EXPERIENCE OF OUTPATIENT LAPAROSCOPIC STERILIZATION IN NEPAL

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The population of Nepal has increased from 9.4 million (1961 census) to 11.2 million in 1972. The male to female ration is 97.6 to 100. This shows that the female population is more than the male. Nortman (1971) found that there are 2.8 million women of childbearing age between 15-45 years. Out of this 2.8 million women, 02.4 million are married. The maternal mortality rate is high--50 per 1000. The birth rate is 40 per thousand and the death rate is 20 per thousand. Therefore, the population increase rate at present is 2% per year. Hence, if there is no decline in the fertility rate, the population will be 23 million by 1995, in 24 years' time.

A family planning program was already started some enthusiastic volunteers in 1959 and the International Planned Parenthood Federation has been helping the Family Planning Association of Nepal. His Majesty's Government's Health Services started the Maternal and Child Health Care in 1963 and in September, 1966, incorporated the Family Planning Programme within it.

From the statistics obtained from the Research Planning and Evaluation Centre of His Majesty's Government's Nepal Family Planning and Maternal Child Health Project. the following data is shown about the percentage of acceptor of various methods of Family Planning in Nepal.

In Men--Vasectomy--12.5%. condom--49.5%

In Women-- Pill-- 35.2%, I. U. C. D.--2.8%

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From the above data, it is obvious that sterilization is popular in men. Vasectomy was being performed even before His Majesty's Government's Family Planning Programme was started in hospitals and private clinics. Now vasectomy is done in family planning clinics, hospitals, and private clinics. In hilly and remote areas, teams of doctors and paramedical personnel fly by helicopters and perform hundreds of vasectomy. Nearly 4,000 cases of vasectomy are being done every year.

In comparison, to male sterilization, tubectomy (female sterilization) is negligible. There are no statistics on it. From the statistics of my maternity hospital, where in 1971 only 12 cases of postpartum tubal sterilization was done in 3,000 cases of delivery, these 12 cases of sterilization included 3 cases of repeat Cesarean sections. This is enough to show the reluctance on a woman's part to undergo postpartum tubal sterilization, even when this is the best time for motivation and operation. The following are the causes for such attitude of our Nepalese women towards tubal sterilization.

1. The woman and the family feel that the mother is already weak due to the childbirth and the operation might further weaken her condition.
2. The operation involves further delay in the hospital and thus keeps her away from the near and dear ones.
3. The woman feels that the scar will prevent her from doing household work and thus make her a burden to the family.
4. For tubal sterilization, the woman has to get a written consent from her husband and while discussing the problem the man usually comes forward for vasectomy.

But since November, 1971, a new landmark has come in the female sterilization programme in Nepal. On 17 November, 1971, I introduced Laparoscopic sterilization in the Maternity Hospital, with the kindness of Dr. Clifford R. Wheelless, Johns Hopkins Hospital, Baltimore, Maryland. Since then, till the end of November, 1972, two hundred women have undergone laparoscopic sterilization. This is being done as an outpatient programme as the woman is not admitted and goes home within two hours of the operation.

MATERIAL AND METHODS

Patients were sent from our family planning outpatient department and from the gynaecological ward after evacuation and few were postnatal cases within 1-1½ months after delivery, as advised. Sterilization was done for mostly for multiparity as a permanent method of family planning.

Apparatus- A 10 m m. 180° fiberoptic operating laparoscope was used, through which was

inserted an alligator insulated biopsy forceps for electrocoagulation of the fallopian tubes.

For pneumoperitoneum-- 168 cases had CO₂ and the rest 32 cases had NO₂ and CO₂ was not available.

For premedication-- 50 patients got 50 milligrams of Meperidine hydrochloride (Pethidine Hydrochloride or Demerol) and 10 milligrams of Diazepam (Valium) intravenously. The rest 150 patients received only 75 milligrams of Demerol intravenously as Valium was not available.

Technique-- This is a single puncture technique described by Dr. Wheelless and Dr. Bruce Thompson since May, 1972, Johns Hopkins Hospital, Baltimore, Maryland.

The success of the operation and avoidance of complications depend on proper technique. Therefore, the operations is being described in detail.

The patient was asked to report in the morning with an empty stomach. She was given the premedication intravenously and then placed in the lithotomy position. The abdomen was cleaned with Iodine solution and draped. About 12-15 cc of 1% zylocaine or novocaine was infiltrated at and around the lower skin of the umbilicus thoroughly. A sim's speculum was placed in the vagina after a pelvic examination and the cervix was grasped with a tenaculum. After introducing a sound, a Rubin's cannula was introduced in the uterine cavity.

Two towel clips were placed 3 cm apart in the lower rim of the umbilicus and a 2 mm incision was made with a sharp knife on the skin. A number 16 gauge Touhy needle was inserted through the incised area into the peritoneal cavity and was connected to the wisap pneumoperitoneal insufflator. After making sure that the needle was inside the peritoneal cavity by means of monitoring the insufflator pressure at 10 mm of Mercury, gas was filled up at the rate of one litre per minute. The needle was withdrawn after filling 1½-2 litres of gas. The incision was increased upto 1 cm and the trocar with the trocar sleeve was introduced into the peritoneal cavity. By pressing the side knob on the trocar sleeve, the escape of gas indicated the correct position of the trocar sleeve. The operating fiberoptic laparoscope was introduced with the biopsy forcep. The inspection of the pelvic organs and the uterus with its appendages was facilitated by the manipulation fo the Rubin's cannula with the tenaculum from below. The tube was grasped 1½-2 cm near the uterine cornu at avascular area and warning the patient to expect a slight pain, the tube was electrocoagulated using the cutting current. A piece of the burnt tube was removed. If there was any bleeding at the site, it was coagulated. The tube on the other side was treated in a similar way. The fiberoptic laparoscope was withdrawn leaving the trocar sleeve for the gas to escape. The table was straightened out and the Rubin's cannula was withdrawn. The small incision on the umbi-

licus was closed with one 3/0 chromic catgut and bandaid applied. The patients was wheeled out of the room to the observation ward. She was discharged within two hours with 6 tablets of analgesic tablets and a slip with a few instructions in Nepali. These instructions directed the patient to expect some pain, which could be relieved by the tablets supplied, to expect bleeding per vagina, for a few days in those whom sterilization was done between 5-7 postmenstrual day and to report after the next period. I found these instructions very useful as it saved unnecessary calls from the patients. The instructions included to take off the bandaid after a few days so she did not have to come to the hospital and to avoid intercourse at least for two weeks as some patients complained of pain.

Except those on pills and with I. U. C. D., post abortal and late postpartum, the women were asked to come between 5-7 days after the period.

Result

1. Post Abortion (4-5 days after evacuation)	12 cases
Late Postpartum (30-45 days after delivery)	20 cases
Internal Sterilization	168 cases
	<hr/> 200 cases

So 74% of women had interval sterilization.

2. Age--age varied between 20-48 years. Mean age was 32. 4 years.

Age	20-24 yrs	25-29 yrs.	30-34 yrs.	35-39 yrs	40-48 yrs.	Total
Number of women	15	54	64	41	26	200
Percentage	7.5%	27%	32%	20.5%	13%	100%

3. Parity:

Number of living children ranged from 2. 11.

The average number of total pregnancies was 5%.

The average number of living children was 4.

The average number of living male child was 2. 4.

The average number of living female child was 1. 9.

4. Method of Contraceptive used before sterilization:

87 women out of 200 were using contraceptive methods i. e. 43% were already motivated to use contraceptives.

Pill- 60 (3 women were on pills for 1 years)

I. U. C. D. - 19 (2 women had I. U. C. D. for over 6 years)

Condom - 2

4. The use of Co₂ and No₂ had no difference in this series.

Complications

1. Bleeding- 11 cases had slight oozing from the mesosalpinx which were coagulated and were not serious enough as to need admission.

2. Incidental- One had perforation with the Rubins' Cannula as the uterus was hyper-involutated and small. After withdrawal of the cannula, the bleeding was nil but she was admitted for one day for observation as she came from a far-away village.

3. Failed Laparoscopy- 2 cases. In one case only one tube could be sterilized due to the uncooperative attitude of the patient but her husband had vasectomy afterwards. In the second case, she had left tuboovarian mass so she had laparotomy afterwards and removal of the mass.

4. Involvement of the bowel. In one case it was suspected that a small portion of the small intestines was touched as the patient jumped while cauterizing. She was admitted and treated conservatively for two weeks and was discharged with no ill effects.

5. Pregnancy. Only 1 case, i. e., .5% of cases, became pregnant. This was an interesting case as she became pregnant after 10 months of the laparoscopy. She was the first 25th case and came in the beginning of 1972 November with 2½ months of amenorrhea. She was found to be pregnant and after evacuation, she had hysterosalpingogram. The hysterosalpingogram showed partial patency on the left tube. She had relaparoscopy and it was seen that the left tube was fulgurated incompletely and only the upper part of the tube was excised, thus leaving a part of the tube as shown in the diagram below:

Wheless and Thompson reports two such cases causing pregnancy failure in the memorandum of 2 February 1972. To prevent such complications, following precautions were

suggested by them.

- a. The tube is fulgurated and a segment is removed.
- b. The deeper segment of the tube or mesosalpinx is fulgurated to insure complete separation and to extend the blanched area deeper into the mesosalpinx without cutting a piece out.
- c. The proximal stump is regrasped and fulgurated without cutting a piece out.

In 4 more cases of pregnancies, two were sterilized on 18th and 22nd days of the period as these two women has given wrong information for fear of refusal so were in the luteal phase of pregnancy. The other two were already pregnant and the diagnosis was missed, though they were investigated for pregnancy. One had negative pregnancy test of urine and the second had withdrawal bleeding with one injection of Duogynen Fort as she was overdue 5 days. All 4 had evacuation and only one had hysterosalpingogram after two months of evacuation. The hysterosalpingogram showed perfectly blocked tubes, The other 3 refused hysterosalpingogram for the cost, but so far on regular follow up have not been pregnant again. These last 4 cases do not show the failure of laparoscope as all 4 were already pregnant at the start.

6. Previous operations. Two cases who had previous abdominal operations presented no difficulties. One had left salpingectomy for ruptured ectopic pregnancy five years ago and the second had lower uterine Cesarean section two years ago for Placenta Praevia.

7. Failed cutting current. In one the cutting current failed so she had only electrocoagulation. She had hysterosalpingogram two months later showing perfectly blocked tubes.

8. Amenorrhea. Eight cases have come off and on with history of amenorrhea for 2-3 months. These cases respond easily to one injection of Duogynon or even to tablets. I fail to know the cause of the amenorrhea. Their age group is not yet near menopause, all are below 40 years of age.

SUMMARY AND CONCLUSIONS

Experience of 200 cases of outpatient single puncture laparoscopic sterilization is presented.

The result was satisfactory with only 5% failure rate of pregnancy.

None required laparotomy. The minor complications can be avoided by proper technique. By choosing avascular area and gentle extraction of the burnt segment, oozing can be prevented. Proper pelvic examination and measuring the size of the uterus and determining the position can prevent the perforation.

The whole procedure is an outpatient operation. It takes 20-25 minutes from the

time of wheeling in of the patient, including 10 minutes of sterilization of the instruments in 10% of Formaldehyde solution till the wheeling off of the patient to the observation ward. I have been doing once a week only in the outpatient operation theatre.

This is the best method for our Nepalese women for interval sterilization as it is next to impossible to catch them for immediate postpartum sterilization for causes already stated. It is simple, less expensive as it does not involve hospital stay, general anesthesia and a big abdominal scar.

In comparison to vasectomy, of course it cannot be done in camps, health centres, and place where there are no electricity and facilities to do laparotomy. It requires an expert with the skill to do laparotomy if needed and also a table which can be put in Trendelenburg position and in lithotomy position. It requires also gas for pneumoperitoneum, but few reports have appeared of atmospheric air being used. This use of atmospheric air will further make it cheaper, especially for a landlocked country like Nepal where gas has to be brought from India, which sometimes takes months.

In spite of all the difficulties mentioned above, this method has already become popular in Nepal. Every method of contraception has its own merits; one cannot be substituted for another; nor can all be suitable for all countries. In a country like Nepal, where only vasectomy was being done for sterilization, laparoscopy has opened a new era for interval sterilization in females.

In my opinion, this type of laparoscopic sterilization can be introduced in developing countries like ours, where the population problem is not so acute as in some neighboring countries.

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