

A COMPARATIVE STUDY OF VAGINAL CYTOLOGY AFTER THE USE OF I.U.C.D. AND ORAL CONTRACEPTIVES

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I.U.C.D. and Oral contraceptives are generally regarded as one of the most effective and hence most popular methods of contraception. Opinions, however, differ regarding the possible tissue changes which they produce on the genital tract. So much so, that Southam and Babcock (1967) and Corfman and Ralf (1967) have demonstrated a carcinogenic potential in I.U.C.D. in their animal experiments. Morguiles (1964), Tietze (1966) have reported neoplastic changes in the cervix after the use of I.U.C.D. for varying duration. But Ishihama *et al* (1970) failed to find any relationship between prolonged use of I.U.C.D. and malignant changes.

This study was undertaken to see and compare the alterations produced in vaginal cytology after the use of I.U.C.D. & Oral contraceptives for varying period of time.

Material and Methods

Two hundred and sixty patients were selected for this study from UISE Maternity Hospital and other private nursing homes of Kanpur, over a period of 2

years. Out of 260 patients, 120 were using IUCD. 100 were using oral contraceptives and 40 were controls. Preferably educated women were chosen for this study; the purpose of study was explained to them individually so that they report back for checkup as and when necessary. The control cases had the same age group and parity as the study group and had normal menstrual cycles. They came to hospital for complaints like backache, pain in lower part of abdomen and prolapse of the uterus, etc. All the cases were studied in different phases of menstrual cycle, viz. 4th-6th day, 7th-13th day, 14th to 20th day, 21st to 28th day. A detailed history and clinical examination was done in all cases. All women had already proved their fertility.

Amongst the oral contraceptives, Primovlar and Ovral 28 were the most common but a few women were using some of the other brands also. Amongst IUCD only those using copper 'T' were selected. All the cases were given proper instructions about sexual intercourse, vaginal douching, usage of drugs before calling them for vaginal cytology.

Each slide was studied carefully for maturation index, crowding of cells, inflammatory cells and background of the slides. Total of 100 cells were studied to find out the maturation index and to

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assess the hormonal effect. Papanicolaou stain was used for all the cases.

lated to duration of use of oral contraceptives.

Observations

Table I shows the duration of use of IUCD and oral contraceptives which ranged between 1 month to 5 years.

The incidence of erosion of cervix in cases using IUCD was found to be maximum (25%) in the Group of more than 12 months duration of use.

TABLE I

Group	Duration of use in months	Cases No.	Using IUCD %	Cases No.	Using oral pills %
I	Less than 4	20	16.66	26	26.00
II	4-8	40	33.33	50	50.00
III	9-12	44	36.66	20	20.00
IV	More than 12	16	13.33	4	4.00
Total		120		100	

Age group of the cases ranged between 20 to 40 years. Out of 120 cases of IUCD, 59.99% were between 20 to 30 years and out of 100 cases of oral contraceptives 68% were between 20 to 30 years. Among the control cases 55% were between 20 to 30 years.

Parity of these cases ranged between 1 to 5. The largest number of IUCD users (43.33%) were second paras and the largest number of oral pill users were also second paras (40.00%).

Table II describes the pattern of menstrual symptoms in cases using IUCD and oral contraceptives.

Incidence of menorrhagia was high among IUCD users but had no relation with the length of its use although the highest incidence of menorrhagia (37.5%) was found in the last group i.e. of more than 12 months duration. Oral pill users more often came with scanty periods, 4 cases had developed complete amenorrhoea, 2 after its use for 8-12 months, and 2 after its use for more than 12 months duration. This complaint was directly re-

Vaginal Cytology: Cytohormonal changes of the vaginal epithelium in cases using IUCD and oral contraceptives for varying duration of time were studied and compared with control cases. The slides were evaluated for the backgrounds, maturation index and presence of inflammatory cells as shown in Table IV. Desquamation of intermediate cells was a predominant feature and increased as the duration of oral pills increased. Clusters of navicular cells increased with increasing duration of oral pills and even presence of cigarette-shaped cells was observed. Normal cyclical variation was not observed in the exfoliated Cells.

Background: The background of the slides was dirty showing presence of fragments of cervical mucus in 76% cases of IUCD and 64% cases of oral contraceptives. As the duration of use of oral pills increased, the tendency was more and more towards the dirty background.

Maturation Index: The vaginal cytology in cases of IUCD presented a defective progesterone effect with an increased

TABLE II

Duration of use in months	Type of contraceptive	No. of cases	Normal		Menorrhagia		Metrorrhagia		Scanty periods		Amenorrhoea		Dysmenorrhoea	
			Before use	After use	Before use	After use	Before use	After use	Before use	After use	Before use	After use	Before use	After use
Less than 4 months	IUCD	20	16 (80%)	8 (40%)	2 (10%)	6 (30%)	—	2 (10%)	2 (10%)	—	—	—	—	4 (20%)
	Oral	26	22 (84.6%)	22 (84.6%)	4 (15.2%)	—	—	4 (15.2%)	—	—	—	—	—	—
4—8	IUCD	40	32 (80%)	28 (70%)	4 (10%)	8 (20%)	—	2 (5%)	4 (10%)	—	—	—	—	4 (101%)
	Oral	50	40 (80%)	30 (60%)	6 (12%)	—	—	4 (8%)	4 (8%)	16 (32%)	—	—	8 (16%)	—
8—12	IUCD	44	40 (90%)	26 (51.09%)	2 (4.95%)	12 (27.24%)	—	2 (4.95%)	—	—	—	—	2 (4.95%)	6 (13.75%)
	Oral	38	18 (90%)	10 (50%)	2 (10%)	1 (10%)	1 (10%)	—	—	6 (30%)	—	2 (10%)	—	—
More than 12	IUCD	16	14 (97.5%)	10 (62.5%)	—	6 (37.5%)	—	—	2 (12.5%)	—	—	—	2 (12.5%)	—
	Oral	4	4 (100%)	—	—	—	—	—	—	2 (50%)	—	2 (50%)	—	—

TABLE III

Duration of use in months	Type of contraceptives	No. of cases	Erosion		Pelvic Inflammation		Endocervicitis	
			No.	%	No.	%	No.	%
Less than 4	IUCD	20	2	10.00	2	10.00	—	—
	Oral	26	—	—	—	—	—	—
4—8	IUCD	40	—	—	6	15.00	—	—
	Oral	50	2	4.00	—	—	—	—
8—12	IUCD	44	4	9.09	8	18.18	2	4.5
	Oral	20	2	10.00	—	—	—	—
More than 12	IUCD	16	4	25.00	4	25.00	2	12.5
	Oral	4	—	—	—	—	—	—

tendency for proliferative phase in some (20%) of the cases while in others it corresponded to the day of cycle. Anovulatory cycles were seen in 15% of the cases.

In cases of oral contraceptives, a predominance of progesterone effect was seen. Midzonal shift of the maturation index was a characteristic feature.

Inflammatory Cells

Inflammatory cells were seen in 40% cases of IUCD and 30% cases of oral contraceptives. Number of these inflammatory cells increased with increased duration of use of IUCD and oral contraceptives.

Vaginal Cytology

Cytohormonal changes of the vaginal epithelium in patients using IUCD and oral contraceptives for varying duration of time were studied and compared with control cases. The slides were evaluated for the backgrounds, maturation index and presence of inflammatory cells. Desquamation of the intermediate cells and cluster formation of navicular cells was a predominant feature. These increased with duration of oral pill use. Cigarette-shaped cells were also observed. The foliated cells did not show normal cyclical variation. The important features observed were.

Background

The background was dirty and showed presence of cervical mucous fragments in 76% IUCD and 64% oral contraceptive users. This increased with duration of use of oral pills.

Maturation Index

IUCD cases presented defective progesterone effect with a predominant proliferative phase in 20% cases, in others it corresponded to the day of cycle. Anovulatory cycles were seen in 15% cases. Pill users had predominantly progesterone effect. Midzonal shift of the maturation index was a characteristic feature.

Inflammatory Cells

Inflammatory cells were seen in 40% cases of IUCD and 30% cases of oral contraceptives. Number of cells increased with duration of IUCD and pill use.

No evidence of malignancy or dysplasia was found in both IUCD and pill users in contrast to Sahani and Kothare (1972) who reported mild degree of dysplasia in 5% cases and Misra and Engineer (1976) who found dysplasia in 52% cases against 4.1% in controls. Even the latest reports (Tichaver and Vargh, 1968; Ishihama *et al*, 1970, Sahni, 1976) have not made any mention of dysplasia.

Our findings of vaginal cytology are in complete agreement with Watchel (1965), Chiaffitali (1970) and Mali (1971).

Surface epithelium

Surface epithelium was cuboidal flat or low columnar in majority of cases using oral pills. It did not develop to its full height corresponding to the day of cycle and this was directly related to the duration of use of the pills. Metaplastic and dysplastic changes were not detected in any case. None of the other workers have described the surface epithelium in detail.

Summary and Conclusion

1. None of the cases using IUCD or oral pill conceived.

2. Various menstrual disorders were noted in these patients. Four women using oral contraceptives reported amenorrhoea after 11 months to 4 years period. Normal cycles were restored within 3 months after stopping pills. Four complained of oligomenorrhoea after more than 4 years use but no tissue could be obtained on endometrial biopsy. Nothing further could be known about them as none reported after this period.

23.33% of IUCD users reported for menorrhagia. This disappeared gradually with the continuous use.

3. 16.66% cases of IUCD developed mild pelvic inflammation. IUCD was removed and antibiotic therapy was given.

4. In most of IUCD users vaginal cytology reflected no change in hormonal pattern except in a few (20%) a defective progesterone effect with dominant proliferative phase was seen.

In oral pill group progesterone effect was dominant.

5. Number of inflammatory cells was more in IUCD users (40%) than oral pill users (30%).

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