POST-PARTUM LOOP INSERTION*

(A Clinical Study)

by

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The strength of a country depends on the strength and well-being of its basic unit, a family. Almost all Indian families have limited resources and a small size of a family is the only solution for adequately supplying the basic needs of feeding, clothing and education to its members. The rate of population growth has to be reduced considerably since our mortality rate has fallen out of proportion to the population increase. According to demographers, to-day's 439 million population will become 530 million by 1971, 680 million by 1981, if it is allowed to grow at this rate. Government and public enthusiasm as well as recent research and experience have shown that Lippes loop popularly known as the "The Loop" is the most acceptable solution to a country like ours for the control of population.

History

The loop has got an interesting historical background, since the notion of placing a foreign body in the uterus dates back to the days of ancient Egyptians, who used to put a smooth oval stone in the uterine cavity of female camels before starting on long desert voyages lest they become lazy due to pregnancy. Guttmacher makes a reference to such a practice amongst primitive tribes as has also been described by Hippocrates. The idea became novel due to introduction of silkworm gut rings by Gräfenberg in 1929 and plastic wheels by Ota in 1959. Different materials and shapes were tried like fine silver or gold wire by Gräfenberg (1929), Razak (1962) and Jackson (1961, 1962), silkworm gut by Oppenheimer (1959), stainless steel rings by Hall and Stone (1962), nylon thread rings by Zipper (1955). Ishihama (1959) reported 10,000 successful insertions of Ota's plastic wheel in Japan. It was in 1962 that Margulies, Lippes and Birnberg devised polyethylene spiral, loop and bow respectively, loaded with barium which could be detected by X-rays. Beolocater is another electronic device for locating the internally displaced devices by probe and a recorder. Since spirals are associated with bleeding and bows with tendency to penetrate the myometrium, the loop is by far the best device.

Mechanism of action

No definite mechanism of action is

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yet known as to how the loop prevents conception. Different animal experiments postulate that ovulation, ascent of spermatozoa in the cervico-uterine canal and even fallopian tubes do take place. Mastroianni (1965) has demonstrated overstimulated tubal motility causing a rapid transit of a fertilized ovum to the uterine cavity in a pronuclear stage so that it is incapable of penetrating the uterine mucosa and embed. Margulies and Doyle (1963) exemplified the appearance of deciduomatous response round about the loop in rat uteri which definitely interferes with implantation. In human endometrium the response may differ, since it is progestational with increased superficial vascularity and oedema thus creating unfavourable biochemical environment in which the ovum gets disintegrated. Noyes and Bonney, however, have found less failure rates associated with devices which encompass the uterine cavity snugly, leaving no place for nesting of a fertilized ovum, thus interfering with its accommodation.

Aim

A pioneer study of inserting loops in the postnatal cases was thought of since the loop was found to be the most effective, reliable, inexpensive and safe method requiring one act of decision and contraception to guard continuously against pregnancy, permitting a simple return to fertility. Moreover, it is not associated with any clotting defects, liver damage, stomach upsets or carcinogenicity. Foreign materials are used in any part of human anatomy, since days immemorial, for cardiovascular, orthopaedic and surgical procedures, with no evidence of carcinogenicity developing later on. The loop is particularly suited for use in densely inhabited areas by persons of low socio-economic status. Women who most need and desire contraception are never seen by medical or paramedical personnel during their reproductive life except in relation to pregnancies, delivery or abortion and puerperal hospitalization.

Certain goals were kept in mind in studying the puerperal insertions as to whether early puerperal uterus would accept and retain the IUCD and whether such a procedure would result in any significant complications.

Study

A preliminary report of a pilot study of such insertions done at Medical College and Daga Memorial Hospitals, Nagpur, is presented here. Patients who desired this device and were free of any puerperal morbidity were included in the series. They were instructed to be alert for the expulsion of the device and report if there is any cramp-like pain in the lower abdomen, increased lochial flow, menorrhagia or spotting in the first few menstrual cycles or vaginal discharge. Patients had a complete pelvic examination and Lippes loop was inserted under complete aseptic precautions leaving the threads long.

This study consists of 225 primary insertions done at Medical College Hospital from 15th August, 1965 to 15th October, 1966, and 179 insertions at Daga Memorial Hospital,

Nagpur, from 1-11-1965 to 15-10-1966. These will be referred to as the first and second series hereafter. These cases are analysed according to age, number of living children, delivery or abortion and period of insertion to study the status of this device.

Table I indicates that maximum insertions were done in 21-30 years age group. Patients desired to accept a reversible method of birth control rather than sterilization. In the later decade of reproductive period women seemed to be hesitant to get an operative procedure done as they were usually afraid of an operation and put forth some excuse which made loop insertion the only alternative for them. Younger age group responded favourably and seemed to accept loop as a reversible and harmless contraceptive in preference to any other conventional method.

Number of living children was next considered and maximum insertions were done in women with 2-4 living children (Table II). It was accepted by those with one living child since this is a reversible and safe measure. As is indicated in Table II the device was accepted by women with even more than 5 children on the above grounds.

In the first series, the insertions were carried out in 7 cases (3.11 per cent) after an abortion, 209 cases (92.88 per cent) after a normal delivery, 3 (1.33 per cent) after a forceps delivery and 6 (2.66 per cent) after a caesarean section. The period of insertion can be studied from Table III.

Maximum insertions were done in the first and last three weeks of the study as many patients could be motivated while in the hospital or visiting the post-natal clinics. In the second series most of the insertions were done in delivered cases and mostly on the fourth day of delivery. Of these, 3 had heart disease, 1 had tuberculous spine and I had pulmo-

TABLE I

Age group	Medical College & Hospital, Nagpur		Daga Memorial Hospital, Nagpur	
	No.	Percentage	No.	Percentage
20 years	21	9.33	6	3.35
21 - 30 years	173	76.88	132	73.74
31 - 40 years .. .	31	13.77	41	22.90

TABLE II

No. of children	Medical College & Hospital, Nagpur		Daga Memorial Hospital, Nagpur	
	No.	Percentage	No.	Percentage
1	25	11.11	6	3.35
2-4	138	61.33	136	75.17
5 & more	62	27.55	37	20.67

TABLE III

Days	Medical College & Hospital, Nagpur		Daga Memorial Hospital, Nagpur	
	No.	Percentage	No.	Percentage
0 - 7	128	56.88	171	94.97
8 - 14	25	11.11	nil	nil
15 - 21	3	1.33	4	2.33
22 - 45	69	30.66	4	2.33

nary tuberculosis indicating the need for contraception.

Results

A regular follow up is essential to decide the effectiveness of the loop; 107 cases in the first series and 64 in the second series could be followed up over a period varying from 1 to 15 months.

Of the patients followed up, no complications were seen in 55 cases in the first series and 29 cases in the second series. Bleeding and spotting were recorded in 30 cases (17.54%). Patients had to be interrogated in detail to get this information since they attributed this to the aftermath of delivery and were reluctant to mention it as a complaint for fear that the loop may be removed. Leucorrhoea was complained of by 17 women (9.35%) over a variable period. In three cases the patients had cervical erosion which required removal of the loop prior to cauterization. Backache was complained of by 8 women (4.67%) and pain in abdomen by 4 women (0.99%). These could be relieved by analgesics, antispasmodics etc.

Spontaneous expulsions were seen in 29 cases (16.95% of 171 cases) of whom 15 cases returned for voluntary reinsertions; besides one case had a loop lying in the cervical canal and in four cases the loop was internally displaced. Here one case can be cited who had loop insertion elsewhere during lactational amenorrhoea when she must have been two months pregnant. She delivered after 7 months a term baby with loop in the membranes. The implicit faith of the patient in the loop could be appreciated by her volunteering for reinsertion post-partum taking no risk of any possible pregnancy as before.

Removals

Of 22 cases, the loop was removed for husband's insistance in 5 cases, patient's losing confidence in 8 cases, leucorrhoea in 3 cases and profuse menorrhagia in 6 cases.

Comments

Early puerperal insertion offers little difficulty as the uterus is generally anteflexed to a slight degree for several days even in those women whose uteri are normally retroverted. The uterine cavity is capacious and the anterior wall bulges into this space often creating an obstruction to the passage of a sound or an introducer; pulling the cervix downwards facilitates the placement of the loop high up into the uterine cavity. This

bulging anterior wall may also be helping to retain a device placed high up in the uterus.

Though the contracting post-partum uterus generally evacuates retained placenta, blood clot and debris quite readily, the expulsion rate was 16.95% (out of 171 followed up cases). Liss and Andros (1966) reported 8 per cent in puerperal cases and Zipper 10.9 per cent and Horne et al 16 per cent in non-puerperal cases. Complications like spotting and vaginal bleeding are comparable with those of various investigators in non-puerperal cases (Table IV).

direction as also a regular follow up. If 83.05 per cent delivered cases retain the loop in spite of normal behaviour of a post-partum uterus, there is a place for sending the post-partum cases home with a baby in arms and a loop in the emptied womb.

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TABLE IV

Complications	Percentage of post-partum cases	Percentage of non-puerperal cases
Leucorrhoea	4.20 (9.35%)	4.6
Bleeding	7.42 (17.54%)	10.3
Backache & pain in abdomen	3.21 (4.67%)	4.0
Spontaneous expulsion ..	7.17 (16.95%)	4.6
	(In 171 followed up cases)	

Summary and Conclusions

Status of the loop being well accepted, a preliminary report of post-natal insertions is presented in 404 cases. This study is analysed as per age, number of living children, type of delivery and period of insertion. Loop seems to be acceptable to any age group with any number of children to space the family or to limit the family, by using it even for longer periods. The post-partum reactions to the loop do not differ in any way from those that are associated with loop insertions done in non-puerperal uteri.

Motivation is essential in this

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