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Testicular sperm aspiration (TESA /TESE) Technique

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ABSTRACT

Many men are unable to ejaculate any sperm due to damaged tubes in their testicles or some other genetic problem and hence need a surgical sperm collection technique to enable intracytoplasmic sperm injection (ICSI) for in-vitro fertilization (IVF)Testicular sperm aspiration is used to collect sperm. Methodology fine needle is used for aspiration of sperm minimal invasive procedure.

Key words: Testicular sperm analysis, Intracytoplasmic sperm injection

INTRODUCTION

Many men are unable to ejaculate any sperm due to damaged tubes in their testicles or some other genetic problem and hence need a surgical sperm collection technique to enable intracytoplasmic sperm injection (ICSI) for in-vitro fertilization (IVF) to father a child. Testicular sperm aspiration (TESA) is a common IVF reproductive technology used to surgically collect sperm. However, the nature of infertility that a man suffers from should be carefully determined before choosing this kind of method and only after proper tests are conducted, should the surgical sperm collection procedure be pursued. The TESA procedure uses a needle connected to a syringe that is sent into the testicle through the scrotum to collect the fluid.

Patients suffer blockage in the epididymis close to the testis either due to a surgery, an infection or one carried over from birth while others may suffer a blockage within the ducts of the testes. The extraction of testicular sperm is recommended for such patients after proper examination. The process is simple and doesn't take long since many patients have 'pockets' of sperm producing tissue within their testicles. Our TESA success rates are high and our method is therefore able to pick up such 'pockets' of tissue more efficiently than the older technique of open testicular biopsy. The process proves why the sperm need not mature to pass through

the epididymis in order to fertilize an egg. However, such testicular sperm need ICSI to cover up their lack of maturity as it is important for egg fertilization.

Procedure To Collect Testicular Sample

The procedure to collect sperm from the testes may either be testicular sperm aspiration (TESA) or testicular sperm extraction (TESE). TESA samples are obtained with a wide-bore needle pushed percutaneously into the testis. TESE is an open technique that removes several pieces of testicular tissue. TESA samples are evaluated for motile or immotile spermatozoa with a stereomicroscope. Using fine-needle dissection, the sperm are identified and separated from the seminiferous tubules and surrounding tissue. The majority of these sperm are immature, although some are motile or "twitching." TESE samples contain a large amount of cellular debris. Finding sperm in the testicular tissue can be laborious and can take several hours to process depending on the degree of sperm production and the etiology of testicular failure. There are multiple processing methods that may be used to identify the sperm Typically the testicular tissue is evaluated under a stereomicroscope to identify seminiferous tubules and remove blood clots. Following identification, the testicular sample is processed by dispersion of the tubules through mechanical mincing and/or enzymatic digestion. Once homogenized, the sample is evaluated using the inverted microscope (400× magnification) to identify the presence of sperm. The sperm are freed from the seminiferous tubules and other debris by dissection.

Testicular sperm aspiration Technique (TESA/TESE)

The procedure is performed after spermatic cord and local skin block. The procedure is performed under local anaesthesia . A TESA uses a large bore angio-catheter connected with extension tubing to a syringe. Suction is applied through a syringe to extract testicular tissue. This can be performed multiple times following the lobular planes of the testicle allowing for adequate tubule removal. The advantage of TESA is that it utilizes a minimally invasive approach allowing for improved patient recovery. There is no need to close the scrotal skin or tunica albuginea as this will close in it's own. A TESE uses an incision through the scrotal skin, dartos,

tunica vaginalis and tunica albuginea. This allows for easy removal of testicular tissue but does require closure of all the above listed layers with absorbable suture.

CONCLUSION

Many men are unable to ejaculate any sperm due to damaged tubes in their testicles or some other genetic problem and hence need a surgical sperm collection technique to enable intracytoplasmic sperm injection (ICSI) for in-vitro fertilization (IVF). Testicular sperm aspiration is used to collect sperm. Fine needle is used for aspiration of sperm. TESA is a minimally invasive approach allowing for improved patient recovery soon.

REFERENCE

1) Agarwal, etal, 2015conducted the study on , A unique view on male infertility around the globe ,Reprod Biol Endocrinol., 2015; 13: 37 ,Scopus (1135)

2) Palermo, etal conducted the study on , Pregnancies after intracytoplasmic injection of a single spermatozoon into an oocyte.Lancet, 1992; 340: 17-18, Scopus (2971)

3) Zini A, etal conducted the study on, Use of testicular sperm for ICSI in oligozoospermic couples: how far should we go, Hum Reprod. 2017; 32: 7-13

4) Mehta A ,et al, conducted the study on , Use of testicular sperm in nonazoospermic males, Fertil Steril. 2018; 109: 981-987, Scopus (13)
5) Ortega C, et al, conducted the study on ,Absolute asthenozoospermia and ICSI: what are the options, Hum Reprod Update. 2011; 17: 684-692, Scopus (96)
6) Esteves SC, et al, conducted the study on ,Comparison of reproductive outcome in oligozoospermic men with high sperm DNA fragmentation undergoing intracytoplasmic sperm injection with ejaculated and testicular sperm, Fertil Steril 2015; 104: 1398-1405,Scopus (170)

7) Hauser R, et al., conducted the study on, Virtual azoospermia and cryptozoospermia–fresh/frozen testicular or ejaculate sperm for better IVF outcome, J Androl , 2011; 32: 484-490, Scopus (60)
8) Abhyankar N, etal conducted the study on, Use of testicular versus ejaculated sperm for intracytoplasmic sperm injection among men with cryptozoospermia: a meta-analysis. Fertil Steril. 2016; 105: 1469-1475, Scopus (52)

9) Shin DH, Turek PJ, conducted the study on , Sperm retrieval techniques ,Nat Rev Urol. 2013; 10: 723-73, Scopus (48)
10) Bernie AM, etal, conducted the study on, Comparison of microdissection testicular sperm extraction, conventional testicular sperm extraction, and testicular sperm aspiration for non obstructive azoospermia: a systematic review and meta-analysis, Fertil Steril. 2015; 104: 1099-1103, Scopus (186)

11) Cooper TG, et al, conducted the study on, World Health Organization reference values for human semen characteristics. Hum Reprod Update. 2010; 16: 231-245, Scopus(1915)

12) Gorgy A, et al., conducted the study on, The efficacy of local anaesthesia for percutaneous epididymal sperm aspiration and testicular sperm aspiration. Hum Reprod. 1998; 13: 646-650, Scopus (43)

13) Schlegel PN, conducted the study on ,Testicular sperm extraction: microdissection improves sperm yield with minimal tissue excision.Hum Reprod 1999; 14: 131-135, Scopus (655)

14) Chan PT, conducted the study on, Non obstructive azoospermia., Curr Opin Urol. 2000; 10: 617-62, Scopus (48)

15) Alrabeeah K, et al., conducted the study on ,Sperm retrieval outcomes with microdissection testicular sperm extraction (micro-TESE) in men with cryptozoospermia ,Andrology. 2015; 3: 462-466, Scopus (22)