Clarifying the Science behind Salpingostomies

To the Editor: I am grateful for Samuel Hager's comprehensive treatment of salpingostomy in "Against Salpingostomy as a Treatment for Ectopic Pregnancy."[1] I see in it the well-meaning work of bioethicists to understand embryology and surgery, but I also see evidence of the widespread misunderstanding of these subjects that informs the debate on salpingostomy. There are four issues that need clarification.

First, the trophoblast is fetal tissue only: it comes entirely from fetal cells.

Second, the trophoblast is unquestionably a vital organ: while a morula or a blastocyst, a human can survive on nutrients built up in the cytoplasm of the maternal egg and diffused across its relatively simple body. The larger embryo requires the trophoblast to implant and begin to derive nutrients from maternal blood. It is, in fact, the embryo's only vital organ: fetuses can develop with dysfunctional brains, hearts, lungs, livers, kidneys, and gastrointestinal tracts and can live in utero without complications when they have a healthy placenta. Embryologists call this tissue the placenta after a certain stage in its development, but it is fundamentally the same tissue, albeit immature.

Third, the fallopian tube or any other site of ectopic implantation is not the pathologic organ. The pathophysiology of ectopic pregnancy often involves dysfunctional maternal tissue, as Mr. Hager points out. But that dysfunction is not what the vital conflict is about. Rather, it is the ectopic *pregnancy* that leads to fetal death and risks maternal morbidity and mortality. Although faulty cilia or a cesarean scar can predispose a woman to ectopic pregnancy, these tissues by themselves do not threaten any life.

This point is key and almost universally overlooked. Although Mr. Hager identifies that the trophoblast is pursuing its nature by burrowing into maternal tissue, it is nevertheless *ectopic*, which is a diseased state. Ectopic testes, crystalline lenses, pulmonary sequestrations, and many other tissues are directly removed when they cause far less dramatic threats than those posed by an ectopic trophoblast.

Fourth, salpingostomy is not "cutting the trophoblast,"[2] as Mr. Hager suggests. The trophoblast is implanted in a coin-sized section of the inner lumen of the fallopian tube. It, along with the gestational sac (made of membranes also built by the embryo), is sheared off the tube wall in a salpingostomy. The exact location of the flat, coin-sized trophoblast is not easy to find on the surface of the gestational sac, especially when the fallopian tube is extruding all the membranes and tiny embryonic body (not usually visible) in an abdomen full of blood.

Understandably, there is hesitation because salpingostomy and methotrexate cause direct removal of the only vital organ of an innocent person. This letter is to point out that ectopia is a diseased state, and dislodging ectopic tissue should not be dismissed immediately as a direct abortion.

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1. Samuel E. Hager, "Against Salpingostomy as a Treatment for Ectopic Pregnancy," *National Catholic Bioethics Quarterly* 16.1 (Spring 2016): 39–48.
2. Ibid., 43.