

# CRYOSURGERY "A NEW MODALITY IN THE TREATMENT OF BENIGN DISEASES OF THE UTERINE CERVIX"

(Report of 100 cases)

by

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## SUMMARY

Majority of patients had symptomatic relief. A single treatment was effective in eradicating the disease in 95% of patients. The results show that cryosurgery is an effective treatment with minor complications. The Healing progresses in a reliable fashion, more rapidly, and the cervixes are found to heal completely.

### *Introduction*

Gold has been used for medical purposes as early as 2500 B.C. when Egyptians used it for trauma. Cryosurgery is a new modality of therapy that causes controlled destruction of tissue by subjection to subfreezing temperature. The cervix is ideally suited for cryogenic treatment because of its accessibility and the ease of assessing tissue changes both photographically and by biopsy. Its application in the treatment of cervical dysplasia and early cervical malignancy is still under trial. This study deals with the use of cryosurgery in the treatment of benign cervical erosions and endocervicitis in 100 cases.

### *Material and Methods*

100 cases of erosion cervix and endocervicitis were randomly selected for treatment with cryosurgery from the gynaecological out-patient department of M.Y. Hospital Indore (M.P.) from November 1981 to December 1982. A detailed history was taken and vaginal examination was performed. A speculum examination was done to determine the type and the extent of cervical lesion. In all cases, a cervical smear was taken and stained by Papanicolqu method. Colposcopy was performed in all the cases. Patients having dysplasia were excluded from the series. Trichomonal and monilia vaginalitis if detected were treated prior to cryosurgery. A cervical biopsy was taken in some of the suspicious erosions.

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Patients were called soon after the menstrual period. Cryosurgery was done in gynaecological out-patient department. Office therapy was performed with newer mobile Frigitronic Cryosurgical equipment using nitrous oxide, as a refrigerant in all the cases. None of the patients received any anaesthesia or analgesia.

The cervix was swabbed with 3% acetic acid solution, which is a mucolytic agent. The cervix was then moistened with normal saline. A suitable probe tip was selected. Freeze-thaw-freeze technique was used in the entire series. Freezing was continued till the ice ball was 2-3 mm beyond the area of erosion. Duration of treatment was timed and the number of applications required were noted. In 74 cases the freezing was continued for 180 sec. in 20 cases for 120 seconds and in 6 cases for 90 secs. Complications like pain, discomfort or bleeding during the procedure or immediately following it were noted. No treatment was given to the patient after cryosurgery except that they were asked to avoid intercourse for 6 weeks.

Only 1 application was required in 85 cases to encompass the entire erosion, 2 applications were required in 12 patients and 3 applications in 3 patients as the lesion was greater than the surface area of the probe tip.

Patients were followed up at 7 days, 4 weeks, 8 weeks, and onwards whenever they came.

In 60 patients who turned for follow-up, 29 patients were assessed at 8 weeks and 31 patients between 8 weeks to 12 weeks.

#### Observations

All patients were married. They belonged to age group of less than 20 years to 45 years. Majority of them belonged to age group of 21 to 30 years.

Most of the patients were multiparas.

Table I shows presenting symptoms before cryosurgery. Leucorrhoea alone and with backache was the most common symptom.

TABLE I  
*Presenting Symptoms Before Cryosurgery*

Complaints	No. of Patients
Leucorrhoea	38
Leucorrhoea & backache	38
Leucorrhoea and sterility	3
Leucorrhoea and pain in abdomen	10
Leucorrhoea and pruritis vulvae	2
Leucorrhoea and burning in micturition	2
Leucorrhoea and dyspareunia	2
Leucorrhoea and dysmenorrhoea	2
Backache	2
Total	100

Erosion on both the lips of the cervix was the most common lesion. Table II.

TABLE II  
*Per Speculum Examination*

Type of lesion	No. of Patients
Erosion on anterior Lip	8
Erosion on posterior Lip	25
Erosion on both the Lips	35
Erosion on both the lips and endocervicitis	28
Endocervicitis	2
Erosion with endocervical polyp	1
Erosion with Nesbothian follicle	1
Total	100

Inflammatory smear was the most common finding on cytology and occurred in 59 patients. Table III.

Table IV shows the symptomatic relief after cryosurgery.

TABLE III  
Cytology Reports

Cytology Report	No. of Patients
Negative	32
Inflammatory	59
Trichomonal Vaginitis	9
Total	100

either healing or improving the abnormal appearing area. Back ache was relieved 75% and persisted in 25% of cases.

Cervical healing was complete at 12 weeks in 95% of cases and persisted in 5%. Table V.

Table VI shows the complications after cryosurgery.

At the time of the procedure: 16%

TABLE IV  
Presenting Symptoms After Cryosurgery

Complaints	Before Cryo- surgery No. of Patients	After Cryosurgery		
		Disappeared	Reduced	Persistent
Vaginal discharge	60	40 (66.6%)	14 (23.3%)	6 (10%)
Backache	35	6 (17.1%)	20 (57.1%)	9 (25.7%)
Lower abdominal pain	7	2 (28.5%)	2 (28.5%)	3 (42.8%)
Dyspareunia	2	2 (100%)	—	—
Pruritis	—	—	—	—
Vulvae	2	2 (100%)	—	—

All the 60 patients complained of leucorrhoea prior to cryosurgery. At the time of follow-up, 40 patients had no vaginal discharge. The discharge was significantly reduced in 14 patients and persisted in 6 of them. Thus decrease of vaginal discharge to a varying extent was seen in 54 of these 60 patients i.e. in 90% cases. The reduction in discharge was closely related to effectiveness of cryosurgery in

patients had mild to moderate pain. It is significant to note that one patient had vasovagal attack which improved after treatment.

TABLE VI  
Complications

Complications	No. of cases
<b>During Procedure</b>	
No complications	82 (82%)
Discomfort to slight pain	16 (16%)
Bleeding	1 (1%)
Vasovagal attack	1 (1%)
<b>After Procedure</b>	
Vaginal discharge	50 (83.33%)
vaginal bleeding	6 (10%)
Post coital bleeding	5 (8.3%)
Dyspareunia	—
Systemic Complaints	—

TABLE V  
Cervical Healing Following Cryosurgery

Interval in weeks	Number of Cases	
	Healed	Not Healed
8	28 (46.67%)	1 (11.67%)
9	7 (11.67%)	—
10	10 (16.67%)	—
11	5 (8.33%)	—
12	4 (6.66%)	2 (3.33%)
More than 12	3 (5.00%)	—
Total	57 (95%)	3 (5%)

Discussion

The effect of cryosurgery on symptoms

**(1) Vaginal discharge**

In our series of the 60 patients who came for follow-up, 54 patients had decrease in vaginal discharge i.e., 90%. This figure co-relates well with the similar trial by Townsend *et al* (1971) who reported that 90% of their patients experienced decrease in vaginal discharge. Similarly, in Sheth's series (1977) 91.2% patients had decrease in vaginal discharge while Junarkar *et al* (1978) reported 90.4% of their patients had diminished vaginal discharge after cryosurgery.

**(2) Backache**

In the present study 75% patients noted an improvement or cure from backache. While Jackson (1972) reported a 86% cure rate in his series. In Sheth's series, (1977) 75% patients noted improvement or cure which co-relates with our results. Junnarker *et al* (1978) reported 89%, while Khurana (1980) reported 50% success rate.

**(3) Dyspareunia**

In present series 2 patients had dyspareunia which was completely relieved in both the patients following cryosurgery. In a similar trial by Ostergard, *et al* (1968) 50% patients noticed relief after cryosurgery. While 75% reported an improvement of dyspareunia. Khurana (1980) reports 67% cure rate in his series.

**(4) Healing**

Out of the 60 patients who were followed up, 57 i.e. 95% patients showed complete healing between 8-12 weeks.

Junnarkar *et al* (1978) reported similar results with complete healing in 95% cases and Khurana (1980) reported that 97% of cervixes healed completely by 8-12 weeks while 3% showed persistent red erosion even after 8 weeks. Ostergard *et al* (1968) documented complete healing in 90% cases at 8 weeks.

The best results so far were obtained by Pappas and Collins (1965) i.e. 98% success rate at 8 weeks (Quoted in Sciarra).

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TABLE IV  
Relative Frequencies of Abnormal Deliveries in Affected and Survivor Group

Type of labour	Affected group n = 292		Survivor group n = 3036	
	No.	% of affect. group	No.	% of survivor group
Caesarean section	63	21.5	344	11.3
Forceps	32	10.9	180	5.9
Hysterectomy	1	0.34	—	—
Craniotomy	3	1.03	—	—
Ventouse	4	1.4	110	3.6
Total	103	35.5	634	20.8

having birth weight of 2250 gms or less. Further the first week deaths were much more common in infants having birth weight below 1250 gms, whereas stillbirths were seen more in higher birth weight (Table V).

Sex of infant—Of all the births 1692 were male and 1634 females. The sex was not known in two. In affected group 143 were male, 147 females and not known in two cases. Thus there was no difference in perinatal mortality in relation to the sex of the child.

#### Discussion

The perinatal mortality rate is significantly high in India and show marked variation in different regions. The incidence of present series, 87.7% per 1000 births is in close proximity with the reported of 78.0 by Karan *et al* (1972), 79.8 Mehdi *et al* (1961) from Hyderabad, and 80.7 per 1000 birth by Puri *et al* (1981) from JIPMER. However, Engineer *et al* (1962) and Rajgopalan (1964) reported an incidences of 114.9 and 124.7 deaths respectively from Lucknow,

TABLE V  
Perinatal Mortality in Relation to Foetal Birth Weight

Weight in grms	Total No. of Birth	Still birth	1st Week death	Perinatal deaths	PNMR/1000
500- 750	15	8	7	15	1000
750-1000	30	8	19	27	900
1001-1250	42	12	23	35	833.3
1251-1500	59	21	13	34	576.3
1501-1750	75	23	14	37	493.3
1751-2000	184	30	7	37	201.1
2001-2250	445	33	5	38	85.4
2251-2500	470	14	5	19	40.4
2501-2750	656	13	4	17	25.9
2751-3000	690	23	3	26	37.7
3001-3250	337	4	0	4	11.9
-3250	325	3	0	3	9.2
Total	3328	192	100	292	87.7

whereas Singh *et al* (1982), Ghosh *et al* (1971), Gupta *et al* (1972), and Ghosh *et al* (1979) reported lower incidence from Delhi varying from 41.1 to 68.0 per thousand births. The most important factor for this variation is the nature of study that is whether hospital based or population based. The Banaras Hindu University hospital is a referred hospital and a significant number of mothers with a serious maternal and obstetric problem are referred here. Karan *et al* (1972), and Naeye (1972) attributed these variation to differences in socioeconomic status. The lack of education and antenatal care, poverty, poor housing, hygiene and nutrition unplanned pregnancies, low birth weight of fetuses, asphyxias during and after labour, and birth injuries produce cumulative stress over fetuses during pregnancy and labour and thus resulting in high death rate.

The perinatal mortality was the lowest in mothers of 21-25 years age group, and 2nd para, and higher in younger women, and primi, as well as in older mothers and multiparity. It is in conformity with Mehdi *et al* (1961), Karan *et al* (1972), Missra *et al* (1973), Bhargava *et al* (1981), and Puri *et al* (1981). The birth canal in young women and primipara is relatively less elastic leading to increase in intrapartum anoxia, and birth injuries, whereas in older women and multiparity higher incidence of pregnancy associated maternal diseases, low grade infection and higher risk of chromosomal aberrations may be responsible for increased foetal mortality.

Low birth weight infants tend to have alarmingly high mortality in the present series as well as others (Potter and Devies, 1969; Gupta *et al*, 1979; Karan *et al*, 1972; Ghosh *et al*, 1979; Bhargava *et al*, 1981; and Singh *et al*, 1982). In

contrast, Rush *et al* (1978), reported good survival in infants with birth weight of at least 1500 gms. We observed that our 40% infants were 2500 gms 80% of the perinatal loss, and this goes or less in weight but it accounted for well with the recommendation of Academy of Paediatrics to use 2500 gms as the upper limit of prematurity (Potter and Devies, 1969). Further in low birth weight babies the incidence of first week neonatal death is higher than the still birth. Similar observation was also made by Rush *et al* (1976). Probably the immaturity of the tissues is the most important cause of death in low birth weight group. Beside this the low birth weight accentuate the effect of asphyxia and aggravate the risk of developing infection, hyaline membrane disease and other complication.

In conclusion it can be said that although the perinatal loss is not totally avoidable because of some fetuses being biologically incompatible for survival but in our country the low birth weight, primiparae, multiparity and abnormal foetal presentation are important factors highlighting the need of better nurseries to take care for low birth weight babies, better obstetric care for primiparas, and mothers with abnormal foetal presentation and the need for family planning after two to three babies.

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Robert and Gordon (1951) state that there is an overabundance of evidence that conditions of cervical intra-epithelial neoplasia (CIN) are associated with the clinical picture of ectopic pregnancy. The above has been demonstrated by Borge and Walsh (1977).

From the January 1982, a programme of research was set up for all the gynaecological and obstetric departments of the Women's Health Services Hospital, which included in order to detect CIN in this and early cervical lesions in the cervix. A review of these cases forms the basis of present paper.

**Material and Methods**

Over a period of 18 months from January 1981 to June 1982, 301 patients were screened cytologically in gynaecological clinic of Women's Health Services Hospital. Out of them 27 were found to be having cervical intra-epithelial neoplasia. They were further evaluated by repeat cytology, colposcopy and biopsy and were treated and only according to their individual status. They were followed up and the results followed up. The details of the study are stated and discussed.

The nature, accessibility of the cervix to direct visual examination and the possibility of colposcopy and biopsy have been reviewed in a previous paper of the author (1981) and about any other cervical lesions that may have been detected from several cases but is recorded by morphological changes beyond changes (CIN I and CIN II) with these changes representing CIN I and CIN II respectively. It is possible to determine significant the frequency of cervical cancer. These intra-epithelial changes have been described under the term cervical intra-epithelial neoplasia (CIN).

Cervical intra-epithelial neoplasia have been graded as CIN I, II and III. CIN I corresponds to mild dysplasia, CIN II to moderate dysplasia and CIN III to severe dysplasia and carcinoma in situ (CIS).

Cytology is considered to be the most practical method for detecting these precancerous and early cancerous lesions.

From Women's Health Services Hospital, Lucknow (1981).