Microdissection TESE is a procedure performed for men who have both a sperm production problem and are azoospermic. Microdissection TESE is performed in the operating room with general anesthesia under the operating microscope. Micro TESE is carefully coordinated with the female partner’s egg retrieval, and is typically performed the day before egg retrieval. This allows for each partner to be there for the other’s procedure. Patients frequently have donor sperm backup in the case that sperm are not found in the male partner. Micro TESE has significantly improved sperm retrieval rates in azoospermic men, and is a safer procedure since less testicular tissue is removed. Patients often cryopreserve sperm collected during this procedure for future IVF/ICSI. Microdissection procedure is relatively safer than the conventional testis biopsy and improves the sperm retrieval rate significantly in patients with nonobstructive azoospermia.

Microdissection TESE involves wide incision of tunica albuginea to allow extensive visualization of testicular tubules. Ramasamy R et al. 2005

It is important to understand that the microscope utilized in the operating room does not have sufficient magnification to see sperm but instead just helps sort out which tubules within the testis are more likely to contain sperm. Small amounts of tissue are sent to the IVF laboratory during the course of the procedure so that they can assess whether sufficient numbers of sperm have been harvested. A more powerful microscope is used by the andrology / IVF laboratory to evaluate this tissue. Repeated biopsies from one or both testes are obtained until sufficient sperm has been harvested for that IVF cycle. Extra sperm may be harvested to preserve for future cycles of IVF in case the current cycle is unsuccessful or the couple desires more children in the future. This procedure can take as long as four hours depending upon how quickly sperm are found.

While the husband is being evaluated prior to the actual aspiration of sperm, the female partner is usually prepared for IVF and ICSI. The success of pregnancy from this procedure is reported to be 45%–50% in selected IVF centers. It is a complex process, requiring significant manipulation of the human gametes (eggs and sperm), but one which offers a previously sterile couple the chance of establishing a pregnancy using their own genetic material.