

# Micro-TESE surgery results in SA's first successful pregnancy

Microdissection testicular sperm extraction (Micro-TESE) surgery, used to retrieve sperm cells from a man with testicular failure, resulted in the first successful pregnancy of its kind in South Africa.



Dr Amir Zarrabi

Stellenbosch University (SU) urologist and male infertility expert, Dr Amir Zarrabi, performed the intricate on a 38-year-old male patient with non-obstructive azoospermia (NOA), also known as testicular failure. Men with this condition have no sperm in their ejaculate as a result of severely impaired or absent sperm production. Micro-TESE surgery extracts sperm directly from the testicle, and is a last resort for men who would otherwise not be able to be biological fathers.

After extraction, the sperm can be used for intracytoplasmic sperm injection (ICSI) – a process used to inject a single sperm into an egg cell (in the laboratory), in order to achieve conception. It can take place immediately following microsurgical sperm extraction, or alternatively the sperm can be cryo-preserved (freeze-stored) until the couple is ready to undergo ICSI. Professor Thinus Kruger and his team at the Aevitas Fertility Clinic in Cape Town performed the ICSI procedure on this patient.

“NOA affects approximately 1% of the male population and is an important cause of male infertility,” says Zarrabi, the only surgeon in South Africa who performs Micro-TESE surgery. “NOA is commonly caused by genetic abnormalities, undescended testicles, chemotherapy or infections such as mumps that spread to the testicles.”

## Complicated process

Sperm cells are produced inside a network of thin tubes within the testicle. In order for sperm to be expelled in ejaculate, each tube has to produce at least three mature sperm cells. Sixty percent of men with NOA actually have sperm present in their testicles, but the quantity is below the threshold necessary for the sperm to “spill over” into the ejaculate. With Micro-TESE surgery, the testicle is meticulously dissected and searched for tubes that might contain sperm. These sperm-containing tubes are usually dilated.

“It is a complicated process and it can be difficult to identify tubes that may contain sperm,” says Zarrabi, who performs this procedure with a surgical microscope. “In most men we retrieve only a few sperm cells – between five and 20. Normally a man produces hundreds of millions of sperm cells.”

It is not always possible to extract sperm, and the success rate of this procedure is between 30% and 60%.

## **Managing expectations**

“Couples are counselled before the procedure to explain their chances of success and to manage their expectations. Even if we do retrieve healthy sperm, other factors related to ICSI and the normal risks of pregnancy also come into play,” explains Zarrabi.

Micro-TESE surgery was first performed in the USA in 1999, and Zarrabi was the first surgeon to perform the procedure in South Africa in 2014. In 2016, he studied under Dr Peter Schlegel, the American urologist from Weill Cornell Medical College in New York who developed the procedure.

“This opens up a world of new possibilities for many infertile couples in South Africa who previously had no chance of having a child of which they are both biological parents,” says Zarrabi. His work on Micro-TESE surgery forms part of his PhD research on male infertility in South Africa.

**Source:** Stellenbosch University

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