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 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.

<table>
<thead>
<tr>
<th>Type of Sterilisation Done During 1963 to 1973</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Puerperal sterilisation</td>
</tr>
<tr>
<td>2. Caesarean section with sterilisation</td>
</tr>
<tr>
<td>3. Second Trimester abortion with abdominal sterilisation</td>
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<tr>
<td>4. First Trimester abortion with abdominal sterilisation</td>
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<tr>
<td>5. Primary abdominal sterilisation</td>
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<tr>
<td>6. Abdominal sterilisation along with major gynaecological or other surgery</td>
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<tr>
<td>7. First trimester abortion with vaginal sterilisation</td>
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<tr>
<td>8. Vaginal sterilisation with major gynaecological surgery</td>
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</tbody>
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Total 10,447
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 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 cases failure rate

<table>
<thead>
<tr>
<th>Type of Sterilisation</th>
<th>Total No. of cases</th>
<th>No. of failure</th>
<th>Failure rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puerperal sterilisation</td>
<td>5670</td>
<td>12</td>
<td>0.21%</td>
</tr>
<tr>
<td>Caesarean section with sterilisation</td>
<td>2155</td>
<td>2</td>
<td>0.09%</td>
</tr>
<tr>
<td>Sterilisation with major abdominal surgery</td>
<td>331</td>
<td>1</td>
<td>0.30%</td>
</tr>
<tr>
<td>T.V.T.</td>
<td>617</td>
<td>6</td>
<td>0.97%</td>
</tr>
<tr>
<td>1st Trimester abortion with T.V.T.</td>
<td>889</td>
<td>5</td>
<td>0.56%</td>
</tr>
</tbody>
</table>

Sterilisation-conception interval varied from less than 3 months to as long as 3 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. Pregnancy 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 toxaemia 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
THREE OF 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 HYSSTEROSALPINGOGRAM
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 ascer-
taining the state of the tubes and re-
peat 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 follow-
ing 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 modi-
fied 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 vagi-
nal route (failure to identify the tube in
2 out of 1830 women—0.02%). When-
ever 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 six-
ties, 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 re-
garding 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 facili-
ties 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 num-
ber of cases who conceived after tubal
sterilisation to report to us. Majority of
the 26 women came within the past 2
years for Medical Termination of Preg-
nancy. As such our transvaginal tubec-
tomy cases may represent the true in-
cidence of failure rate following sterilisa-
tion 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
fimbria! cysts or if any difficulty was en-
countered in forming a knuckle during
transvaginal tubectomy. It was surpris-
ing 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 Irving'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.

We thank the Dean, Government Erskine Hospital, Madurai for permitting us to peruse the hospital records.

References