Ectopic Pregnancy Relocation Technique: Experimental Anatomical Approach

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AAPLOG

INTRODUCTION

Worldwide, approximately 6.7 million unborn babies are lost each year due to ectopic pregnancies, along with about 6,400 maternal deaths. Among ectopic pregnancies, ~10% demonstrate embryonic cardiac activity at the time of diagnosis.

Despite major advances, ectopic pregnancy remains a condition for which fetal salvage is not currently feasible. Nevertheless, Buskmiller et al. (2024) proposed a potential approach to ectopic pregnancy relocation, involving an incision in the uterine body to transfer the fallopian tube containing the ectopic pregnancy into the uterus, with the theoretical goal of allowing continued embryonic development.

To the best of our knowledge, this technique has never been described in the human body; therefore, our goal is to assess the surgical feasibility of the ectopic pregnancy relocation technique.

METHOD

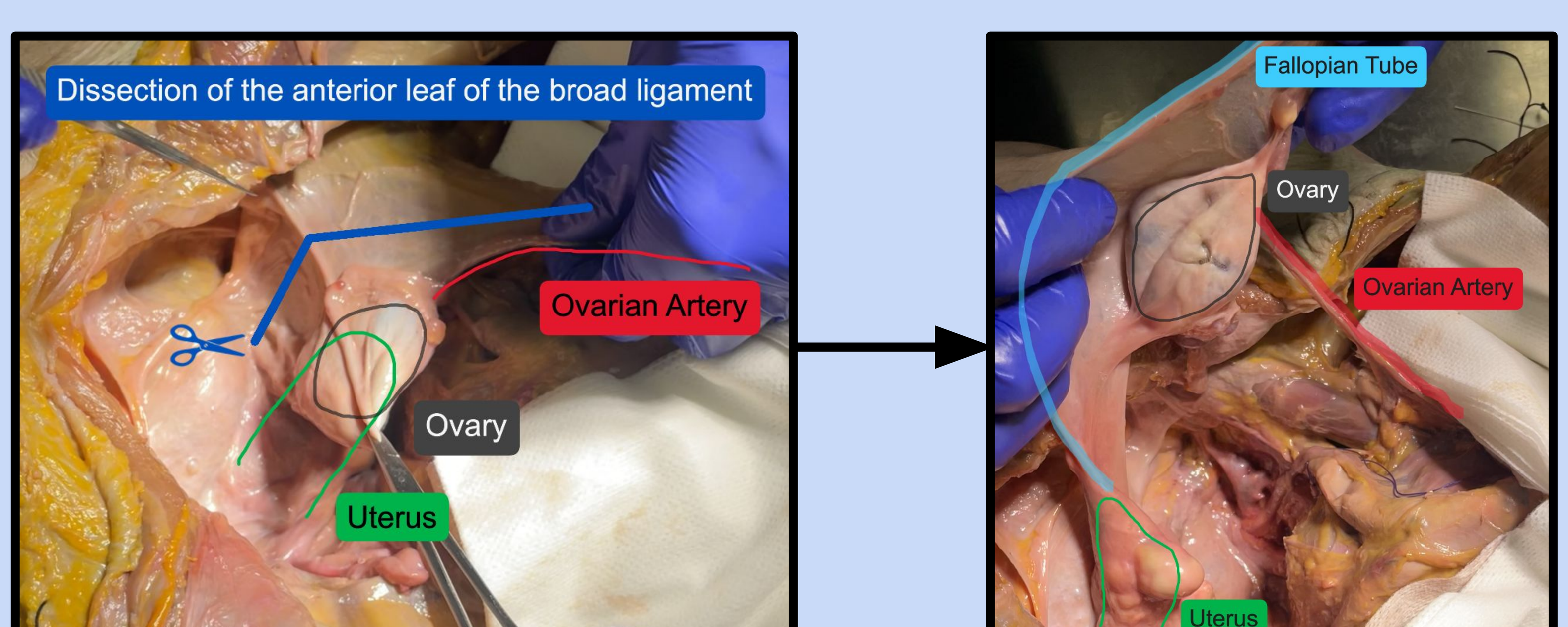
We performed the surgical technique in a fresh female cadaveric donor who was >80 years old at death and nulliparous. For this purpose, we used standard surgical instrumentation and performed a laparotomy to expose the female internal genital tract.

We present these findings using procedural photographs and a detailed, narrated step-by-step video illustrating the technique.

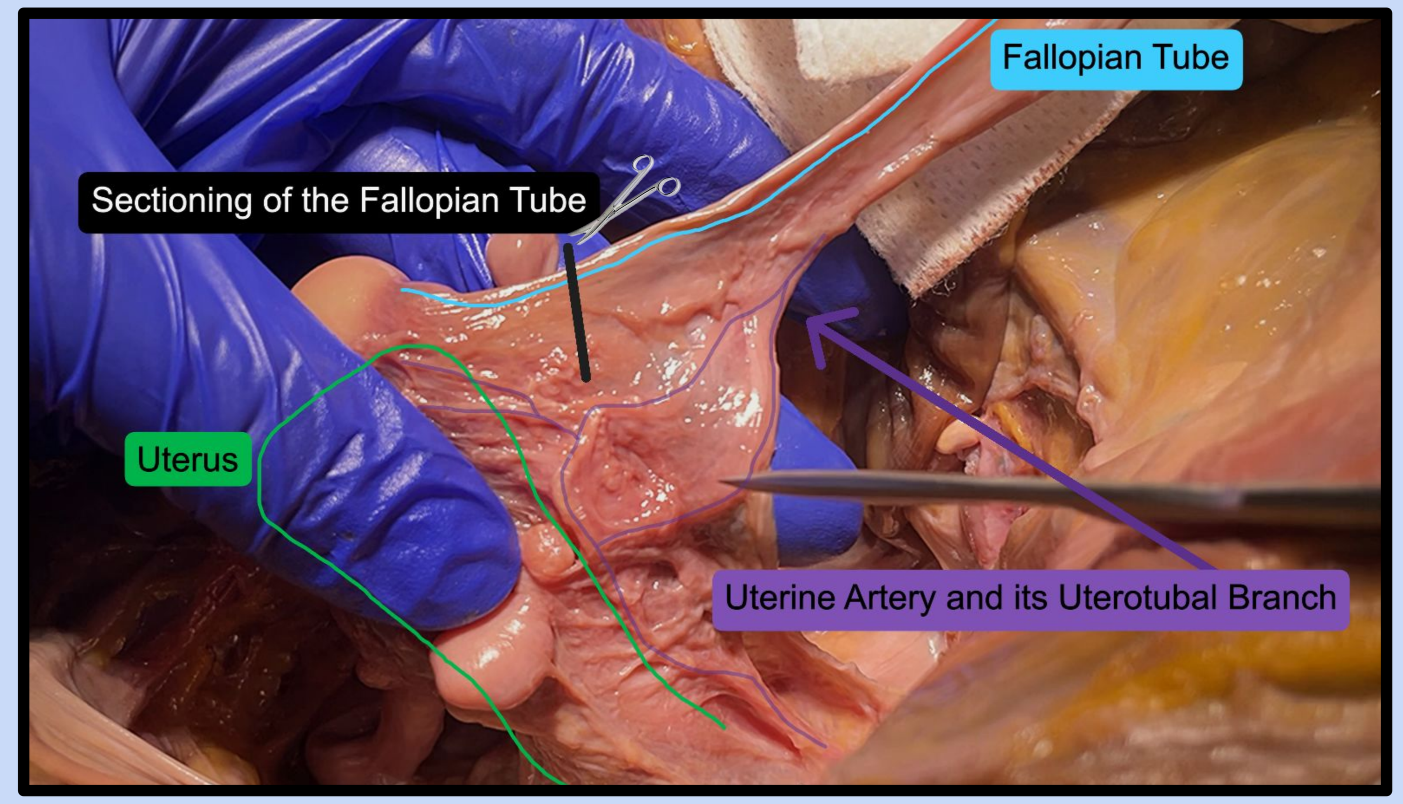
VIDEO OF THE PROCEDURE

TECHNIQUE DESCRIPTION

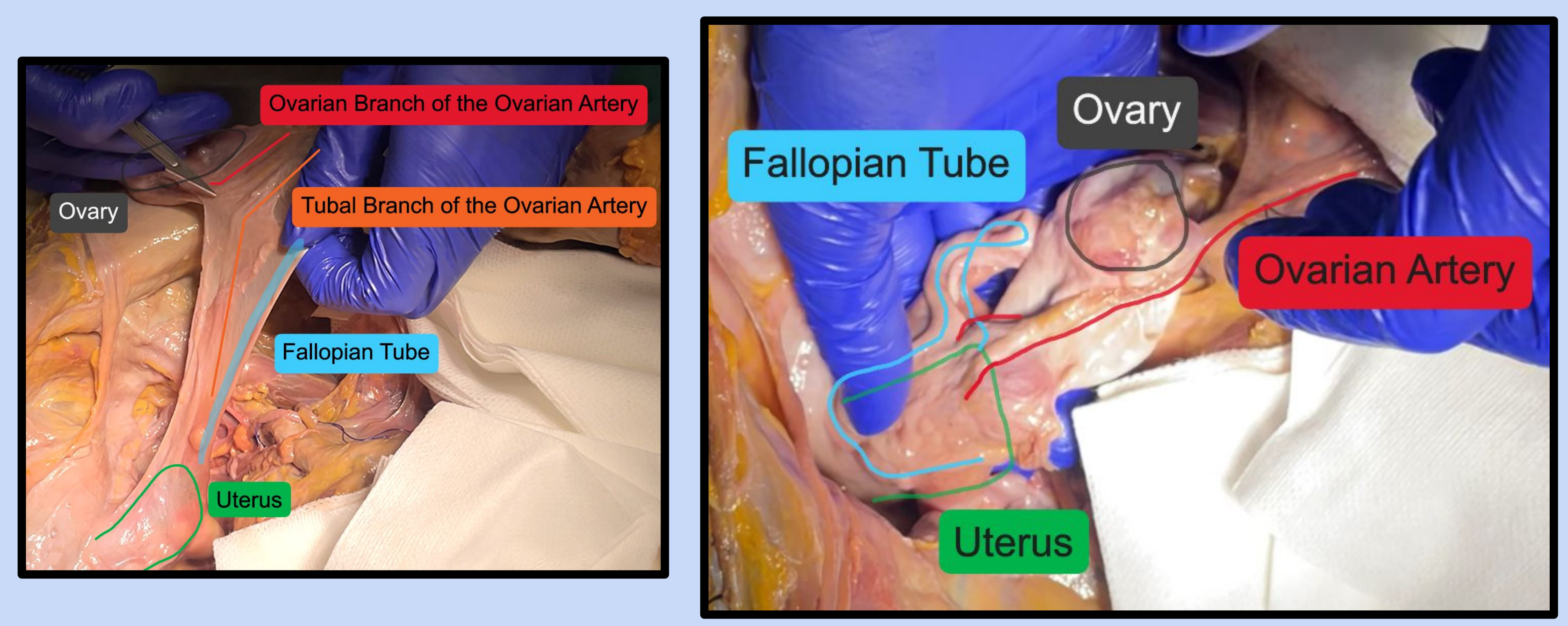
STEP 1: Dissection of the anterior leaf of the broad ligament



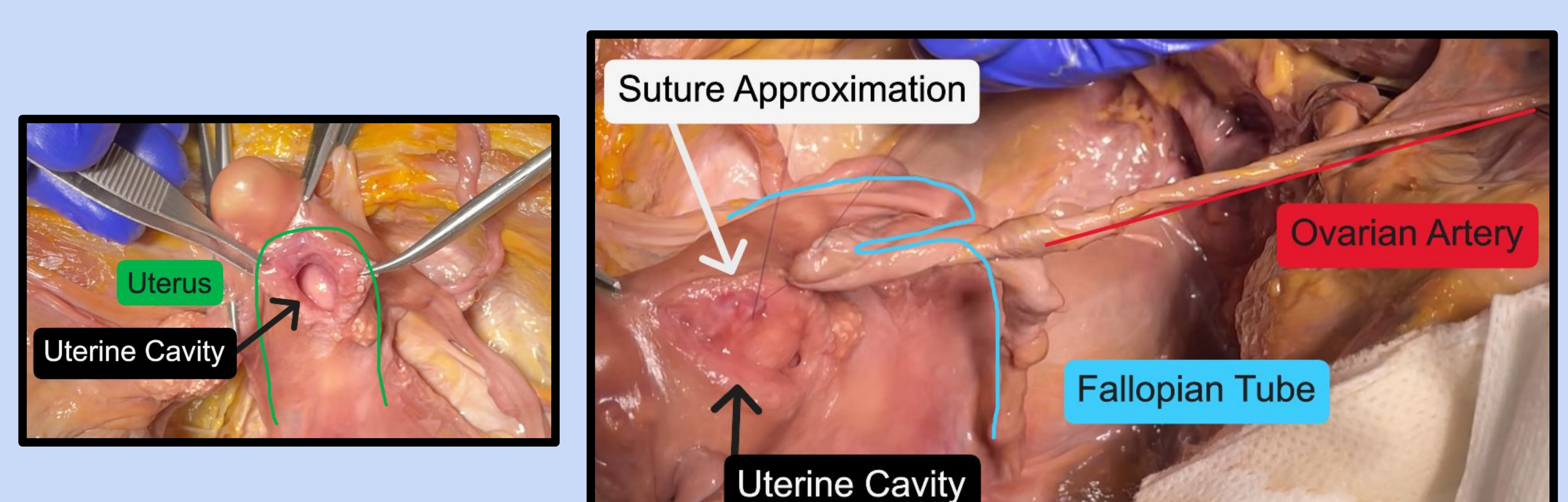
STEP 2 (Optional): Sectioning the fallopian tube at the isthmus



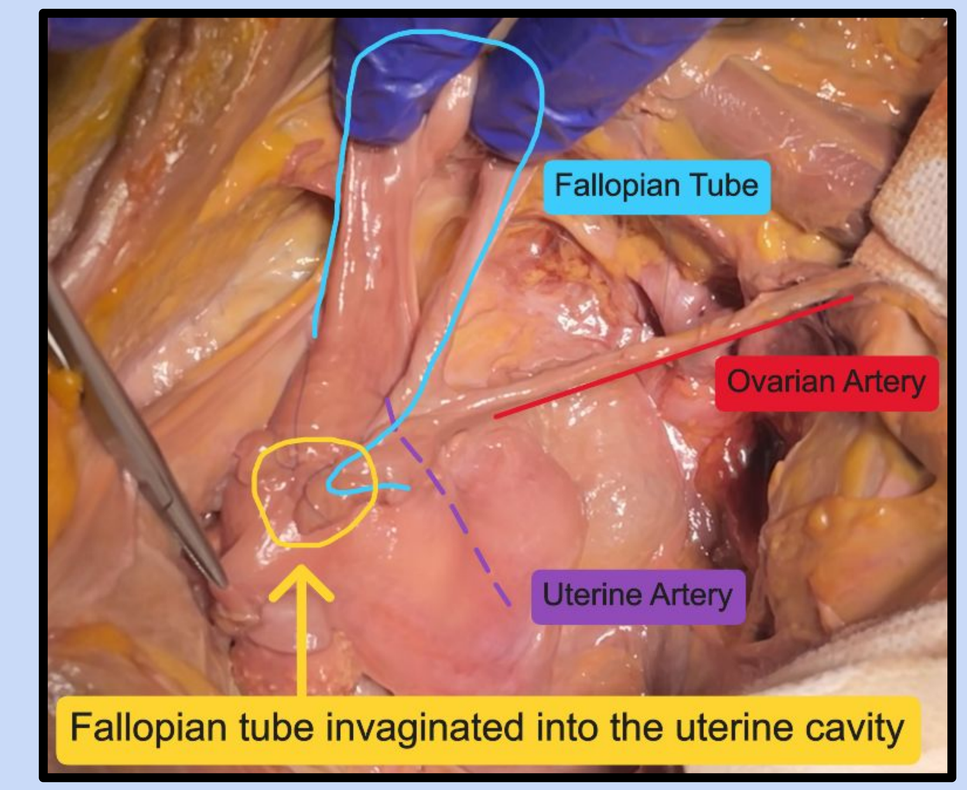
STEP 3: Dissection of the mesovarium to individualize the ovary from the fallopian tube (preserving vascular structures)



STEP 4: Hysterotomy and fallopian tube invagination via suture approximation (after oophorectomy)



STEP 5: Final View After Uterine Closure



RESULTS

The surgical approach performed for the ectopic pregnancy relocation technique was anatomically feasible.

Adequate rotational angulation was achieved while maintaining the anatomical integrity of both arterial supply to the tube (ovarian and uterine). Ovarian preservation also appeared feasible.

Sectioning the proximal fallopian tube at the isthmus—while preserving the tubal branches of the uterine artery—provided additional angulation without compromising the anatomic course of these branches, which may be critical in more proximally located ectopic pregnancies.

FUTURE DIRECTIONS

Further research is needed to evaluate: **(1)** post-procedure embryo–placental perfusion, **(2)** the uterine incision and closure/scar integrity (including the risk of uterine rupture), **(3)** feasibility of intrauterine tubal opening and subsequent re-placentation, and **(4)** potential effects on future fertility, including the likely loss of the involved fallopian tube, long-term uterine integrity, and the potential need for delivery by cesarean section.

These findings support further experimental work to refine the technique and to assess physiologic feasibility in ex vivo organ-perfusion models, prior to subsequent evaluation in animal models.

References

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