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Histopathological Patterns Of Testicular Biopsy In Male Infertility A Prospective Study In Our Institution

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I. Introduction

INTRODUCTION:

- Infertility is defined as inability to conceive after 12 months of regular unprotected intercourse.
- Male factor- 50%
- Basic Male Infertility Evaluation requires a Comprehensive History and physical Examination along with Semen Analysis.
- A Testicular Biopsy can provide valuable information to the urologist by further categorizing men with azoospermia for purposes of prognosis and treatment.
- Knowledge of the specific nature of testicular pathology is of primary importance because other clinical parameters, such as serum follicle-stimulating hormone and testicular volume, do not reliably discriminate between different testicular alterations.

AIM:

- To identify and categorize various pathological patterns seen in testicular biopsies with infertility and to analyze the predominant pattern in our region.

MATERIALS AND METHODS:

- Prospective Study
- August 2011- May 2012
- Testicular Biopsies from Infertile Men with Azoospermia or Oligospermiaanalysed.
- 56 Cases
- Mean age- 31 years(22-40)
- Cases for testicular biopsy were selected after taking detailed clinical history, thorough clinical examination and semen analysis.
- The detailed clinical history including age, the duration of active marriage life, duration of infertility, sexual relationship, frequency of coitus, premature ejaculation, psychological status were noted.
- History regarding alcohol consumption, smoking and other substance abuse was also inquired into.
- Past history of infection like mumps, measles, pneumonia, sexually transmitted diseases (STD), tuberculosis and any surgical procedure was also asked.
- Secondary sex characters and genital organs examination was done.
- The systemic examination to exclude anemia, tuberculosis, diabetes mellitus was also carried out.

CLINICAL CHARACTERISTICS:

- Clinically normal - 40
- Varicocoele - 8
- Small testes - 8

INDICATIONS:

- Testicular biopsy is generally reserved for men with azoospermia.
- When 2 sequential sperm counts yield less than 20 million sperm per millilitre of Seminal fluid
- Patients had either unilateral or bilateral testicular biopsies under local anaesthesia.
- Bilateral-8;Unilateral-48
- Biopsy samples once taken were immediately placed into Bouins fixative and sent to the Department of Pathology, where all testicular biopsies were processed , stained with hematoxylin and eosin and examined histologically by light microscopy.
- In the interpretation of testicular biopsy, attention was paid to the size, shape and population density of seminiferous tubules, the state of basement membrane, various stages of spermatogenesis and components of the interstitial tissue.

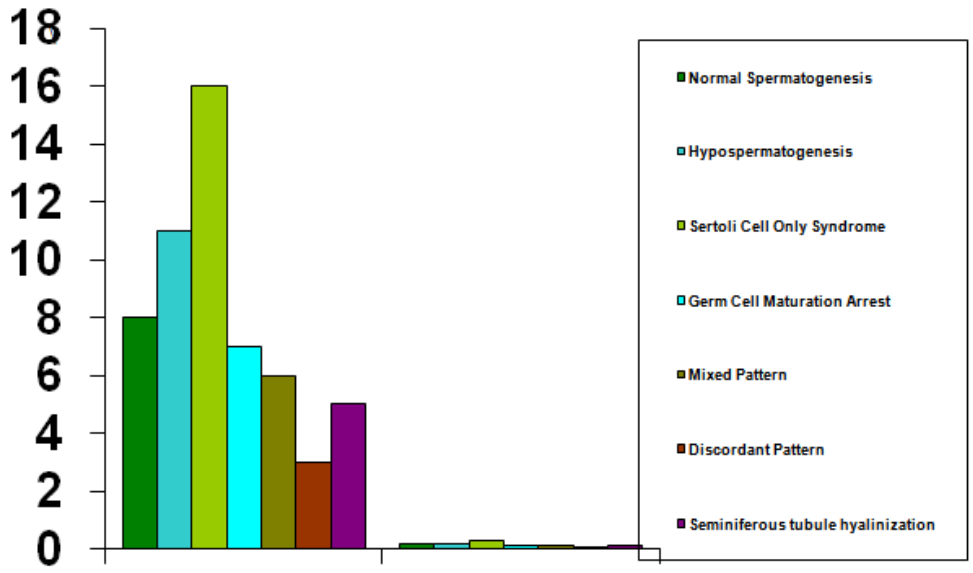
HISTOLOGICAL CLASSIFICATION:

- Normal Spermatogenesis
- Hypospermatogenesis
- Sertoli Cell Only Syndrome
- Germ Cell Maturation Arrest
- Mixed Pattern
- Discordant Pattern
- Seminiferous Tubule Hyalinization

	Azoospermia N= 44	**Oligospermia N = 12**
Normal spermatogenesis	**5**	**3**
Hypospermatogenesis	**7**	**4**
GCMA	**2**	**5**
SCOS	**15**	**1**
Seminiferous tubule hyalinization	**5**	**-**
Discordant	**3**	
Mixed	**3**	**2**

II. Summary Of Results

HISTOLOGICAL PATTERN	No of pts	%
Normal Spermatogenesis	8	14.28%
Hypospermatogenesis	11	16%
Sertoli Cell Only Syndrome	16	28.57%
Germ Cell Maturation Arrest	7	12.5%
Mixed Pattern	6	9%
Discordant Pattern	3	5%
Seminiferous tubule hyalinization	5	8.9%

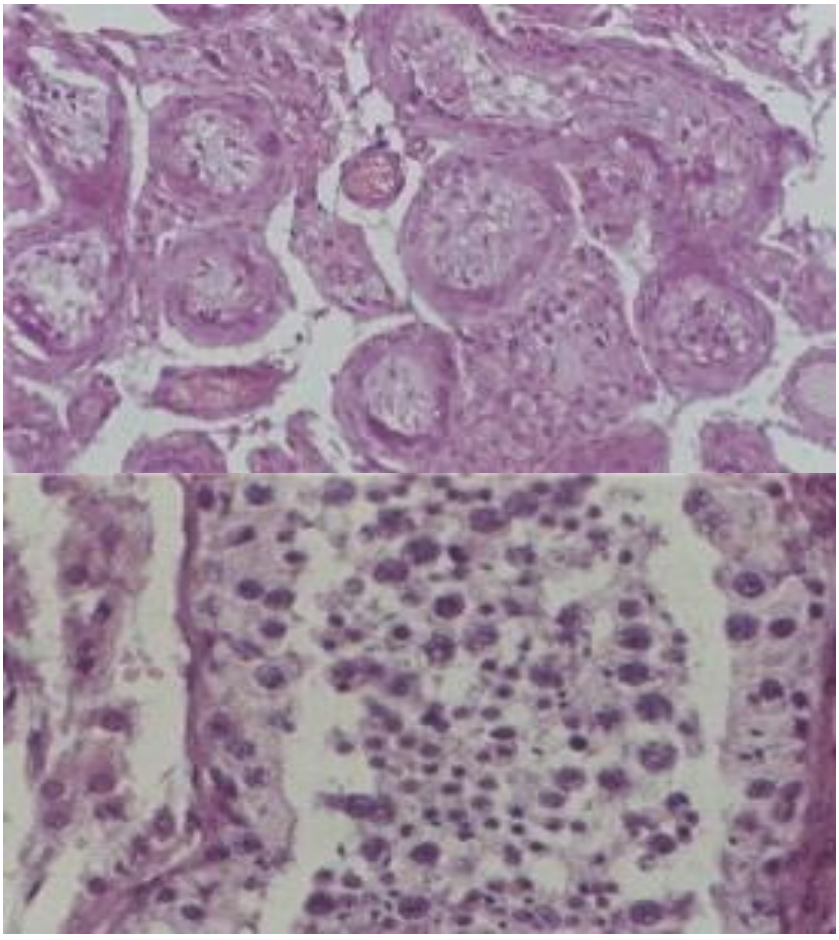


III. Discussion:

- The incidence of male infertility and the subsequent histological findings in testicular biopsies differ significantly from one part of the world to another due to several underlying etiological factors including social habits, genetic causes and environmental conditions such as underlying infections, chemicals, radiation and exposure to heat.

CAUSES OF MALE INFERTILITY:

- Pre Testicular
- Testicular
- Post –Testicular
- For men with azoospermia,testicular biopsy is done to determine if a blockage is present or if primary testicular failure is the cause.
- With many azoospermic men, in vitro fertilization/intracytoplasmic sperm injection has become the major reproductive treatment option if testicular sperm can be retrieved.
- The present study shows 78.5 % of the cases (44 out of 56 patients) were azoospermic and 11.3 % of the azoospermia were associated with normal spermatogenesis.
- 21.41 % of cases (12 out of 56 patients) were oligospermic and Germ Cell Maturation Arrest was the commonest histological finding among oligospermics.
- In our study , Sertoli Cell Only Syndrome was the commonest pattern observed, followed by Hypospermatogenesis and Germ cell Maturation Arrest in Azoospermic patients.
- In Oligospermicpatients,GCMA is commonest pattern followed by Hypospermatogenesis.



IV. Conclusion:

- This study outlines the different patterns of testicular biopsy in cases of male infertility encountered in our region and identifies SCOS as the most common pattern of spermatogenic defect among the different studied patterns.

- The presence of discordant patterns(5%) among right and left testis supports the need for bilateral biopsies in selected cases.

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