


## CASE IMAGE OPEN ACCESS

# Ectopic Pregnancy After In Vitro Fertilization With Donor Eggs in a 54-Year-Old Woman; Bad News After Wishful Thinking for the Last Chance of Pregnancy

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## ABSTRACT

This case presents a rare form of an ectopic pregnancy after retrograde migration of the transferred blastocyst to the fallopian tube. The presence of hydrosalpinx and extremely advanced maternal age further increases the risk. This case highlights the possibility of blastocyst migration even after ultrasound guidance during embryo transfer.

## 1 | Case Image Presentation

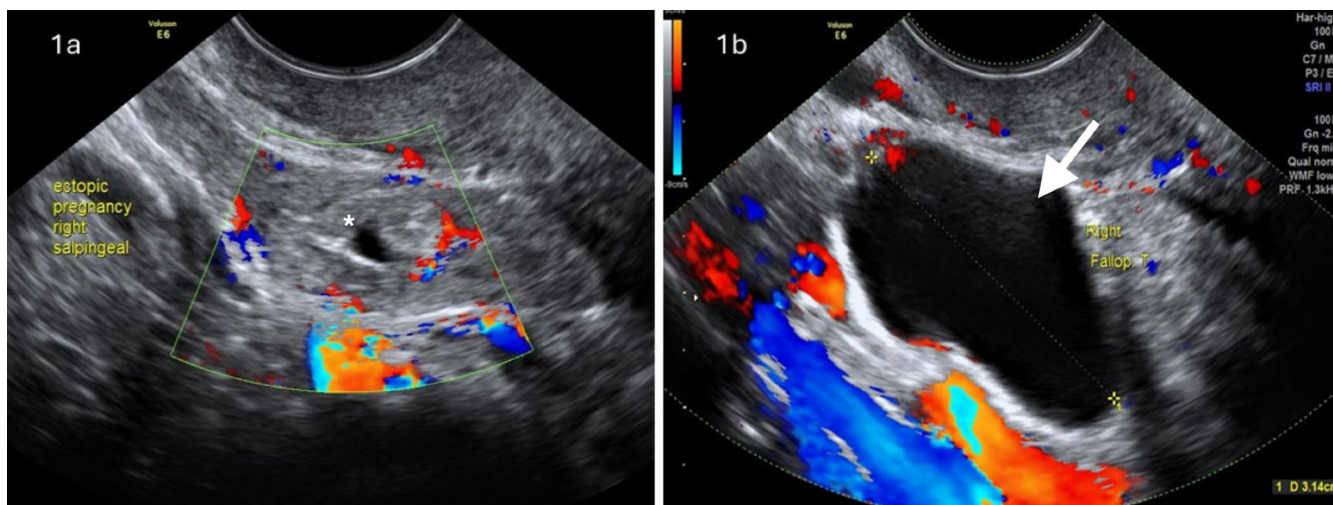
In women with advanced maternal age using donor eggs, the prevalence of ectopic pregnancy is 0.72% [1]. This increases to 12.8% if any adnexal pathology is present [2]. However, there is limited data in the literature for the prevalence of ectopic pregnancy in extreme advanced maternal age. The migration of a transferred embryo from the endometrium to the fallopian tube is called retrograde migration and is an exceptionally rare event for blastocysts placed correctly under ultrasound guidance [3]. This migration seems to occur mainly during the embryo cleavage stage, but not after the blastocyst is fully matured due to the ability of the blastocyst to implant once it attaches to the endometrial cavity. Risk factors for this phenomenon include abnormal uterine contractions, pelvic inflammation, and uterine pathologies, like hydrosalpinx as in our case [3]. This unique case refers to an extremely advanced maternal age of 54 years and retrograde migration of a correctly placed blastocyst to the

fallopian tube. It should be noted that in vitro fertilization (IVF) until 54 years of age can be legally performed in Greece.

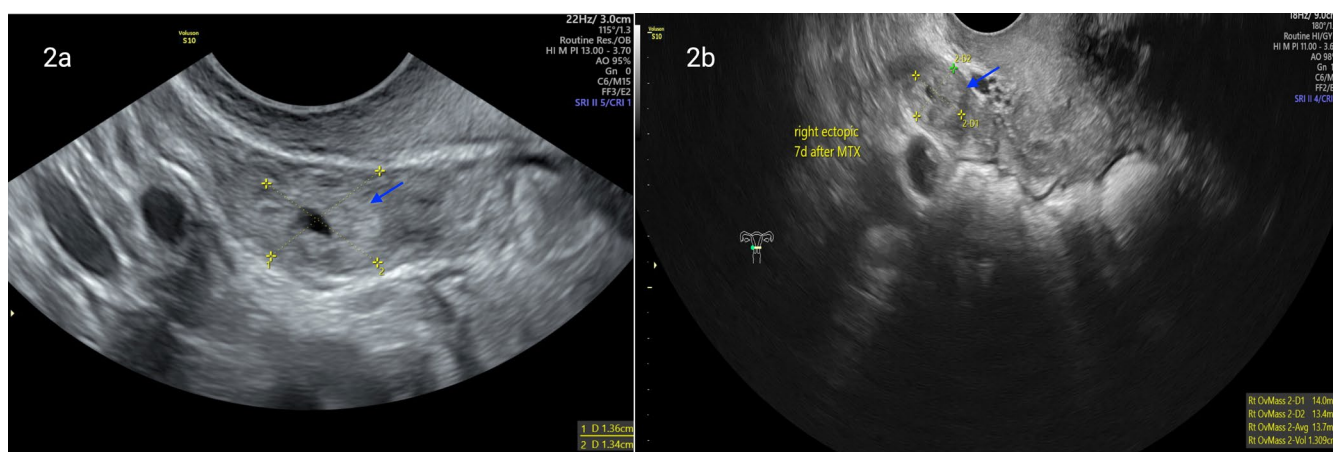
A 54-year-old G0P0 pregnant woman in the 8th week presented to our hospital for pregnancy follow-up after egg donation without any previous symptoms. She underwent a transvaginal scan, and an ectopic salpingeal pregnancy was revealed in the right salpinx. A right hydrosalpinx was also illustrated. The uterus was empty, and the left ovary was normal. Sonographically, the ectopic mass was measured to be 168 × 135 × 33 mm (Figure 1a,b), with an empty sac. The beta-human chorionic gonadotropin ( $\beta$ -hCG) levels were 1417 mIU/mL (normal values for the 8th week of pregnancy between 7650 and 229,000 mIU/mL). The previous serial  $\beta$ -hCG levels from the beginning of the pregnancy were analytically 55.5 mIU/mL, 51.1 mIU/mL, 394 mIU/mL, 621 mIU/mL, and 1174 mIU/mL. Upon arrival, vaginal cultures were taken due to the hydrosalpinx (known before the IVF procedure). It should be mentioned

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**FIGURE 1** | Transvaginal ultrasound. (a) the right ectopic salpingeal mass (marked with a white asterisk) measured 168×135×33 mm, (b) the co-existent hydrosalpinx of the right salpinx (marked with a white arrow).



**FIGURE 2** | Transvaginal ultrasound illustration of the ectopic lesion (marked with a blue arrow) (a) four days and (b) seven days after methotrexate administration showing the mass decrease.

that the patient was counseled to proceed to a right salpingectomy before the IVF cycle, and she decided to skip the surgery due to the time limit restriction. After counseling, the patient was administered methotrexate intramuscularly and managed conservatively. The day after methotrexate administration, the patient started to have vaginal bleeding without any other symptoms. Four days later,  $\beta$ -hCG had increased to 1620 mIU/mL, but the ectopic mass had decreased in dimensions. Seven days later,  $\beta$ -hCG was reduced to 1200 mIU/mL (Figure 2a,b). The ectopic salpingeal mass had further decreased; hence, a second dose of methotrexate was no longer needed. Her Hb levels and hct were both normal, and  $\beta$ -hCG levels dropped under 5 mIU/mL after a month.

Our case illustrates the rare occurrence of a blastocyst migration to the salpinx in an extremely advanced maternal age. This case aims to increase the vigilance and awareness of reproductive medicine specialists regarding the retrograde migration phenomenon, especially in cases with tubal pathology. Every cloud has a silver lining, and our patient's safety should be our first and only thought.

## Author Contributions

**Sofoklis Stavros:** visualization, writing – original draft. **Anastasios Potiris:** validation, writing – review and editing. **Alexios Kozonis:** validation, writing – review and editing. **Athanasios Zikopoulos:** writing – original draft. **Angeliki Gere:** conceptualization, writing – original draft. **Paraskevi Lazari:** writing – original draft. **Theodoros Karampitsakos:** investigation. **Charikleia Skentou:** investigation, writing – review and editing. **Ekaterini Domali:** investigation, writing – review and editing. **Peter Drakakis:** supervision, writing – review and editing.

## Ethics Statement

The study was conducted in accordance with the World Medical Association Declaration of Helsinki. The woman has given her written informed consent to publish the case (including the publication of images obtained).

## Consent

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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