

REPEAT USE OF PLASTIC SUCTION CANNULA AFTER COLD STERILIZATION*

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Introduction

When a community is led to believe that induced abortion is simple and safe procedure, an added burden and responsibility is placed on the doctor because the unavoidable complications may be interpreted as a fruit of negligence (Stallworthy, 1969). Postabortal sepsis and morbidity depends in addition to general health of the individual woman on four major factors—the method of abortion, the skill of the provider, the duration of pregnancy and the accessibility and quality of medical facilities to treat the complications of the abortion (Population Report Series, 1973).

Material and Methods

In the present study, 210 suction evacuations were performed for first trimester termination of pregnancy with the help of 50 new cannulae in Coherts who had no other pathology. The cannulae for

repeat use were first rinsed and then kept in Cider 2% for 4 hours. In addition to routine check up high vaginal swab was taken preoperatively and again at follow up. Patients were called for follow up after one week and two weeks. Cannulae were numbered for their identification in subsequent usages. These 50 new cannulae were used for 2 to 3 times in 50 cases, 4 to 8 times in 50, 9 to 13 times in 47 and 14 to 16 times in 13 cases. Eight mm diameter and 10 mm diameter cannulae were used in 92 and 82 cases respectively. While 6 mm diameter cannulae were required in 30 cases. Twelve mm diameter cannulae were infrequently needed.

Observations and Results

A high percentage of positive pathogenic cultures (80%) were obtained from initial high vaginal swab of social class V, whereas no pathogenic cultures were positive from initial high vaginal swab of social class I and II (Table I).

Table II shows the relationship of the complaints at follow up study with the microbiology of the vaginal flora. Among 90 asymptomatic cases, 50% had grown no organisms on MaConkey and Blood Agar media and only 5.56% had positive pathogenic cultures. Thirty cases who had complained of vaginal discharge had

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TABLE I
Social Class and Bacteriology of Initial High Vaginal Swab Cultures

Social class	Number of cases	Initial high vaginal swab cultures		
		No growth	Pathogenic	Non pathogenic
I	10	7 (70%)	—	3 (30%)
II	25	23 (92%)	—	2 (8%)
III	90	69 (76.70%)	1 (1.1%)	20 (22.20%)
IV	80	40 (50%)	13 (16.30%)	27 (33.70%)
V	5	1 (20%)	4 (80%)	—

TABLE II
Relationship of Symptoms at Follow up Visit with the Vaginal Flora Microbiology

Symptoms at follow-up	Bacteriological study of follow up cultures					
	No growth		Positive pathogenic		Positive non pathogenic	
	No.	%	No.	%	No.	%
No complaints n = 90	45	50	5	5.5	40	44.44
Vaginal discharge n = 30	2	6.57	10	33.33	18	60.00
Fever n = 30	3	10.00	15	50.00	12	40.00
Lower abdominal pain n = 11	—	—	6	54.55	5	45.45
Excessive bleeding P/V n = 19	14	73.68	2	10.53	3	15.79

grown positive pathogenic cultures in 33.33%. Among 30 cases who had reported fever at follow up, 50% had grown positive pathogenic growth. Among cases who had complained of lower abdominal

pain, 54.55% had grown positive pathogenic cultures.

The number of asymptomatic cases decreased markedly with the repeated use of the cannulae (Tables III, IV). Similar-

TABLE III
Frequency of Asymptomatic Cases at Follow up Visit in Relation to Serial Number of use of the Cannula

Serial No. of use	No. of cases	Cases reported at follow up	Asymptomatic cases
1st	50	48	26 (54.16%)
2nd, 3rd	50	36	21 (58.33%)
4th to 8th	50	41	21 (51.22%)
9th to 13th	45	43	15 (33.33%)

TABLE IV
Relationship of Clinical Symptoms with the serial Number of Use of Cannula

Serial No. of use	Cases reported at follow up	Symptomatology			
		Vaginal discharge	Pyrexia	Excessive bleeding per vaginum	Lower abdominal pain
1st	48	10 (20.83%)	6 (12.50%)	2 (4.16%)	3 (6.25%)
2nd, 3rd	36	5 (13.88%)	2 (5.55%)	4 (11.11%)	5 (13.88%)
4th to 8th	41	7 (17.67%)	8 (19.51%)	4 (9.75%)	—
9th to 13th	45	6 (13.33%)	13 (28.88%)	5 (11.11%)	3 (6.66%)
> 13th	10	2 (20.0%)	1 (10.0%)	4 (40.0%)	—

ly, the sepsis rate also increased with the repeated use of the cannulae (Tables V and VI).

swab cultures did not show significant difference in positive cultures in both types of the cases (Table VII).

TABLE V
Sepsis in Relation to Serial Number of Use of the Cannula

No. of times cannula used	No. of cases	Sepsis +ve		Sepsis -ve	
		No.	%	No.	%
1st	48	5	10.42	43	89.58
2nd to 8th	77	8	10.39	69	89.61
9th	55	12	21.82	43	78.18

TABLE VI
Positive Pathogenic Growth in Initial High Vaginal Swab and Follow-up Cultures from New and Previously Used Cannulae

	Initial H.V.S.		Follow-up H.V.S.	
	No.	%	No.	%
New cannulae	2	4	3	6.25
Previously used cannulae	12	0.09	43	32.58

In the present study, the incidence of the vaginal discharge, backache and excessive vaginal bleeding was found to be more among the cases where CuT insertion was done along with M.T.P. However, the microbiology of the high vaginal

TABLE VII
Microbiology of High Vagina in 2nd Week after M.T.P. Above and After M.T.P. with Cut Insertion

Bacteriological growth	M.T.P. alone		M.T.P. with CuT insertion	
	No.	%	No.	%
No growth	25	26.32	25	29.41
Positive pathogenic	25	26.32	20	23.53
Positive non-pathogenic	45	47.57	40	47.06

Discussion

The repeated use of the plastic disposable cannula is practised in all develop-

ing countries. This repeated use may increase bacterial contamination and sepsis. Plastic cannulae cannot be autoclaved and boiled although that would be the most reliable method of sterilization. Ethylene oxide is not yet easily available. Hence, the chemical sterilization is the method commonly practised.

The accessibility of the microbes to the disinfectant used determines the efficacy of the sterilizing agent used. Also, the efficacy of the germicidal solution used depends upon the quantum of microbes present (Maurer, 1974). Apart from increase in positive cultures there was increase in the colony count of the pathogenic microbial growth from the cannulae used more than once (Table VI). The increase in the percentage of the positive cultures obtained from previously used cannulae may be due to contamination or alterations in their physical character, such as the appearances of fissures, cracks and angulations. These physical alterations are significant in 6 mm diameter cannulae.

In present study, the postabortal sepsis was defined as the presence of two out of three clinical features such as pyrexia, pain in lower abdomen and tenderness on pelvic examination. Sepsis was significantly less among the cases where new cannulae were used, being only 10.47% compared to 21.82% among the cases where previously used cannulae were used. Taken separately any of the three symptoms, there was no definite correlation with the serial number of use. However, the bleeding per vaginum was significantly higher among cases where cannulae were used more than 13 times (Table IV).

American College of Obstetrics and Gynaecology (1972) has defined post-abortal pyrexia as fever above 38°C in first 48 hours postoperatively. Seven out of 30 cases who had complained of fever at follow up study had pyrexia of 38°C or more (3.8%) Table I. Vojota (1967) and Shulman (1971) reported 2.2% and 3.6% respectively after M.T.P. Joseph from this Institution reported 3.5% incidence of pyrexia in 200 cases who had suction evacuation as outdoor procedure. However, Bhateja (1976) from the same Institution reported no case of pyrexia after M.T.P. alone as compared to 6% incidence in M.T.P. with concurrent I.U.C.D.

In 50 cases who had suction evacuation with new cannulae, the percentage of positive pathogenic microbes increased in vaginal swab cultures from 4% initially to 6.25% at follow up. However, in 132 cases who had suction evacuation with the previously used cannulae the percentage of positive pathogenic cultures increased from 9.09% initially to 32.58% at follow up which is highly significant (Table VI).

Follow up vaginal swab cultures showed increased colonization of vaginal flora by pathogenic microbes comprising of *E. coli* (13.88%), *Staphy. pyogenes* (5.33%) and *Klebsiella* (5.15%) (Table VI).

The pathogenic bacteriae in vagina increase after suction evacuation and remains so for at least two weeks. This colonization can be reduced by effective presterilization with Cidex 2% of new cannulae. Effective presterilization with Cidex 2% for 4 hours of older cannulae is not adequate enough to give low colonization of vagina postoperatively probably

due to appearance of cracks, fissures and angulations in plastic material of the cannulae.

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