

## FAILURES FOLLOWING TUBAL STERILISATION

by

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Tubal sterilisation is a common, effective and permanent method of contraception widely used in our country. Like all contraceptive methods this surgical technique also occasionally fails. Probably the only surgical technique that guarantees sterilisation in future is surgical removal of both ovaries a totally unacceptable procedure or a total hysterectomy. Failure rate of tubal sterilisation varies with the technique employed and timing of sterilisation. The wider the usage of the method, the greater will be the number of failures and if follow up is meticulous over a long time, the greater will be the chances of detection of failure.

### Material and Methods

During the past 18 years (1956 to 1973, both years inclusive) we have performed 10,447 tubal sterilisations. Majority (8617) were done by the abdominal route. Since 1965 vaginal sterilisations

were being done in this institution. During the past three years, vaginal sterilisations have become increasingly popular. We have performed 1830 vaginal sterilisations. At present nearly 40% of all sterilisations are done by the vaginal route in our hospital.

Table I shows the timing and type of

TABLE I  
*Type of Sterilisation Done During 1963 to 1973*

1. Puerperal sterilisation	5670
2. Caesarean section with sterilisation	2155
3. Second Trimester abortion with abdominal sterilisation	429
4. First Trimester abortion with abdominal sterilisation	4
5. Primary abdominal sterilisation	28
6. Abdominal sterilisation along with major gynaecological or other surgery	331
7. First trimester abortion with vaginal sterilisation	627
8. Vaginal sterilisation with major gynaecological surgery	313
Total	10,447

sterilisation procedure in these 10,447 women. Puerperal sterilisation which dominated the field during the early years has after the advent of MTP Act, been relegated to a second place by M.T.P. and concurrent sterilisation. Twenty-six patients reported to us with pregnancy following tubal sterilisation and case records of these patients were analysed.

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### Observations

Previous sterilisation had been done by abdominal route in 15 women (failure rate of abdominal sterilisation being 0.18%) and by the vaginal route in 11 (failure rate of vaginal sterilisation being 0.60%). The apparently higher incidence of failure in vaginal sterilisation group may be partly due to better follow-up care of sterilisation cases done during the past 2-3 years and partly due to the increasing awareness on the part of these women that if they report to us, the unwanted pregnancy could be terminated safely.

Table II shows failure rate in relation to type and timing of sterilisation procedure done in the first instance. Contrary

and consequent excision of a greater length of the tube. In these 2155 cases those who had sterilisation by Pomeroy's technique there were no failures.

Majority of these 26 cases had come to us during the last 2½ years. Fifteen had requested termination of pregnancy, 5 came for delivery, 2 for repeat caesarean section and one each came with intra-uterine death and ectopic gestation. Two patients are having antenatal care at present in our hospital.

Sterilisation-conception interval varied from less than 3 months to as long as 8 years. Fifty per cent of cases reported back with pregnancy in less than 2 years interval. Another 25% came back within 2-3 years after sterilization. Preg-

TABLE II

*Failure Rate in Relation to Type of Sterilisation Done at the First Instance*

	Total No. of cases	No. of failure	Failure rate
Puerperal sterilisation	5670	12	0.21%
Caesarean section with sterilisation	2155	2	0.09%
Sterilisation with major abdominal surgery	331	1	0.30%
T.V.T.	617	6	0.97%
1st Trimester abortion with T.V.T.	889	5	0.56%

to the previous published reports (Eastman, 1964). Sterilisation done along with caesarean section has the lowest incidence of failure rate in our series. In our 2 cases, one had ligation of round ligament and in the other both tubes and round ligaments were found to be intact and untouched. Thus so far none of our series of 2155 cases, who had caesarean section and sterilisation had reported back to us with pregnancy following failure of Pomeroy's sterilisation. Probably this might be due to the awareness among the surgeons about the greater risk of failure of Pomeroy's sterilisation

nancies occurring after 5 years were rare.

Whenever these women sought termination of pregnancy, we terminated the pregnancy on the grounds that the pregnancy occurred due to contraceptive failure. We terminated the pregnancy in 15 women, 5 had normal delivery at term, one patient with recurrent toxæmia reported to us with intra-uterine death and expelled a macerated foetus. Salpingectomy was performed for the patient who came with ectopic gestation. Two women are continuing their pregnancies.

We tried our best to persuade all these cases to undergo laparotomy. We man-

aged to convince 18 of them. One went away after IUCD insertion, 5 refused to adopt any contraceptive measure and 2 are still continuing their pregnancies. Hysterosalpingogram to ascertain the state of tubes, was not carried out as all these women had recently delivered or aborted. It was thought advisable to leave them alone for 6 weeks and later try to get them for hysterosalpingogram and still later to request them to come for laparotomy. All these parous, highly fertile women were disgruntled because they conceived after sterilisation.

Thus in 18 women, laparotomy was undertaken for the dual purpose of ascertaining the state of the tubes and repeat tubal sterilisation procedure. One tube was intact in 6 women, and both tubes were intact in 2. Re-canalisation of tubes following modified Pomeroy's method of tubal sterilisation accounted for 5 pregnancies. Adhesions between lateral end of the tube and ovary following lateral salpingectomy was seen in 4 cases, ectopic gestation in right ampullary end in 1 case was noted. Both the tubal ends were widely separated in this woman who had sterilisation done by modified Pomeroy's method.

Of the 8 cases where tubes were found to be intact, 6 had sterilisation done by abdominal route previously (failure to identify the tubes in 6 out of 8617—0.07%) and 2 had sterilisation done by the vaginal route (failure to identify the tube in 2 out of 1830 women—0.02%). Whenever we found one or both tubes intact, repeat sterilisation was done by modified Pomeroy method. In cases who had re-canalisation of tubes following modified Pomeroy's technique and in those who had lateral salpingectomy done, we had performed total salpingectomy.

#### *Discussion*

It is impossible to ensure proper and thorough follow up of all cases who had sterilisation done over the years in our hospital. In the late fifties and early sixties, our hospital was the only institution for a radius of 100 miles which undertook female sterilisation. Even today we get women coming for sterilisation from 50 or 100 miles away. As such our data regarding incidence of failure rate may not be very accurate. During the past few years more and more women are from nearer areas and we have greater facilities and personnel for follow-up work. In addition the news that M.T.P. is being performed in cases of contraceptive failure would have induced larger number of cases who conceived after tubal sterilisation to report to us. Majority of the 26 women came within the past 2½ years for Medical Termination of Pregnancy. As such our transvaginal tubectomy cases may represent the true incidence of failure rate following sterilisation by modified Pomeroy's technique rather than an increased incidence of failure of sterilisation when done by the vaginal route.

In our institution, modified Pomeroy technique was used routinely both for abdominal and vaginal sterilisations. The incidence of failure rate of transvaginal operations (0.97%) having good follow-up compared well with other reports of failure following Pomeroy technique. Lateral salpingectomy had been done rarely only in those cases with multiple fimbrial cysts or if any difficulty was encountered in forming a knuckle during transvaginal tubectomy. It was surprising that we had encountered 4 failures following lateral salpingectomy (3 by vaginal and 2 by abdominal route). In all the 4 cases, the lateral end of the tube

was adherent to the ovary. Considering the rarity of the procedure, failure rate of lateral salpingectomy was high, thereby suggesting the possibility that lateral salpingectomy might not be a very safe method of tubal sterilisation.

In selecting a suitable method for tubal sterilisation to be employed under any particular circumstances, the failure rate of various techniques must be weighed along with other factors. If patient's life will be endangered by a subsequent pregnancy, then the sterilisation procedure must be very dependable. Eastman advocates Irwing's method and Uchida his technique for such high risk cases. But both these procedures are comparatively difficult and require a good exposure under general or regional anaesthesia. Neither procedure is feasible by the vaginal route.

If indication for the procedure is multiparity alone, then the simplest procedure—e.g. modified Pomeroy technique under local anaesthesia for puerperal sterilisation should be preferred, even if it is attended by a somewhat higher failure rate. We feel that it is not justifiable to submit the case to a greater surgical and anaesthetic risk in order to protect her from a minimal future pregnancy risk. We continue to universally use modified Pomeroy's technique for tubal sterilisations.

#### *Summary and Conclusions*

1. In 10,447 sterilisations done from 1956 to 1973, 26 cases of failure of tubal

sterilisation—11 following vaginal sterilisation and 15 following abdominal sterilisation were encountered.

2. Failure rate in relation to type and timing of sterilisation procedure done in the first instance, and time interval between sterilisation and conception are analysed.

3. The rate of pregnancy and subsequent contraceptive measures adopted are documented. Eighteen cases had laparotomy for ascertaining the state of tube and repeat tubal sterilisation.

4. It was found that re-canalisation of tubes following modified Pomeroy's technique was responsible for 5 pregnancies and adhesions between the lateral end of the tube and ovary to be the cause of failure. In 8 cases tubes were found to be intact, 6 done by abdominal and 2 by vaginal route.

5. There was one case of ectopic gestation in the right ampullary end following sterilisation by modified Pomeroy's method. Considering the rarity of lateral salpingectomy as the method of tubal sterilisation, the failure rate following the procedure appears to be high.

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#### *References*

1. Eastman, N. J.: Editorial note in *Obst. & Gynec. Survey*, 2166, 1964.
2. Garb, A. E.: *Obst. & Gynec. Survey*, 12: 291, 1957.
3. Prystowsky, H. and Eastman, N. J.: *J.A.M.A.*, 158: 463, 1955.