salpingostomy.⁴² May stated that removal of the embryo was licit, and not the same as killing. He was, however, against the use of MTX as a way of dealing with ectopic pregnancy.⁴³ Christopher Kaczor believes that removal is not the same as killing, and although there is not yet an established procedure for embryo transfer from the fallopian tube to the uterus, one can hope for this in the near future. Albert Moraczewski and Patrick Clark both defend using salpingostomy and condone the use of MTX.⁴⁴

³⁸ Thomas Aquinas, *Summa Theologiae*, II-II, 64, 7.

³⁹ May, *The Management of Ectopic Pregnancies*, 135-136.

⁴⁰ *Ibid*, 139-140.

⁴¹ *Ibid*, 139.

⁴² *Ibid*, 122.

⁴³ May, *Catholic Bioethics and the Gift of Human Life*, 196.

⁴⁴ May, *The Management of Ectopic Pregnancies*, 129.

Other respected authorities have voiced opposition to salpingostomy. T. Lincoln Bouscaren, because of ERD 16 (1971), holds that removal of the embryo by salpingostomy is a direct attack on the embryo and therefore direct abortion, as opposed to salpingectomy, the removal of the fallopian tube alone, which he accepts as licit.⁴⁵ Joseph Dolan maintains that salpingostomy with the possibility of transfer, specifically to an artificial womb, is unrealistic. He holds that any action that is death dealing, including the removal of the embryo from the only place where it can survive, is direct killing.⁴⁶ Ronald Lawler contends that if an actor engages in something which is certain to result in the death of the fetus, he cannot claim that his intention was not killing, because the procedure chosen will indeed kill. In other words, one cannot choose a proposed course of action that will kill and not intend the death.⁴⁷ Kevin Flannery's thought is that salpingectomy is directed towards the mother, while salpingostomy is clearly directed towards the fetus, thus constituting direct abortion by the object chosen. In medicine, the sole legitimate object is the health of the individual it turns its attention to, and in salpingostomy this is not the case: the object is ultimately the killing of the fetus.⁴⁸ This is extrapolated from his example of the differences between craniotomy and hysterectomy, and the object of each. Nicanor Austriaco argues that using salpingostomy with MTX constitutes direct abortion because these procedures involve a direct and lethal attack on an unborn child. He maintains that use of MTX is direct attack on the trophoblast, which is an essential organ of the developing embryo, and its destruction is tantamount to destroying the heart of an adult.⁴⁹ Eugene Diamond, Thomas Hilgers and Kelly Bowring all vigorously oppose removing the embryo alone, but all

⁴⁵ Ibid.

⁴⁶ Ibid, 140-141.

⁴⁷ Ibid, 141-142.

⁴⁸ Ibid, 142.

⁴⁹ Nicanor Pier Giorgio Austriaco, *Biomedicine and Beatitude: An Introduction to Catholic Bioethics* (Washington, DC: The Catholic University of America Press, 2011), 65.

endorse efforts to establish embryo transfer from the fallopian tube to the uterus as an ordinary medical procedure.⁵⁰

As can be seen, there is no consensus by theologians of the morality of salpingostomy as it is practiced today. However, even those who oppose it are of the opinion that it would be acceptable if there were a real chance of successful transfer of the embryo to the mother's uterus leading to birth. It is precisely that prospect that is now examined.

Possibilities for Therapeutic Salpingostomy

Many have argued that there is little to no chance of successfully transferring the embryo from the fallopian tube to the uterus. That pessimism is unfounded and is contradicted by the historical record in at least two cases.

The first instance was in 1916 in Duluth, Minnesota. During an operation on a twenty-seven year old woman, Dr. C. J. Wallace discovered an ectopic pregnancy in the left fallopian tube, about the size of a walnut. He removed the embryo intact with a portion of the tube wall, being careful not to injure the sac. The embryo was retrieved easily which was about the size of an olive. He placed it in the uterus of the mother and followed her pregnancy carefully. The pregnancy progressed normally to full term and resulted in the natural birth of a fully developed boy, without a scar.⁵¹ What follows is Wallace's report reprinted in the *Linacre Quarterly* in 1995:

September 13, 1915, Mrs. W.J. W., age 27; housewife; American; of good appearance with dark complexion; menstruation regular; married five years; no children; no miscarriages; constipated; urine normal; nervous; pulse normal; temperature normal. Family history negative. Personal history negative except

⁵⁰ May, *Catholic Bioethics and the Gift of Human Life*, 196.

⁵¹ C.J. Wallace, *Transplantation of Ectopic Pregnancy from Fallopian Tube to Cavity of the Uterus*, *Surgery, Gynecology and Obstetrics* 24 (1917): 578-579.

that she had been told by one physician she had a fibroid in the posterior wall of the uterus. I found this to be true. She was very anxious to have children. Her husband was a fine, clean, well-built man, of good habits.

September 15, 1915. Operated on for fibroid and when abdomen was opened, we found an ectopic gestation in the left tube at outer part of isthmus. The tube was very soft and healthy, enlarged to the size of a walnut but not distended. The uterus showed the same shade of darkening color.

The fibroid was about the size of a large hen's egg and extended into cavity of uterus. On removing the fibroid I was compelled to make a clean cut incision encircling the tumor and into the cavity of the uterus, extending down to and involving the inner os. Knowing their anxiety for raising a child, I decided to try, at least, the only thing at hand - to transplant the ectopic pregnancy. I knew it could be easily removed from the cavity of the uterus if it did not grow to the wall and be retained and nourished to full development. Had it failed to attach itself it could have easily been dislodged by the use of a curette.

However, I was not called upon to remove it as all went well. The tumor removed, I left the uterus protected while I carefully opened the tube and dissected the pregnancy out intact, being careful not to injure the sac in any way by keeping wide away and including part of the tube-wall. It came out very easily and was in size about equal to a large olive. It was at once placed within the cavity of the opened uterus and caught by two of the sutures of the inner row of plain No. 1 catgut used in closing the wound in the uterus. The tube was closed in like manner and left in place. The patient was watched carefully for any hemorrhage, vaginal discharge, or signs of trouble for two weeks with no symptoms whatever.

She left the hospital on the 14th day after a complete recovery. The pregnancy went on normally to full term and resulted in the natural birth of a fine boy, fully developed and without a scar, May 2, 1916.

No doubt the raw surface of the edges of the wound in the uterus was instrumental in the perfect attachment of the transplant. They gave a good source of blood supply to the raw surface of the detached sac or tube-wall, thus enabling it to adhere readily.⁵²

The second instance was in 1980 at the Gifford Memorial Hospital in Randolph, Vermont. A twenty-seven year old patient presented with severe pain in the area of the left fallopian tube, approximately four weeks after intercourse. She had no uterine bleeding and a

⁵² C.J. Wallace, *Transplantations of Ectopic Pregnancy from Fallopian Tube to Cavity of Uterus*, *Linacre Quarterly* 62.1 (1995): article 9.

positive pregnancy test. All laboratory tests were normal and a physical examination revealed no appreciable uterine enlargement or abnormalities other than severe pain in the tubal area. Further evaluation showed an ectopic pregnancy in the left fallopian tube. Using salpingostomy, the embryonic sac was carefully removed intact, still covered with chorionic villi, and placed in oxygenated saline solution warmed to body temperature. The embryonic sac was then transferred to her uterus using infusion tubing, syringe and bulb. The pregnancy test remained positive, and a normal infant was delivered at term.⁵³

It is noteworthy that in the second case, chorionic villi were present to transfer nutrients to the embryo and carry carbon dioxide and other waste products from the embryo. No similar account was mentioned in the first case. That successful transfer was done in the almost seventy years prior to the second case, and very little was known about the medical procedure at that time. Certainly, medical abilities today are far more advanced than in either case. Kaczor,⁵⁴ Anderson,⁵⁵ Damario and Rock,⁵⁶ May, Diamond, Hilgers, Bowring⁵⁷ and others, all endorse efforts to develop techniques for relocation of an embryo from the fallopian tube to the uterus in what would essentially constitute therapeutic salpingostomy, but little has been done to actually advance the concept.

The first two things that need to be in place before salpingostomy with ET can become an ordinary medical procedure are early detection and advanced microsurgery. As of 1992, using TVS, tubal ectopic masses as small as 10mm in diameter have been identified. In some clinics where the condition is treated frequently, more than fifty percent of cases are diagnosed before

⁵³ Landrum B. Shettles, *Tubal Embryo Successfully Transferred in Utero*, American Journal of Obstetrics and Gynecology 163.6 (December 1990): 2026-2027.

⁵⁴ Kaczor, *The Ethics of Ectopic Pregnancy*, 268.

⁵⁵ Anderson et al., *Ectopic Pregnancy and Catholic Morality*, 683.

⁵⁶ Damario and Rock, *Ectopic Pregnancy*, 696.

⁵⁷ May, *Catholic Bioethics and the Gift of Human Life*, 196.

tubal rupture.⁵⁸ If TVS is inconclusive, Magnetic Resonance Imaging (MRI) can be used safely and quickly.⁵⁹ Once the fallopian tube has ruptured, it becomes a medical emergency no longer treatable using salpingostomy. As far as microsurgery is concerned, we do not lack in ability, rather we lack the necessity to develop a process which is morally acceptable regarding the fate of the embryo in salpingostomy.

Assuming that this will be done in the foreseeable future, it is necessary to address objections put forth by various Catholic documents, theologians and ethicists. In *Donum vitae* section II, ET is mentioned no less than fourteen times, but always in conjunction with IVF,⁶⁰ and the Church remains opposed to it.⁶¹ This is not an indictment of ET, but rather of IVF and the ET associated with it. ET, intended as a therapeutic remedy, is not specifically found to be illicit by the teaching authority of the Church. Considering the Declaration on Procured Abortion, direct abortion is condemned as either an end or a means.⁶² But scientific progress and the possibility of delicate interventions are recognized as potentially admirable.

We are warned that technology can never be independent of morality and should be at the service of man to prevent or cure illness.⁶³ The Declaration does not prohibit embryo removal. It addresses killing by procured abortion, which salpingostomy with ET is not. Looking to the ERDs, the apparent objection to ET in No. 36 is more illusory than real. The specific language of ERD 36 prohibits treatments that “have as their purpose or direct effect the removal, destruction, or interference with the implantation of a fertilized ovum.” Footnote 19 makes it clear that the issue under discussion is abortion. The principal concern of the directive is to protect the life of

⁵⁸ Damario and Rock, *Ectopic Pregnancy*, 706-708.

⁵⁹ Rohini Gupta et al., *Magnetic Resonance Imaging – A Troubleshooter in Obstetric Emergencies: A Pictorial Guide*, *Indian Journal of Radiology and Imaging*, 26.1 (February 2016): 49.

⁶⁰ Congregation for the Doctrine of the Faith, *Donum Vitae* § II.

⁶¹ *Ibid.*, II.5.

⁶² Congregation for the Doctrine of the Faith, *Declaration on Procured Abortion* (18 November 1974), no. 7.

⁶³ *Ibid.*, no. 17.

an innocent human being conceived through the criminality of rape. In context, its prohibition on the initiation or recommendation of treatments that have as their purpose the *removal* of a fertilized ovum should be understood as a prohibition on abortive modalities, either interceptive or contragestative. The argument for salpingostomy with ET does not propose removal as a form of abortion, but rather a therapeutic treatment aimed at the preservation of the child's life and is in accord with ERD 47 which provides that "[o]perations, 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." Certainly, ERD 36 could benefit from linguistic revision to clarify this point, but it should not operate as a blockade on this potentially lifesaving procedure.

Those theologians and ethicists who object to salpingostomy do so in view of various ERDs, or consider it direct abortion by attacking the embryo, or deem the procedure unrealistic. I have shown that no ERD was violated, direct abortion is not occurring, there is no direct attack on a live embryo, and even though not yet perfected, the procedure has been successfully done at least twice and with less technology than we possess today.

Conclusion and Suggestions

Salpingostomy, as directly attacking the embryo to save the life of the mother and preserve the fallopian tube while discarding the embryo may be illicit, however, saving the life of the unborn child and the mother's life while preserving the fallopian tube all at the same time should be seen as licit by any standard. For salpingostomy with ET to become an effective, safe, and ordinary procedure, the following developments will be necessary:

- 1- Continued research on early detection of ectopic tubal pregnancy.

2- Advances in microsurgery.

3- Further research on the successful use of the procedure in the cases discussed herein.

4- Development of a standardized protocol for the procedure.

If the above four points are developed so that therapeutic salpingostomy with ET becomes a safe and ordinary procedure, with reasonable expectation of a positive result, salpingectomy will necessarily become morally suspect since it would doom the developing embryo when a life protective alternative exists.

“The willingness to submit loyally to the teaching of the Magisterium on matters *per se* not irreformable must be the rule. It can happen, however, that a theologian may according to the case, raise questions regarding the timeliness, the form, and even the contents of magisterial interventions.”⁶⁴ The time has arrived for reassessment of salpingostomy with ET.

⁶⁴ Congregation for the Doctrine of the Faith, Instruction *Donum Veritatis* on the Ecclesial Vocation of the Theologian, http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19900524_theologian-vocation_en.html (24 May 1990), no. 24.