

## POST-OPERATIVE MORBIDITY OF VAGINAL STERILIZATION WITH MEDICAL TERMINATION OF PREGNANCY

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Pelvic infection continues to be one of the most distressing problem in gynaecological surgery. This is specially true in cases of sterilization done along with medical termination of pregnancy, particularly because of the patient's emotional response i.e. a sub-conscious refusal by patient's of the idea of terminating the pregnancy and closing the reproductive activity.

On the basis of data collected from the literature it is accepted that the post-operative morbidity of vaginal sterilization is decidedly higher than that abdominal sterilization after medical termination of pregnancy. Boyson and McRae (1949), Ansari and McMaster (1971), and Akhtar (1973) reported a morbidity rate of between 11 to 26 per cent for vaginal sterilization with medical termination. Hulka and Omran (1972) reviewed the literature of vaginal sterilization and noted that the morbidity rate varied from 3.3 to 13.3 per cent. Roe, *et al* (1972) reported an immediate morbidity of 20 per cent in vaginal sterilization. Edward and Hakinson (1973) reported the morbidity

rate in vaginal sterilization to be 11.9 per cent. Poddar *et al* (1976) have noted a morbidity rate of 9 per cent in the surgical termination and vaginal sterilization procedures. While the average overall morbidity rate in abdominal sterilization as reported by various authors is between 5 to 6 per cent.

This study was undertaken to analyse the incidence of pelvic infection after sterilization and induction of Medical Termination and sterilisation. One hundred and sixty-five cases of vaginal sterilization, and 180 cases of abdominal sterilization after pregnancy termination are studied to give comparative incidence of infection in both the series done between January, 1972 to December, 1975. In all the cases termination was done by vacuum aspiration except in 10 cases where abdominal hysterotomy and tube ligation was done. The majority of cases in both the series belonged to the age group of 26-35 years.

Incidence of morbidity is almost 3 times in vaginal sterilization than in abdominal sterilization except in regard to wound infection. Poddar *et al* (1976) in their series of 215 cases of dilatation, evacuation and vaginal sterilization noted the incidence of post-operative complication of febrile morbidity 14, parametritis 2 and tubo-ovarian lump 2.

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TABLE I  
Post-operative Complications

Types of postoperative complications	Termination with abdominal sterilization	Termination with vaginal sterilization
Local wound infection	6 (3.3%)	5 (3.0%)
Endometritis	3 (1.6%)	6 (3.6%)
Salpingitis	2 (1.1%)	8 (4.8%)
Pelvic peritonitis	1 (0.5%)	8 (4.8%)
Septicaemia	Nil	1 (0.6%)
Tubo-ovarian abscess	2 (1.1%)	6 (3.6%)
Urinary tract infection	2 (1.1%)	4 (2.4%)
Thrombophlebitis	Nil	2 (1.2%)
Total morbidity	16 (8.8%)	40 (24.2%)

TABLE II  
Uterine Size in Weeks

Period of gestation in weeks	Abdominal sterilization with termination	Vaginal sterilization with termination
4 — 6	12 (6.7%)	3 (1.8%)
7 — 8	54 (30.0%)	16 (9.7%)
9 — 10	48 (26.7%)	45 (27.2%)
11 — 12	50 (27.8%)	76 (46.1%)
13 — 14	6 (3.3%)	22 (13.4%)
Above 14 weeks (Hysterotomy)	10 (5.5%)	3 (1.8%)
Total	180 (100%)	165 (100%)

TABLE III

Shows the incidence of various types of postoperative complications in both the series done by the Consultant Surgeon and the Resident Surgeon

Types of postoperative complications	Vaginal sterilization with MTP		Abdominal sterilization with MTP	
	Consultant Surgeon	Resident Surgeon	Consultant Surgeon	Resident Surgeon
Local wound infection	1 (0.6%)	4 (2.4%)	2 (1.1%)	4 (2.2%)
Endometritis	Nil	6 (3.6%)	Nil	3 (1.6%)
Salpingitis	1 (0.6%)	7 (4.2%)	Nil	2 (1.1%)
Pelvic peritonitis	1 (0.6%)	7 (4.2%)	Nil	1 (0.5%)
Septicaemia	Nil	1 (0.6%)	Nil	Nil
Tubo-ovarian abscess	1 (0.6%)	5 (3.0%)	Nil	2 (1.1%)
Urinary tract infection	2 (1.2%)	2 (1.2%)	1 (0.5%)	1 (0.5%)
Thrombophlebitis	Nil	2 (1.2%)	Nil	Nil
Total morbidity	6 (3.6%)	34 (20.6%)	3 (1.6%)	13 (7.2%)

The gestational size was between 7 to 12 weeks in majority of the cases in both the series.

The post-operative complications of vaginal sterilization is nearly 6 times more frequent when the operations were performed by the Resident Surgeon than those operated by the Consultant Surgeon, whereas in abdominal sterilization it is 4 times more frequent, as the vaginal sterilization requires experienced operative skill.

It has been noted by both Western and Indian authors that the morbidity rate of vaginal sterilization is much higher when it is combined with medical termination of pregnancy.

The analysis of the present series of cases indicates that major post-operative morbidity is 3 times more frequent in vaginal sterilization than in abdominal one. We feel that the two important factors which perhaps could be responsible for the increase in morbidity in

TABLE IV

*Shows the bacteria recovered from the cultures of post-operative pelvic infection*

	Abdominal sterilization after termination	Vaginal sterilization after termination
Staphylococcus aureus	3	25
Staphylococci		
Anaerobic streptococci	Nil	3
B. Coli	10	12
Staphylococcus albus	3	Nil
&		
B. Coli		

It has been noted from the above table that bacteria recovered from the cultures of swabs of post-operative infected sites are mostly found in the lower genital tract and colon of asymptomatic women. Poddar *et al* (1976) in the bacteriological study of post-operative complicated cases of vaginal sterilization, noted that staphylococcus and E. coli are the main groups of bacteria responsible for morbidity.

#### Discussion

Pelvic infection has always been a formidable problem in gynaecological speciality. Sterilization operation could be accompanied by inflammatory process the severity of which varies with different techniques and the route of operation.

vaginal sterilization are the lack of adequate haemostasis caused by the lack of adequate visibility of the operation field, and incomplete sterilization of the vaginal wall.

The lack of adequate haemostasis in our opinion should be considered to be the most important factor contributing to the development of post-operative infection. The failure to obtain complete haemostasis is undoubtedly related to more vascular pelvic structure in the pregnant patients. The relationship of haemostasis to post-operative infection is well known. Clotted blood produced during small capillary haemorrhage during the process of delivering the fallopian tubes provides an excellent culture media for any bacterial contaminants. This favourable en-

environment permits bacterial multiplication and spread to contiguous structures within the pelvis. This post-operative haematoma may play an additional role in the production of post-operative morbidity. It has been noted that a free haemoglobin enhances the virulence of *B. coli* and other gram negative aerobes while whole red blood cells do not. This haematoma may perhaps be precipitated or aggravated by the surgery performed by senior trained hand. The post-operative complication rate is 6 times more frequent in the hands of partially trained surgeon. Similar findings have been noted in Juspa study and W.H.O. report on Medical Termination and Sterilization.

The final and another important denominator seem to be that the pelvic operation involves the exposure to bacterial contamination from the resident bacterial flora of the vagina and the rectum. In normal women one of the characteristics of the vagina distinguishing it from the upper genital tract is the presence of the abundant bacterial flora, asymptotically present and can become pathogenic with the presence of devitalized tissue and haematomas following pelvic operation.

After analysis the causative organism listed in Table V it seems illogical to believe that more stringent effort at establishing environmental sterility will significantly reduce the post-operative morbidity. Perhaps the only important factor

which may reduce the incidence of morbidity is to limit the exposure of the raw areas of the upper genital tract to the vaginal organisms. Perhaps this is one of the factors responsible for increased incidence of infection with medical termination of pregnancy and vaginal ligation than abdominal sterilization after termination.

From the analysis of the data presented it can be reasonably presumed that the post-operative pelvic infections have a common source of origin from bacteria of tissues freshly traumatized by surgery. The eventual clinical manifestation of infection assumes several forms—a localized vaginal cuff abscess, a diffuse pelvic cellulitis, or an adenexal infection, dependent upon the degree of tissue traumatization and production of haematoma.

#### References

1. Akhtar, M. S.: *Am. J. Obst. & Gynec.* 115: 491, 1973.
2. Ansari, A. H. and McMaster, R. H.: *Am. J. Obst. & Gynec.* 44: 38, 1971.
3. Bcyson, H. and McRae, L. A.: *Am. J. Obst. & Gynec.* 58: 488, 1949.
4. Edwards, L. E. and Hakinson, E. Y.: *Am. J. Obst. & Gynec.* 115: 347, 1973.
5. Hulka, J. F. and Omran, K. F.: *Fertil. Steril.* 23: 633, 1972.
6. Poddar, D. L., Gun, K. M., Sengupta, A. and Bose, S.: *J. Obst. & Gynec. Ind.* 26: 47, 1976.
7. Roe, R. E., Laros, R. K. and York, B. N.: *Am. J. Obst. & Gynec.* 112: 1031, 1972.