

## Study of mast cells in endometrium in different uterine diseases

Alka Goyal<sup>1</sup>, Nand Lal<sup>2</sup>, Shikha Mathur<sup>3</sup>, Vinayak Gour<sup>1\*</sup>

<sup>1</sup>Department of Anatomy J.L.N.M.C., Ajmer, India.

<sup>2</sup>S.M.S.M.C., Jaipur, India.

<sup>3</sup>Department of Obs./Gyn., J.L.N.M.C., Ajmer, India.

**Correspondence Address:** \*Dr. Vinayak Gour, Department of Anatomy J.L.N.M.C., Ajmer, India.

### Abstract

Abnormal uterine haemorrhage is one of the commonest gynaecological disorders. Mast cells are found in the different phases of endometrium of normal women suffering from dysfunctional uterine bleeding. The most important chemical components of mast cells are heparin, histamine and hyaluronic acid. The liberation of heparin by mast cells led to the belief that a correlation might exist between these cells and menstrual disorders.

**Keywords:** Mast cells, Endometrium, Histamine, DUB

### Introduction

Dysfunctional uterine bleeding is reported to be one of the common bleeding disorders of females during reproductive age group. Mast cells are found in the different phases of endometrium of normal women suffering from dysfunctional uterine bleeding. Liberation of heparin by mast cells led to the belief that a correlation might exist between mast cells and menstrual disorders.

The present study was carried out on patients attending gynaecology and obstetrics department of JLN Hospital Ajmer between 2015-2016. Thirty females with history of abnormal uterine bleeding and fifteen healthy females of primary sterility with normal periods having no haemato-logical disorders serving as control were the subject of study. Endometrium either after curettage or from hysterectomy specimens was studied for routine histopathology as well as for random counting of mast cells. Mast cells were

found around perivascular tissue, periglandular tissue and interstitial tissue of the endometrium. Mast cells were increased in D.U.B. subjects than controls. This was specially observed in the secretory phase of the endometrium. There was however a decrease in both cases in the proliferative phase.

### Materials and methods

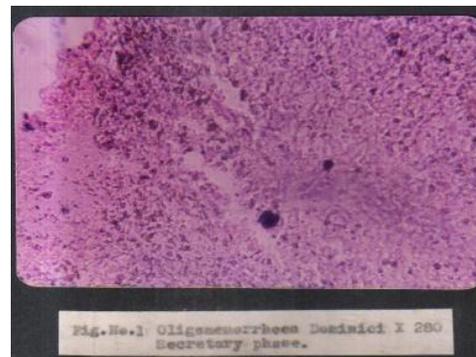
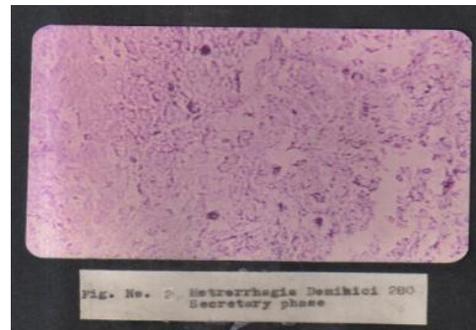
The present study was carried out in patients attending Gynaecology & obstetric department of JLNMC Ajmer during 2015-2016. Thirty females with H/O abnormal uterine bleeding (in when any inflammatory or neoplastic basis of DUB was clinically ruled out) and fifteen healthy females of primary sterility with normal periods serving as control were chosen.

After the routine paramenstrual curettage under sodium pentothal anaesthesia the endometrium was fixed with the fixatives like formalin saline/ alcohol formol. After

fixation the slides were prepared and staining was done by Haematoxylin and eosin. After staining counting of cells was done by putting the stained slide against X-Ray viewing box with graph paper over the slide. Then the outline was drawn and total number of the square counted no. of the square denote the millimeter area. Total field area was then scanned under high power (45X) and the number of mast cells counted.

### Discussion

Dysfunctional uterine bleeding is reported to be one of the common bleeding disorder of females during reproductive age group. D.U.B. has varied clinical manifestation ranging from cyclical oligomenorrhoea to menorrhagia and non cyclical irregular metrorrhagia or regular polymenorrhoea, besides prolonged continuous bleeding. Females with polymenorrhoea metrorrhagia and secondary infertility show a reduced mast cell count. This could be due to disruption of the cells during menstrual flow rendering them imperceptible by the usual toluidine blue staining technique. The increase in mast cell population in the diseases of endometrium, especially in the secretory phase under various pathological processes, fully substantiates the pluripotent nature of mast cells and their inherent capability to respond to physiological and pathological stresses to the immediate advantage of the tissues.



**Table 1: Showing Incidence of Different Clinical Types of D.U.B. and Other Uterine Diseases.**

S. No.	Clinical Diagnosis	No. of Cases	Percentage
1	Menorrhagia	8	26.66
2	Oligomenorrhoea	6	20.00
3	Polymenorrhoea	4	13.33
4	Metrorrhagia	4	13.33
5	Secondary Sterility	8	26.66
	<b>Total</b>	<b>30</b>	<b>100.00</b>

**Table 2: Show Distribution of Cases According to Various Histopatho-Local Phase of Endometrium in Dysfunctional Uterine Bleeding, Other Diseases and Control Group.**

<b>Endometrium</b>	<b>Dysfunctional Uterine disease and other clinical conditions</b>	<b>Percentage (%)</b>	<b>Control Group</b>	<b>Percentage (%)</b>
Secretary	12	40.00	10	66.66
Proliferative	14	46.66	4	26.66
Miscellaneous	4	13.33	1	6.66
<b>Total</b>	<b>30</b>	<b>100.00</b>	<b>15</b>	<b>100.00</b>

**Conclusion**

Irrespective of the histo-morphological picture of endometrium the mast cells were increased in D.U.B subjects than controls in secretary phase of endometrium .There was however a decrease in both cases in proliferative phase .The possible role of mast cells in the pathogenesis of dysfunctional uterine bleeding was discussed with a view to effectively manage the patients

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