

An Analysis of Endometrial Biopsy in the Evaluation of Infertility A Study In Rims Ranchi

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ABSTRACT:

Background: Female Infertility is a real problem to the development of a couple who cannot conceive in a natural way Endometrial biopsy is safe, well tolerated and productive of consistent reproducible information. This study was conducted to find out the different histopathological finding in endometrium of infertile women in a tertiary care hospital for proper diagnosis and treatment.

METHOD:- A study of 125 cases of infertility was performed in department of pathology RIMS RANCHI. Gross examination of sample was done and patient history was taken accurately. Haematoxylin and eosin staining was done for tissue section.

RESULT:- 72% cases were of primary infertility and 28% presented with secondary infertility. Secretory phase (48.8%) was found as most common morphological pattern followed by proliferative phase (33.60%). Endometrial hyperplasia, Inadequate sample, non-specific endometritis and tuberculosis were found in 9.6%, 5.6%, 1.6%, 0.8% cases respectively.

CONCLUSION:-

Histopathological study of endometrium gives useful and valuable information of endometrium, which further help much for diagnosis and treatment of infertility.

KEY WORDS:- Endometrium, Infertility, Biopsy, Histopathology.

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I. Introduction

Infertility is defined as the inability for a couple to conceive a pregnancy following 1 year of unprotected vaginal intercourse⁽¹⁾. The cause of infertility women are many and approximately 40% of couple will have more than one cause for their infertility⁽²⁾. Infertility is a global health problem and around 80 million people are affected worldwide^(3,4). Primary infertility falls to conceive at all whereas secondary infertility falls to conceive after having borne a child or abortion⁽⁵⁾. Histopathological examination of premenstrual endometrium can determine ovulation/anovulation by assessing its phase⁽⁶⁾. The endometrial biopsy is an essential step in the investigation of infertile women. Many authors have reported that endometrial biopsy is a safe, reproducible and adequate means of providing histological evidence of normal endometrial development⁽⁷⁾. However some authors have concluded that endometrial biopsy in the investigation of infertility is doubtful because of inconsistency of their findings and error in interpretation⁽⁸⁾. In India, there are approximately 10.2 million couple having infertility⁽⁹⁾.

The purpose of this study is to ascertain the incidence of defect in a series of infertility patients and subsequent management of the patients.

II. Material And Method

Our prospective study was conducted over a period of one year from August 2017 to July 2018 in department of pathology. RIMS RANCHI. Our study got approval from ethical review board. Total 125 samples were examined samples were preserved in 10% formalin. Patients suffering from either primary or secondary infertility were included in the study. Patients history regarding gravidity, parity, the presence or absence of abortions, cycle dates, etc. were evaluated.

Gross examination of sample were done according to guidelines provided by standard textbook of surgical pathology. Further, Paraffin blocks were made and staining was done by Haematoxylin and Eosin (H&E). Microscopic examination was performed for morphological features such as cyclical phase, presence of hyperplasia, tubercular endometritis etc. A diagnosis of anovulation was made when the endometrium showed a non-secretory pattern despite the fact that the chronological menstrual age was compatible with the luteal phase. Any section showing the significant presence of inflammatory cells were classified as endometritis.

Samples were collected between days 21 to 23 of menstrual cycle of each patient. For statistical analysis patients were divide into three age groups as follows, 21-27 years, 28-34 years and 35-41 years and percentages (frequencies) were calculated.

III. Results

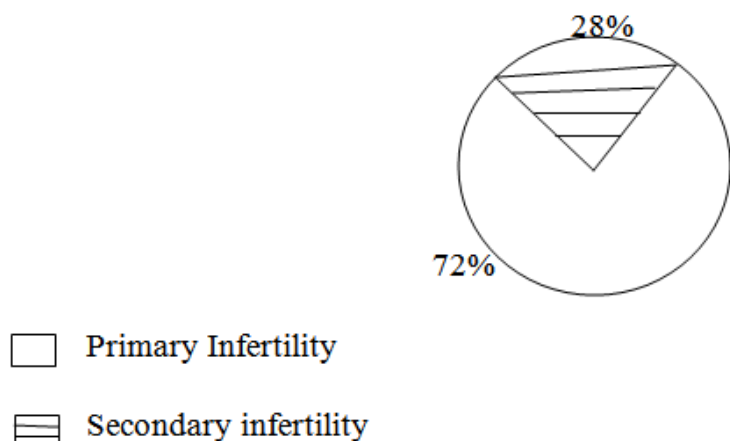


Fig:- 1 Distribution of Primary and Secondary Infertility.

Among 125 cases of infertility 90 (72%) were of primary infertility, 35 (28%) cases were of secondary infertility (Figure-1)

No. of Cases	Histological diagnosis	Percentage	Indication
42	Proliferative phase	33.61%	Anovulation
15	Early Secretory phase	12%	Post Ovulation
15	Mid Secretory Phase	12%	Post Ovulation
31	Late Secretory Phase	24.8%	Post Ovulation
12	Simple endometrial hyperplasia	9.6%	Anovulation
7	Inadequate Sample	5.6%	Anovulation
2	Non Specific endometritis	1.6%	Evidence of Infection
1	Tubercular endometritis	0.8%	Evidence of Infection

Table: - I, Biopsy finding in infertile women.

Table- I shows the histological diagnosis of endometrial biopsy in the study group of the total numbers 61 (48.8%) showed various stages of secretory patterns ranging from early secretory phase (12%), mid secretory phase (24.8%). 42(33.60%) biopsies showed proliferative phase. 12 (9.6%) showed endometrial hyperplasia. 2 (1.6%) showed inflammatory endometrium (non-specific endometritis) and 1 (0.8%) sample diagnosed as tubercular endometritis.

Age group	Total	Primary Infertility	Secondary Infertility
21-27	65	59	6
28-34	46	18	28
35-41	14	13	1

Table- 2Age distribution of Primary and Secondary infertility.

A total 125 endometrial biopsy or curettage sample were studied. Age ranged from 21 years to 41 years. Primary infertility was more frequently present in 21-27 years of age, whereas secondary infertility was more common in older age group (28-34 years age group) (Table-2)

IV. Discussion

We recorded most of Patients (72%) with primary infertility, these results are similar to those of Sahu et al. Study reporting (71.6%) with primary infertility ⁽¹⁰⁾.

Above study detected the adequacy of endometrial development based on correlating menstrual history with glandular & stromal morphology.

In our study secretory phase was predominant cause of infertility whereas proliferative phase was the most common cause of infertility observed by Girish et al ⁽¹¹⁾. Among the secretory phase, we found late secretory as most common (24.8%). Our finding varies with the finding of Kafeel et al ⁽¹²⁾, where we found early

secretory phase (37.5% cases) was most common followed by mid secretory phase (14.1% cases) and late secretory phase (5.0% cases).

Endometrial hyperplasia was found 9.6% cases in our study. It was found higher (14.1%) in Pakistan⁽¹²⁾ and highest in Nigerian women (20.0%)⁽¹³⁾.

Endometritis is known to cause infertility either by disturbing the cyclic endometrial rhythm or as a result of the accompanying tubal inflammation and secondary anatomical abnormalities which are always present⁽¹⁴⁾. Nonspecific endometritis was present in 1.6% of the study population, whereas OTO et al⁽¹⁴⁾ observed endometrial inflammation in 10.6% of cases. Tubercular endometritis formed a minor cause of infertility (0.8%) in the present study. Rani PR⁽¹⁵⁾ found that in Patients of genital tuberculosis the most common site of involvement is endometrium in 86.66% , 50% NS 60% respectively in patient of genital tuberculosis.

V. Conclusion

Endometrial biopsy is an important, safe and useful diagnostic tool for infertility. Histopathological examination of endometrium provide normal response of endometrium, information regarding atrophy, hyperplasia, infection malignancy and evidence of normal endometrial development.

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