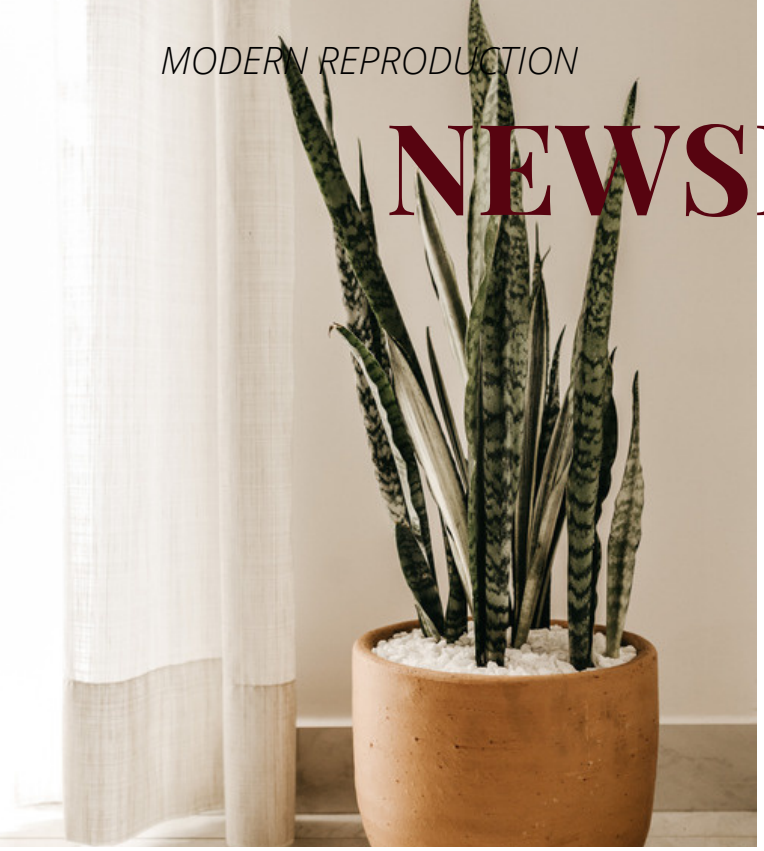
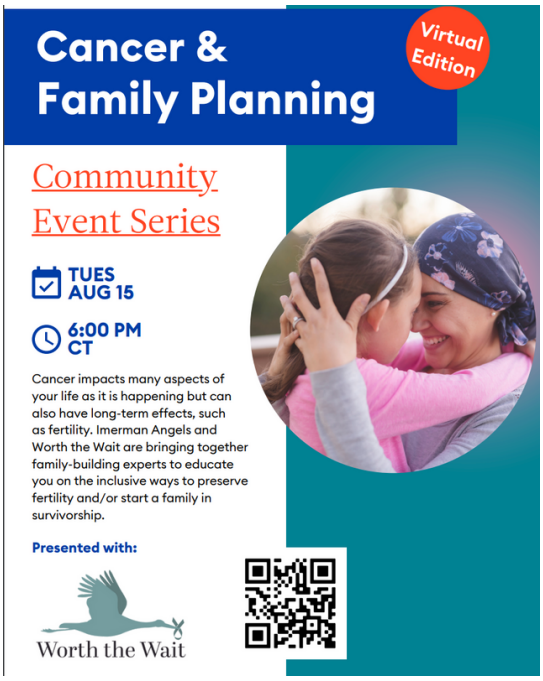


NEWSLETTER

This newsletter centers on reproductive topics with a genetics focus. If there is an organization or upcoming webinar you'd like me to include in a future newsletter, please feel free to reach out at genetics@modernreproduction.org.

Sign up for the newsletter here

upcoming webinars



ISSUE 7

NEWSLETTER

The little lit review

1

National and international guidelines on the management of twin pregnancies: a comparative review

Omer Weitzner, MD; Jon Barrett, MD; Kellie E. Murphy, MD; John Kingdom, MD; Amir Aviram, MD; Elad Mei-Dan, MD; Liran Hiersch, MD; Greg Ryan, MD; Tim Van Mieghem, MD; Nimrah Abbasi, MD; Nathan S. Fox, MD; Andrei Rebarber, MD; Vincenzo Berghella, MD; Nir Melamed, MD, MSc

This article summarizes the consensus and controversy of multiple professional guidelines on twin pregnancies from national and international groups. Below is a summary of table one, specific to prenatal genetic considerations:

- Twin pregnancy occurs >3% of US pregnancies; is associated with increased risk of pregnancy complications such as preterm birth, hypertensive disorders, gestational diabetes, cesarean delivery, and fetal growth restriction

screening

- NT is recommended in first trimester (11 -13 6/7 wk GA)
- Biochemical screening is less accurate in twins as in singletons - some orgs recommend, don't recommend, and others say consider
- NIPT can be offered or recommended but the performance may be similar or lower than singleton gestations, with the need for more data
- The authors state given current data NIPT is the superior screen for twins and SNP based methods can provide information for individual fetal fractions and zygosity

diagnostic testing

- CVS loss rate is greater than in singleton (1% above background risk; 2-3.8%), yet recommended over amniocentesis given earlier diagnostic results.
- Amniocentesis risk may be increased; sampling of both sacs can be considered unless confirmed monochorionicity at <14 wks

vanishing twin or demise

- Per Canada, Vanishing twin pregnancies may be at increased risk for fetal structural anomalies, growth restriction, and preterm birth
- If intrauterine fetal demise in dichorionic twins occurs, then risk to co-twin may be preterm birth, 3% risk for death, and 1-3% risk for neurologic injury

ISSUE 7

NEWSLETTER

The little lit review

2

Paternity pseudo-exclusion caused by tetragametic chimerism in a gestational surrogacy case

Andrei Semikhodskii , Tatiana Makarova , Daria Sutyagina

Discovering that the wrong embryo was transferred or incorrect gametes were used in an IVF setting is a distressing situation. To address this concern, laboratories are now offering supplementary assessments to ensure that the intended egg and sperm are accurately utilized during the embryo creation process. Alternatively, parental testing can take place through prenatal diagnosis testing or after the birth of the baby.

The motivation for pursuing parental testing can vary, as is the case in this article where such testing becomes a requirement when a couple opts for surrogacy in Russia. In this scenario, the couple must establish their parentage to facilitate bringing their baby home from Russia. Initially, a paternity discrepancy was observed, which could have resulted from semen sample mix-up, contamination in the IVF clinic, or congenital chimerism.

Analysis showed the father was a tetragametic chimeric. Tetragametic chimerism may occur when two embryos fuse at a very early stage of development resulting in an organism containing two genetically different cell lines. Only by analyzing other samples collected from the patient, including semen from the IVF clinic, were the scientists able to confirm his tetragametic status and prove the biological paternity.

This is not the first article to report this type of occurrence and demonstrates the need to put chimerism as a potential explanation. The incidence of tetragametic chimerism is difficult to estimate as it's likely most cases are undiagnosed.

NEWSLETTER

Community Content:

SMC

Single Motherhood by Choice is a long standing organization for those who are unpartnered and either have children or are thinking about having them. There are blog posts and peer support available. SART has a recent podcast about the organization.

Modern Reproduction Content:

There are informational pages on Modern Reproduction that dive into a genetic testing option in more detail. The intention is for the general population to have a place to learn about the technology prior to having to make a decision about it. The informational pages are introductions to the testing options. **Carrier screening** is one of the 4 informational pages at this time.