

ECTOPIC GESTATION IN PRESENCE OF INTRA-UTERINE LIPPES LOOP

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Since Lippes (1965) recommended his flexible, poly-ethylene intra-uterine loop as a safe, inexpensive and effective contraceptive device, it has been extensively used in India with high hopes and much enthusiasm. Lippes loop has indeed many advantages. It is not only cheap, reliable, acceptable, simple to insert and easy to remove when further pregnancy is desired, but it also needs minimum patient-care and co-operation. It was, therefore, considered as most suitable for mass use in the developing countries like ours. Unfortunately, the initial enthusiasm and the popularity of the loop seem to be gradually declining now-a-days because of certain complications such as menorrhagia and other menstrual disorders, pelvic pain, leucorrhoea, chronic endometritis, spontaneous expulsion, uterine perforation, etc. However, some of the reported complications are likely to be due to wrong selection of the cases, incorrect size of the loop or their improper or faulty insertion and may be preventable or amenable to

treatment. On the other hand, a few complications, though very rare, are of serious nature and cannot be overlooked. Perforation of the uterus by the intra-uterine contraceptive devices has been reported by many authors almost every year since 1964; and some writers (Hingorani, 1968; Rohatgi and Katiyar, 1968; Sabharwal, 1968; Kunders, 1969; Rao and Srinivasan, 1969) have recently referred to the literature and discussed its incidence. It needs no repetition here. But the disquieting reports of another equally serious complication, namely ectopic gestation after loop insertion are now appearing in the literature and deserve due attention.

Review of Literature

From what we could gather from the available literature, it appears that it was perhaps Hall and Stone who in 1962 first reported a case of ectopic gestation amongst six women who got pregnant with IUCD in the uterus. In 1964, the same authors reported another ectopic among 36 cases of pregnancy with IUCD in situ. In the same year Tietze (1964) observed that 7 out of 149 pregnancies that occurred with IUCD in the uterus were ectopic and Satherthwaite and Aviline (1964) reported

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one ectopic among 18 women and Robert Hall (1964) two ectopics among 52 women who had conceived with the loops or IUCD in the uterus. The fifth Progress Report of the Co-operative Statistical Programme for Evaluation of Intra-uterine Contraceptive Devices presented by Tietze in 1965 shows that among 11,222 first insertions covering a period of use for 85,782 woman months there were 187 pregnancies, and as many as 14 out of 99 pregnancies that occurred with the loops in position were ectopic. In the series of 7,000 cases of loop insertions reported by Lippes in 1965 there were 23 pregnancies with the loops in situ and of these, 4 were ectopic. In 1965, Wilson *et al* also reported 5 cases of ectopic gestations out of 25 pregnancies with the loop in position.

In 1966, Chen and Tako reported six cases of tubal pregnancy among women wearing loops. They came across these six cases in Hong Kong within a period of seven months. Two of them were acute ectopics with more than two pints of blood in the peritoneal cavity and the rest were of subacute variety with collection of blood around the affected tubes or in the pouch of Douglas. In all but one, the right tube was the seat of ectopic gestation. In the same year Hall (1966) reported 3 cases of ectopic out of 92 pregnancies with IUCD in situ, and Denny (1966) reported one case of ectopic pregnancy which was first mistaken for salpingitis, the pain and bleeding being attributed to the contraceptive device inside the uterus.

From India, Ajinkya and Dhurandhar recorded in 1967 the first case

of ectopic gestation with the loop in position. The right tube was affected and ruptured and the whole peritoneal cavity was full of blood clots. In 1968, Philips and Kaur reported another case of ruptured ectopic in the left tube with the loop in situ. In the same year, Chakraborty *et al* (1968) recorded two cases of tubal pregnancy after loop insertion. In 1969, Jacob and Bhargava reported a case of tubal pregnancy in a woman who had been wearing the loop for two and half years and a report of another two cases of ectopic pregnancy with loops in position was published by Tamaskar (1969). Four cases of tubal pregnancy with the loops in situ detected and treated in the Gauhati Medical College Hospital during the last one year are reported here.

Case 1

Mrs. B. D., 24 years, para 2, last child 2 years ago, was admitted on 21-3-68 with the complaints of pain in the lower abdomen for 18 days and bleeding per vaginam for 10 days following an amenorrhoea of six weeks. She had a Lippes loop inserted two months after her last delivery. Her menstruation had since been normal. L.M.P.—23-1-68. On examination the patient looked pale, pulse-92/min, B.P.—110/65 mm Hg. Temp. 36.5°C Hb-7.8 gm%, no evidence of leucocytosis.

Lower abdomen-tender with rigidity on the left side. Per vaginam, uterus-bulky and anteverted, movement-painful. A tender soft irregular mass was felt in the left and posterior fornices. The nylon thread of the intra-uterine loop could be seen and felt through vagina. Ectopic pregnancy in the left tube was suspected and confirmed at laparotomy on 23-3-68. Left salpingectomy was done and the loop was removed vaginally. The patient had a smooth convalescence and was discharged on 8-4-68. She soon got pregnant and delivered spontaneously at term on 12-6-69.

and this time had a post-partum sterilization done.

Histopathological examination of the specimen confirmed tubal pregnancy and showed evidence of endo-salpingitis.

Case 2

Mrs. B. S., 29 years, para 4, last child 4 years ago, was admitted on 22-5-68 with severe pain in the lower abdomen for one day and slight vaginal bleeding for 3 days. She was fitted with a Lippes loop 2 years ago and suffered from menorrhagia since then. L.M.P. 2-4-68. On admission, the patient was pale, restless and in shock. Pulse 120/min. volume and tension-low. B.P. 90/60 mm Hg. Temp. 36.0°C.

Abdomen-distended with marked tenderness and rigidity over the lower abdomen. Per vaginam-uterus-slightly bulky. All the fornices were very tender with fullness in the pouch of Douglas, but no definite mass could be palpated. The nylon thread of the loop was visible. The provisional diagnosis was ruptured tubal pregnancy, and on immediate laparotomy, the whole abdominal cavity was found to be filled with blood. There was profuse intra-abdominal bleeding from the ruptured left tube. Left salpingectomy was done. The loop was taken out per vaginam. The patient was discharged cured on 4-6-68.

Histopathological examination of the specimen confirmed tubal pregnancy and showed chronic inflammation of the tube.

Case 3

Mrs. P. D., 30 years old, para 9, last child 4 years ago, was admitted on 4-10-68 with irregular vaginal bleeding, pain and feeling of a lump in the lower abdomen. She had a Lippes loop inserted 3 years ago and her menstruation had been regular although the flow was rather heavier. Her last regular period started on 28-6-68 with unusual pain in the lower abdomen and since then the pain and vaginal bleeding were continuing irregularly and she first felt a lump in the lower abdomen 13 days back.

On examination, the patient was anaemic, pulse 96/min. B.P. 110/80 mm. Hg; temp-normal. A soft, tender and irregular mass, about 5½" x 4" in size, was palpable in the lower abdomen. On vaginal examination, a retroverted bulky uterus was

found to be adherent to a soft tender and irregular lump occupying the whole pelvic cavity and continuous with the abdominal mass. A provisional diagnosis of ectopic pregnancy with pelvic haematocoele was made. On laparotomy on 29-10-68, the left tube was found distended with blood clots and enclosed in the pelvic haematocoele and the right tube also contained blood. Left salpingo-oophorectomy and right salpingectomy were performed. The loop was removed vaginally at the end of the operation. She had an uneventful recovery and was discharged from the hospital on 8-11-68. Histopathological examination confirmed the diagnosis of ectopic pregnancy in the left tube.

Case 4

Mrs. A. R., aged 25, para 5, last child 4½ years ago, was admitted on 6-12-68 with pain in the lower abdomen for 7 days and bleeding per vaginam for 5 days following a period of amenorrhoea of 5 weeks. She had a loop inserted 3 years 4 months ago. Four months after the loop insertion, she had menorrhagia but it responded well to treatment. L.M.P. 26-10-68. Her general condition was fairly good pulse, temperature and blood pressure were normal, but she was anaemic, the haemoglobin being 7.5 gm%. There was slight tenderness over the lower abdomen especially on the left side.

Vaginal examination—uterus anteverted, normal in size; movement of the cervix and uterus was painful and a soft tender mass was palpated in the left fornix. The nylon thread of the loop was protruding into the vagina. Ectopic pregnancy was provisionally diagnosed, and a laparotomy was performed on 7-12-68. It was a case of tubal abortion on the left side; ovaries and right tube were normal. Left salpingectomy was done and the loop removed through the vagina. She had a smooth convalescence and was discharged from the Hospital on 19-12-68. Histopathological examination of the specimen confirmed the diagnosis of tubal pregnancy.

Discussions

It is a known fact that in a small percentage of the cases, the intra-

uterine contraceptive device will fail to prevent pregnancy. The reported failure rates show wide variations 0.46 per cent (I.C.M.R., 1962), 0.84 per cent (Das, 1967) 2.9 per cent (Lippes, 1965), 4.5 per cent (Tietze, 1965), 6.3 per cent (Satherth Waite and Aviline, 1964) and from 2.5 (Oppenheimer, 1959) to 8.1 (Rutherford, 1961) per 100 women years. This incidence of ectopic gestation amongst women who conceive with the loop in situ seems to be unusually high. Table I shows some of the reported incidence of ectopic pregnancy after loop insertion. While the incidence of ectopic gestation in general is not more than one in 200 pregnancies, it will be noticed in the table that Tietze (1965) observed 14 ectopic pregnancies in 99 women who got pregnant with the loops in position. In the Gauhati Medical College Hospital, we have come across four cases of tubal pregnancy amongst 21 women who had conceived with the loops inserted elsewhere or in our own family planning clinics during the last four years.

Why the loop should predispose to ectopic pregnancy is not definitely known, as it is also not known with certainty how the loop prevents pregnancy. If the intra-uterine contraceptive device acts by inducing increased tubal peristalsis and quick transport of the ova (Mastroianni and Hongsanand, 1964; Marguiles, 1964), then there should rather be less chance for tubal pregnancy. The view that the morphological, histological, bio-chemical and enzymatic changes produced in the endometrium due to the presence of the loop inside the uterine cavity are responsible for failure of pregnancy (Bonney *et al* 1966) appears to be more plausible. It has also been suggested that the presence of the loop inside the uterine cavity leads to cellular changes and alteration of cell permeability and interferes with the utilization of hormones locally and thus prevents nidation of the fertilized ovum. If the loop does not interfere with ovulation and fertilization and if the tubal mucosa which is not in contact with the loop remains un-

TABLE I

Showing the incidence of ectopic gestation with IUCD or loops in situ

Authors	No. of preg. with I.U.C.D. or loops in situ.	No. of ectopic gestation with I.U.C.D. or loops in situ	Authors	No. of preg. with I.U.C.D. or loops in situ	No. of ectopic gestation with I.U.C.D. or loops in situ
From abroad			From India		
Hall et al, 1962	6	1	Ajinkya and Dhurandhar, 1947	—	1
Tietze, 1964	149	7	Philips & Kaur, 1968	—	1
Tietze, 1965	99	14	Chakraborty et al, 1968	—	2
Satherth Waite et al, 1964	18	1	Jacob and Bhargava, 1969	—	1
Hall, 1964	51	2	Tamaskar, 1969	—	2
Hall, 1966	92	3	Present report	21	4
Lippes, 1965	23	4			
Wilson et al, 1965	25	5			
Chen & Tako, 1966	—	6			
Denny, 1966	—	1			

affected, there is nothing that can prevent tubal pregnancy. One has only to account for its higher incidence. Could the frequent and strong peristalsis of the tubes and contraction of the uterus in the presence of the loop sometimes retard the passage of the fertilized ovum and lead to a tubal pregnancy? The loop inside the uterine cavity may sometimes block the cornual openings of the fallopian tubes and obstruct the entry of the fertilized ovum into the uterine cavity and may thus favour ectopic pregnancy. Pujari *et al* (1968) observed evidence of chronic endometritis in five out of 22 women after loop insertion. It is possible that the infection from the uterine cavity spreads to the tubal mucosa and the sub-clinical endo-salpingitis may be responsible for tubal pregnancy in some of the cases. Two of our four cases of tubal pregnancy with the loops in situ had definite evidence of infection in the fallopian tubes, although none gave a history suggestive of puerperal sepsis or previous pelvic infection.

After the insertion of the loop, both the patient and her doctor may feel complacent and secure against pregnancy-uterine or extra-uterine, and the short period of amenorrhoea, abdominal pain and vaginal bleeding caused by the ectopic pregnancy may be mistaken for symptoms produced by the loop, sometimes with disastrous results. But for the timely diagnosis and prompt treatment, at least one of our patients (Case 2) would not have survived. The possibility of this rare, but dangerous, complication should, therefore, be always borne in mind and all cases with ab-

dominal pain and irregular vaginal bleeding after loop insertion must be carefully investigated by experienced gynaecologists.

This report is meant not to discourage the use of the loops but to put our family planning workers on guard. After all, it is a very rare complication and can be successfully dealt with if diagnosed in time. It should be realised that nothing good or great can be gained without taking even a small calculated risk. So long as its advantages outweigh the disadvantages, the loop will continue to occupy an important place in our national family planning programme for the sake of greater good for the greater number of our teeming population.

Summary

Ectopic gestation following insertion of Lippes loops is a rare but serious complication. Four such cases of tubal pregnancy with the loops in situ have been reported.

The higher incidence of tubal pregnancy after loop insertion and its possible causes have been discussed.

The importance of bearing in mind the possibility of ectopic gestation after loop insertion, careful examination of suspected cases and of early diagnosis and prompt treatment has been stressed.

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