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Updated version of ROSI technique results in birth of 14 babies

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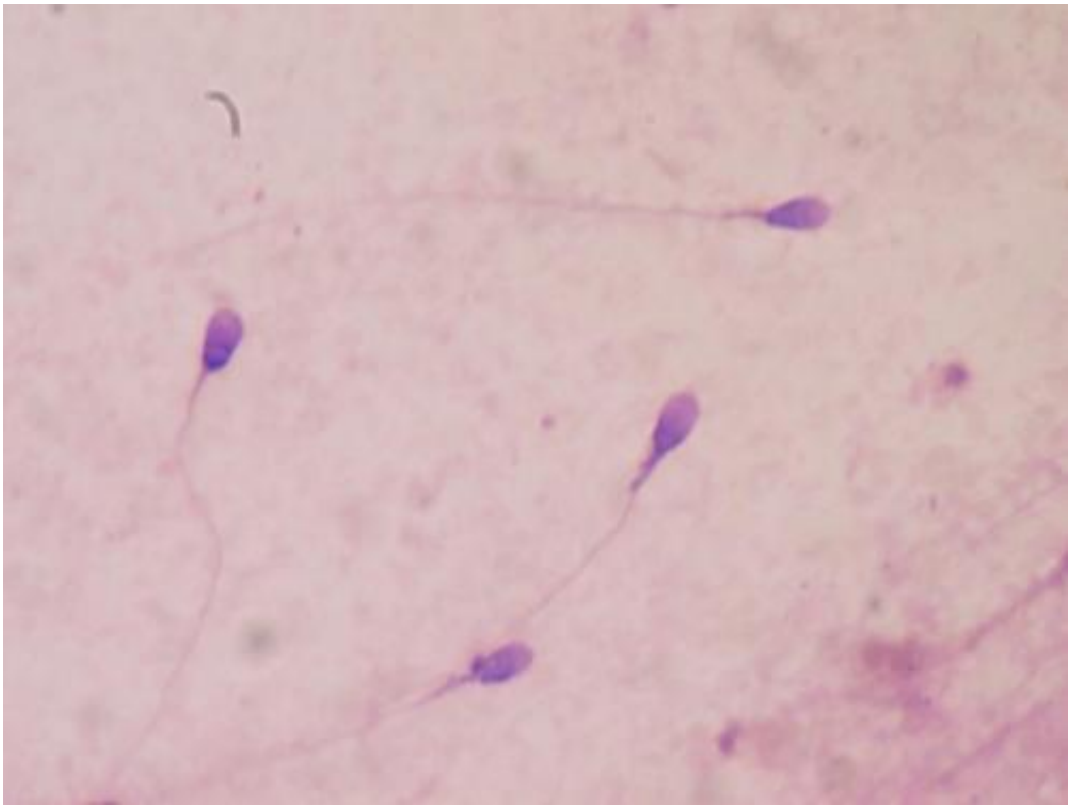

Human sperm stained for semen quality testing in the clinical laboratory. Credit: Bobjgalindo/Wikipedia

A team of researchers in Japan has developed an updated form of round spermatid injection (ROSI) and has used it to help 12 men considered to be infertile, produce 14 children. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes how they

improved the technique and why they believe it should be a viable option as a last resort for some men considered to be infertile.

ROSI involves physically removing sperm cells that have not fully developed, i.e. spermatids—they have no tail and are round—and then injecting them directly into an egg. The technique is not new, researchers in several countries studied the viability of the procedure back in 1990s, but most agreed that it was not worth pursuing because of very low success rates and fears that babies born via the technique might suffer physical or mental disabilities. Because of that, some countries such as Great Britain have banned the use of it in fertility clinics. Prior research has shown that approximately 30 percent of infertile men are able to produce spermatid, though it is not clear what prevents them from developing to maturity.

One of the problems researchers encountered twenty years ago, was in finding the spermatids inside the body—the researchers with this new effort used computer assisted identification techniques, which allowed them to harvest 76 of the cells and then to inject them into electrically stimulated eggs (to cause them to become active) which were then placed in the mothers' womb. That led to the birth of 14 children, a success rate of just 16 percent, but far ahead of the zero chance the men would have had without the procedure.

The research effort ran over the years 2011 to 2014 and to date, the team reports that none of the children born have shown any physical or mental impairments—they note also that to date, none of the children born in the 90s using the technique have developed impairments either. They are not suggesting, however, that they believe the procedure is risk-free—they believe it could be used as a last resort for men who have no other options.

More information: Atsushi Tanaka et al. Fourteen babies born after

round spermatid injection into human oocytes, *Proceedings of the National Academy of Sciences* (2015). DOI: 10.1073/pnas.1517466112