Teratogenic effect of hydrosalpinx fluid in humans?

Dear Sir,

We read with great interest the manuscript by Chan et al. (2003) examining the teratogenicity of hydrosalpinx fluid (HF) using a whole rate embryo culture model. Mechanisms of HF formation and its effects on IVF and embryo transfer outcome have been recently reviewed (Ajonuma et al., 2002). Previous studies were conducted during early embryo development when HF that refluxed into the uterine cavity may have had direct contact with the developing embryo. We fully agree that it is also important to look at the HF effects on the later part of fetal development, but the method adopted by Chan et al. (2003) may not be applicable to the scenario in utero.

During in-vivo development, the fetus does not have direct contact with the uterine environment even in the event of HF retrograde spillage, as it is directly cushioned by the amniotic fluid, surrounded by the amniotic membrane and the chorionic membrane. It is not clear in the article by Chan et al. (2003) whether the amniotic membrane had been ruptured prior to in-vitro culture of embryos. If the amniotic membrane had been ruptured, the fetus would be exposed to a very high concentration of HF, which would be markedly different from the in-vivo scenario. Even if the amniotic membrane was not ruptured, it is still difficult to extrapolate the results to the situation in humans. Embryos were selected from those rats at gestational day 9.5, which is about half the gestation period in rats, but by that time organogenesis would be fully completed in humans. In humans, the amniotic cavity, yolk sac and chorionic membranes start to form by the second week of gestation. Somites start by the third week, and by the fifth week 42–44 pairs of somites have been completed; however, this is not the situation in rats.

Results of our study on the effects of HF were also incorrectly interpreted by Chan et al. (2003), who quoted that only three of 15 HF samples demonstrated toxicity towards sperm. We actually reported that three out of 15 HF samples had survival indices >85%, i.e. non-toxic to sperm (Ng et al., 2000).

References


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