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Testicular Sperm Extraction (TESE) and Intracytoplasmic Sperm Injection (ICSI): The Treatment of Choice For Men Who Do Not Produce Sperm In The Ejaculate

In Vitro Fertilization (IVF) is the treatment of choice for moderate or severe male infertility. Even men who have had a previous vasectomy are far better off with Intracytoplasmic Sperm Injection (ICSI) done in combination with Testicular Sperm Extraction (TESE), than with surgical vasectomy reversal (see below).

Although always a treatment of choice for male infertility, it was not until the relatively recent introduction of ICSI that IVF became just as successful when applied in cases of male infertility, as for female related causes. ICSI is a procedure where fertilization is achieved through the direct injection of a single sperm into the cytoplasm of each mature egg. TESE, on the other hand, is a procedure involving the introduction of a thin needle directly into the testicle(s), under local anesthesia or conscious sedation, without making a skin incision. Hair-thin specimens of testicular tissue are removed (usually under local anesthesia) in the space of 15 to 30 minutes. Sperm are extracted from the tissue and each egg is injected with a single sperm using the ICSI technique. It may be necessary to perform several attempts in each testicle until viable sperm are positively identified under the microscope. As soon as this is accomplished, the procedure is terminated. If necessary a small suture is placed into the scrotal skin and an ice pack is applied onto the scrotum.

Sperm can be retrieved in excess of 90% of cases. Usually in those cases where sperm are not retrieved, the male has oligospermia (low sperm count) or intra-testicular pathology. If sperm are recovered, the fertilization rate is 50-60% when TESE/ICSI is performed in IVF centers of excellence. The anticipated birth rate (ABR) per TESE/ICSI procedure performed in cases where the woman is <40yrs is about 50% (i.e., no different than conventional IVF birthrates in women of comparable age).

TESE is simple, relatively low-cost, safe, and virtually pain-free. Most men can literally take off a few hours for the procedure and return to normal activity straight away. HOWEVER, IT IS ESSENTIAL THAT THE PATIENT NOT UNDERTAKE HEAVY LIFTING OR STRENUOUS ACTIVITIES FOR ABOUT 72 HOURS AFTER THIS PROCEDURE, BECAUSE THIS CAN SIGNIFICANTLY INCREASE THE CHANCES OF A SCROTAL HEMATOMA. If there is any evidence of significant scrotal swelling, severe pain or fever in the several days after the procedure, these symptoms should be reported. Aside from the remarkable success rates with TESE/ICSI is the fact that, unlike vasectomy reversal, the procedure allows the man to retain his vasectomy for future contraception.

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This handout is intended as an aid to provide patients with general information. As science is rapidly evolving, some new information may not be presented here. It is not intended to replace or define evaluation and treatment by a physician.