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## **A Case of Primary Infertility treated with ICSI and TESA**

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ABSTARCT

### **BACKGROUND:**

Infertility is defined as the failure to conceive after 1 year of unprotected intercourse. It approximately affects around 15% of couples in the reproductive age group. A lot of improvements have been made in the treatment of fertility and it has made it possible for a lot of patients to conceive with medical assistance. Women with pathologies in the fallopian tube can conceive using IVF while men who have significantly low sperm counts or congenital abnormalities of the vas but have sperm in the testis can use ICSI.

### **CASE DESCRIPTION:**

A couple, husband 38 years, wife 34 years, came with the complaint of Primary Infertility. They were married for 4 years and were not able to conceive a child. Investigations revealed that the husband had Obstructive Azoospermia and treated with ICSI(Intracytoplasmic sperm injection) + TESA(Testicular sperm aspiration) /TESE (Testicular sperm extraction ) along with required media.

### **CONCLUSIONS:**

This case report gives a description about the prevalence of infertility and describes the method of treatment options for infertility.

**KEYWORDS:**

Infertility, Azoospermia, IVF, ICSI, TESA, TESE

CASE REPORT:

**CLINICAL HISTORY:**

A couple, husband 38 years, wife 34 years, came with the complaint of Primary Infertility.

They were married for 4 years and were not able to conceive a child.

**EXAMINATION AND INVESTIGATIONS:**

1. Husband
  - No Pallor
  - No Icterus
  - No Cyanosis
  - No Clubbing
  - No Lymphadenopathy
  - No Edema
  - Past Medical History – NAD
  - Past Surgical History – NAD
  - Allergies – NAD
  - Trauma History – NAD
  - Addictions – NAD
  - GPE – CVS, RS, PA – NAD
  - Testes – R (N) L (N)
  - Epididymis – R (N) L (N)

- Vas Deferens – R (N) L (N)

- Varicocele – Nil

## 2. Wife

- General Build – Normal

- No Pallor

- No Icterus

- No Cyanosis

- No Clubbing

- No Lymphadenopathy

- No Edema

- Weight – 54 kg

- Height – 5'3"

- Bp – 100/60 mm hg

- Bowel and Bladder – Regular

- GPE – CVS, RS, PA – NAD

- Menstrual Cycle – Regular

- LMP – 08/05/19

- Obstetric Score – G0 P0 L0 A0

- Breast Examination – Normal

- Areola Examination – Normal

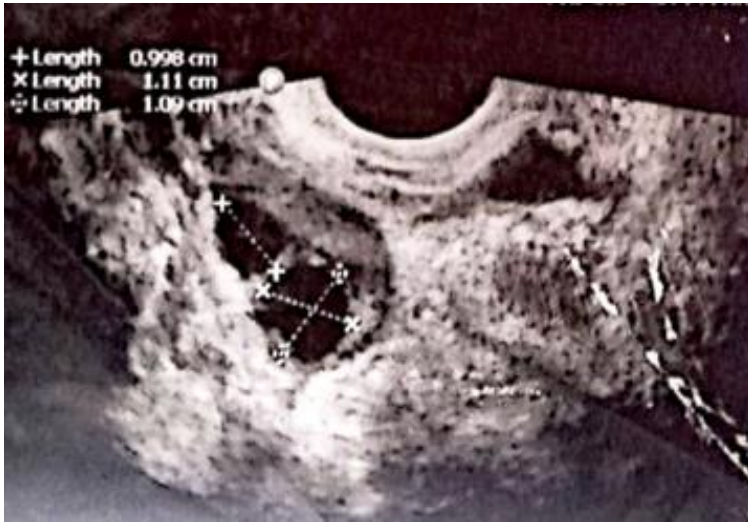
- Local Examination (Per Speculum) – Vaginal Vault and Cervix – NAD

1. Husband

- Serum FSH, LH, Prolactin – Normal
- FNAC – Mature sperms seen in both testes
- Semen examination – Azoospermia
- Semen fructose – present – indicating obstruction above the seminal vesicles

2. Wife

- Thyroid, CBC, Blood Sugar, LFT, KFT, Creatinine – NAD
- TVS (Trans vaginal sonography)- Follicle Monitoring (Baseline Scan)
  1. Day 2 – Uterus is adenomyotic, Endometrial lining is thin, Right Ovary – Few antral follicles, Left ovary – few antral follicles, POD – No free fluid seen
  2. Day 8 – Uterus is normal in size, Endometrial lining is triple, Right Ovary- 2 to 3 dominant follicles, Left ovary -2 to 3 dominant follicles
  3. Day 10 – Uterus is adenomyotic, endometrial lining is triple, Right Ovary – 2 to 3 dominant follicles, Left ovary -2 to 3 dominant follicles, POD – No free fluid seen in POD
  4. Day 11 – Uterus is adenomyotic, endometrial lining is triple, Right Ovary – 2 to 3 dominant follicles, Left ovary -2 to 3 dominant follicles, POD – No free fluid seen in POD)
  5. Day 14 – Uterus is adenomyotic, endometrial lining is triple, Right Ovary – 2 to 3 dominant follicles, Left ovary -2 to 3 dominant follicles, POD – No free fluid seen in POD)



**FINAL DIAGNOSIS:**

Primary infertility secondary to obstructive azoospermia.

Patient was treated with ICSI(Intracytoplasmic sperm injection) + TESA(Testicular sperm aspiration) /TESE (Testicular sperm extraction ) along with required media

**DISCUSSION:**

ICSI – Intracytoplasmic sperm injection is an in vitro fertilization (IVF) procedure in which a single sperm cell is injected directly into the cytoplasm of an Ovum (Oocyte).



## ICSI Micromanipulator Machine

### STEPS

1. Ovum/ Oocyte Pickup



2. TESA/TESE
3. ICSI
4. CO<sub>2</sub> Incubator
5. Embryo Transfer
6. Pregnancy

#### Procedure

##### 1) Ovum Pickup

Day 2 (of the menstrual cycle) – A baseline scan (TVS) is to be done to confirm the absence of cysts and to check the Oestrogen Levels which should be between 50 to 75 pg.

On this day – Recombinant FSH should be started for 3 days (Day 2, 3, 4) for recruitment of increased follicles from the ovary.

Six to eight mature graafian follicles are required for which Controlled Ovarian Hyperstimulation (COH) is performed. For this procedure increased doses of FSH is given which causes superovulation.

Day 5- HMG as well as an Antagonist to GnRH should be administered.

HMG – for growth in size of the follicles

Antagonist to GnRH – The side effect of administering FSH is increased Oestrogen which causes premature luteinization (LH surge – at 6<sup>th</sup> Day). So to prevent this GnRh antagonist is administered. (On 5<sup>th</sup> day – the optimum size of the follicle is reached that is 17 to 18 mm but it is not mature)

Day 10 to 14 – When the size of the follicle is optimum (usually around 10th to 14th day), antagonist to GnRH and HCG is administered so that Luteinization takes place without rupturing the follicle.

Within 36 hours of luteinization of the follicle Ovum Pickup should be done or else follicle will rupture followed by denudation of the ovum (removal of zona pellucida – making it easy for the sperm to penetrate). This ovum should be left for 2 hours.

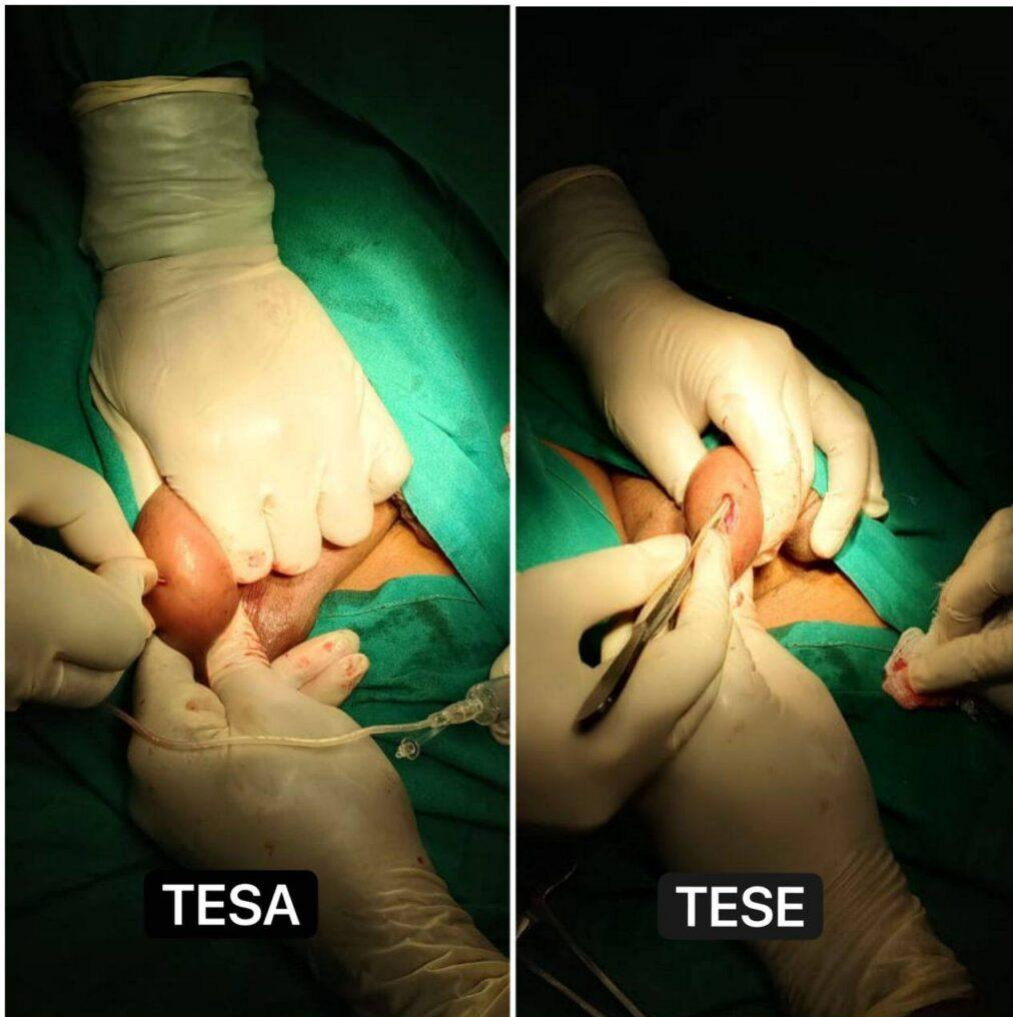
## 2) TESA/TESE

### TESA

Testicular sperm aspiration (TESA) is a procedure performed for men who are having sperm retrieved for IVF/ICSI. It is done with local anaesthesia. A needle is inserted in the testicle and sperms are aspirated.

### TESE

Testicular sperm extraction (TESE) is a procedure to collect sperm directly from your testes. A cut is made and then seminiferous tubules are pulled with the help of forceps and cut. It's done if there are no sperm found in your semen upon doing TESA.



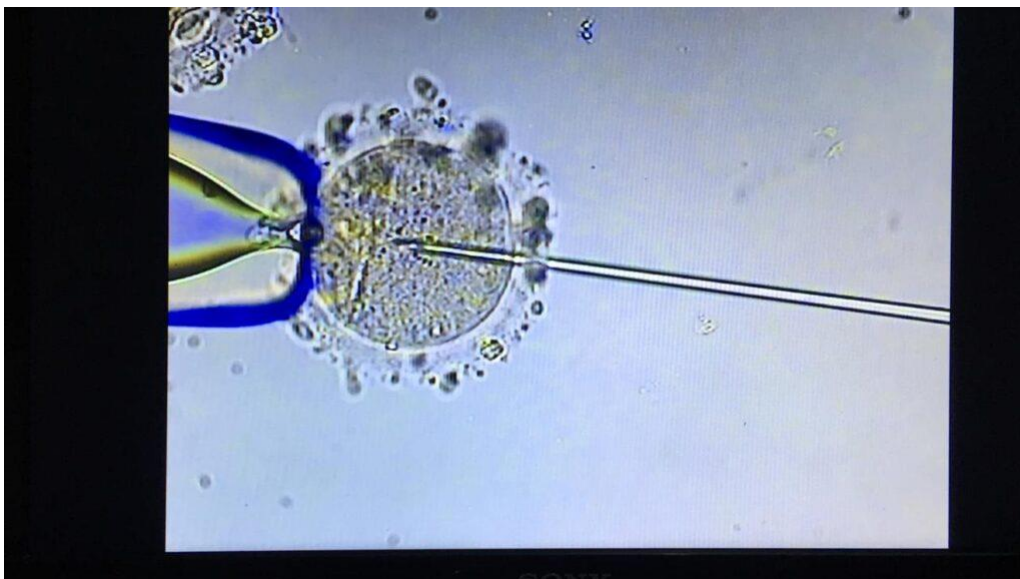
**A. TESA B. TESE**

### 3) ICSI

The Ovum picked up from the wife is held by the holding pipette and the Sperm extracted from Testes of the Husband through TESA/TESE gets loaded in the micromanipulator. The tail of the sperm is cut and injected into the ovum.



**Holding Pipette(left) and Injecting Pipette(right) of the ICSI Micromanipulator. Petri Dish – Ovum and Sperm.**



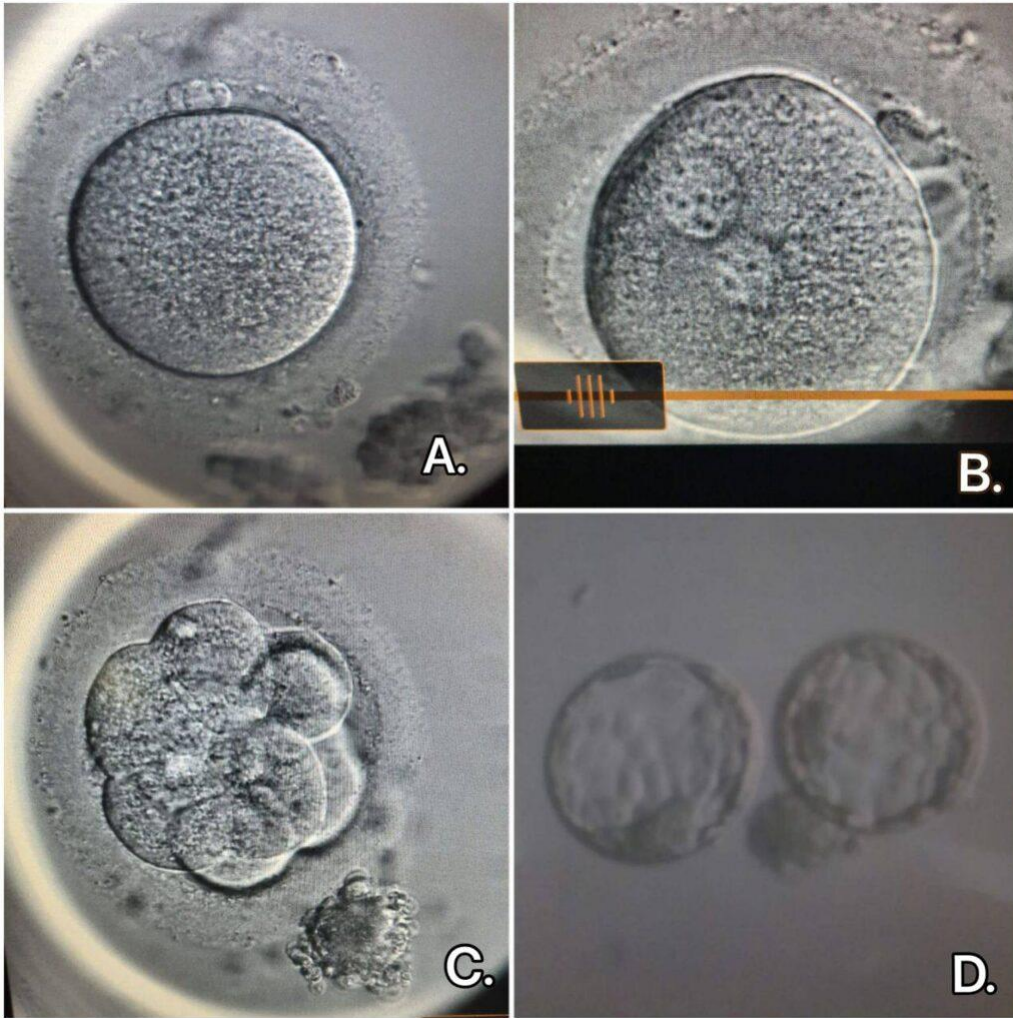
## **ICSI**

### **4) CO<sub>2</sub> Incubator**

The embryo is transferred into a CO<sub>2</sub> incubator and is kept there for 5 days till it reaches the blastocyst stage.



CO2 Incubators

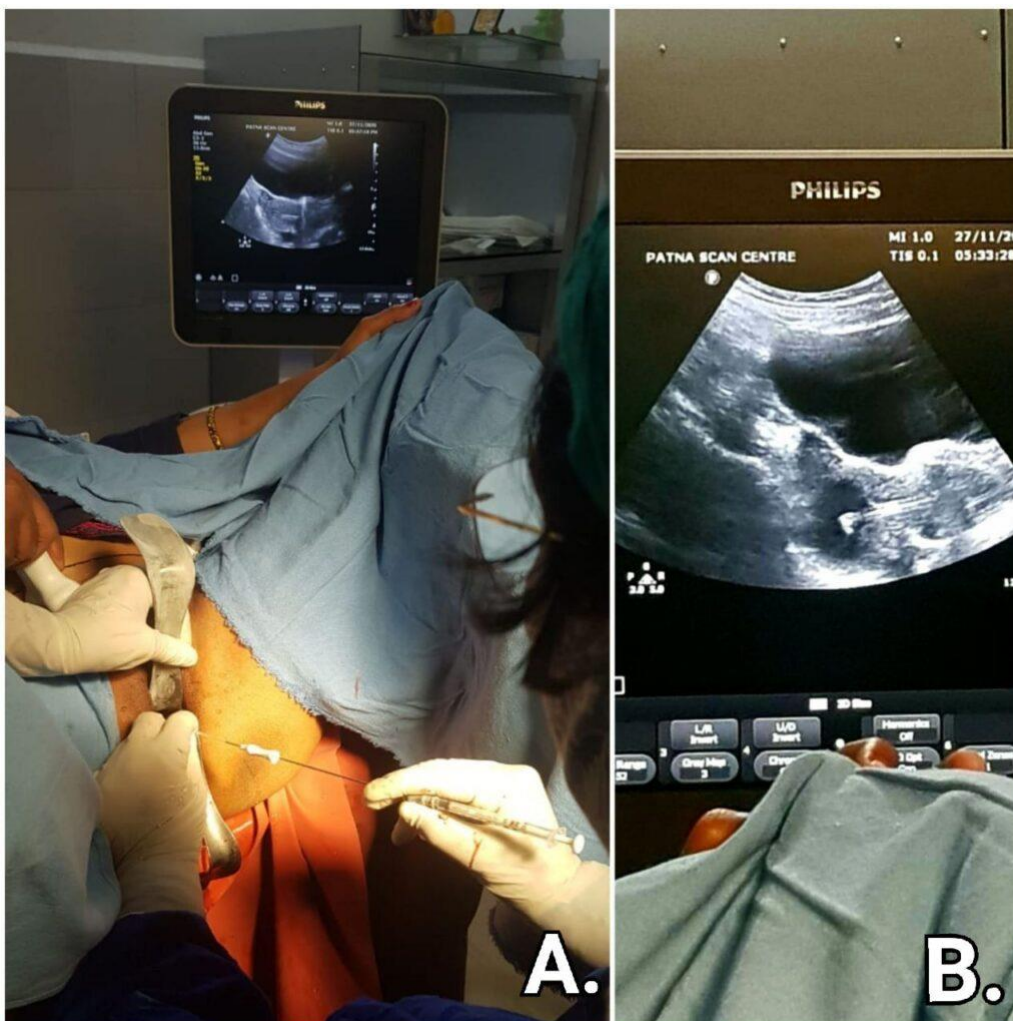


**A. Compaction B. Pro Nuclei C. Morula Stage D. Blastocyst Stage (as seen inside the CO2**

**Incubator)**

5) Embryo Transfer

On the 6th day the embryo is transferred from the CO2 Incubator, through embryo catheter under trans abdominal sonography into the uterus of the woman (surrogate if required) and luteal phase support is provided.



**A. Embryo Transfer B. USG (TAS) of the transfer process**

**CONCLUSION:**

We reviewed a case of a 38 year old husband and a 34 year old wife who presented with primary infertility. The report illustrates the prevalence of infertility and the options to treat and provide an option to the couple to start a family of their own.

**ACKNOWLEDGEMENTS:** None

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