A COMPARATIVE STUDY OF POSTPARTUM, PUERPERAL AND NON-PUERPERAL INSERTIONS ON LIPPES LOOPS

by

AMY D. ENGINEER,* M.D., F.R.C.O.G., F.R.C.S.,

and

K. SANWAL,** M.B.B.S.

The promise of success in the mass control of fertility in poorly motivated populations that was raised by the revival of interest in Intra-Uterine Contraception in 1959 has not been fulfilled to the extent anticipated. The principal hurdles in the mass acceptance of the programme have been the menstrual disorders and bleeding that follow in the wake of insertion. Expulsion of the device, pain, discharge, perforation of the uterus and the occurrence of extra-uterine pregnancies are other complications, the incidence of which has been variously reported by different observers. (W. H. O. Technical Report, 1968).

Our study at Queen Mary's Hospital Lucknow, was initiated in January 1964 and by 31st Dec: 1968, 2841 insertions had been done in 2688 women with parities ranging between 1-14 in the age group of 15-45 years. Seventy-four per cent of the women have returned for follow-up and the total period of observation covers 24,555 woman months.

Three types of IUCD have been used in our study Margulies spirals, Lippes loops and Antigons but the maximum experience is with Lippes loops which have been fitted in 2403 of the 2688 women.

In the first 15 months the devices were inserted only in non-puerperal women, and though all patients delivered in the hospital were advised to report to the Family Planning Clinic for insertion of I. U. C. D. at the time of postnatal check-up 6 weeks after delivery, very few actually came for this and therefore in June 1965 it was decided to insert 30 mm Lippes loop in normally delivered women prior to their discharge from the hospital on the 4th or 5th postpartum day as advocated by Phatak in April 1965. The number of cases selected for this study was kept low to start with, as we had yet to ascertain the harmlessness of the procedure. Four hundred such insertions were done upto December, 1968 and the object of this presentation it to compare the results obtained in this group with those obtained in insertions done later in the puerperium and in non-puerperal women with the same size of device.

Puerperal Insertions

Insertions within 6 weeks of delivery have been done in 647 women. Four hundred of these were early postpartum insertions done between the 4th-8th day. Twenty were done between 1-3 weeks and and the remaining 227 between 3 to 6 weeks postpartum.

Early Post-Partum Insertions

Only women who had delivered normally and who were afebrile were select-

*Professor and Head of the Department,
**Research Officer, Departmtnt of Obst. & Gynec. K. G. Medical College, Lucknow.
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ed for these insertions. Of the total 400, 45 insertions were done on the 4th day, 160 on the 5th day, 145 on the 6th day, 36 on the 7th day and 14 on the 8th day.

Insertion was easy in all and clinically involution of the uterus was not interfered with. A modified inserter, 1 cm. longer than the standard Lippes one has been used by Hingorani (1968) in her series of postpartum cases but in our study only the standard Lippes inserter has been used. The maximum follow-up in this group is 34 months and the total period of observation, 2242 women months.

pulsion rate is considerably higher than that seen in late puerperal and non-puerperal insertions with the same size of device where the rate was 9.4% and 14.2% respectively.

Analysis of the percentage of expulsions according to the day on which the devices were inserted yielded interesting results. When the devices were inserted on the 4th day postpartum, the expulsion rate was as high as 35.7%, a figure which is comparable with the 40% expulsion rate reported by Phatak (1968). On the other hand, when the devices were inserted just

TABLE I

Expulsion Rate, 30 mm Lippes Loops

	No. Inserted	No. Followed	No. Expelled	% Expelled
Postpartum	400	189	50	26.4
Puerperal	131	106	10	9.4
Non-puerperal	309	245	35	14.2
Total	840	540	95	17.5

One hundred and eighty-nine of the 400 women (47.2%) have reported for follow-up. The complications encountered have been analysed only on the number of the cases actually followed and not on the total number of insertions.

Expulsion of the device was the commonest complication in the early postpartum insertions and occurred in 50 of the 189 women followed (26.4%). This ex-

one day later i.e. on the 5th postpartum day the expulsion rate was only 15.1%. One would have expected a still lower expulsion rate in 6-8 day insertions but this, for some reason difficult to explain, was not seen to occur Table II.

In the later puerperal insertions the expulsion rate was much lower then in the postpartum group. In insertions done during the 4th week, the expulsion rate was

TABLE II

Expulsion Rates According to Day of Insertion (Post Partum Cases)

Day of Insertion	No Inserted	No Followed	No Expelled	% Expelled
4	45	14	5	35.7
5	160	66	10	15.1
6-8	195	109	35	32.1

only 3%, but it rose to 7.6% and 12.5% when the insertions were done during the 5th and 6th weeks Table III.

Reinsertion in Postpartum Cases

This was done in 26 cases, with success in 25. Sixteen of the successful reinsertions were done after the 6th week postpartum and 9 during the 4th postpartum week. In the early stages of our study it was not deemed advisable to call patients for reinsertions earlier than 6 weeks postpartum to ensure full involution of the uterus but when it was found that a large number of patients either forgot to keep this appointment or only returned after they had conceived,

TABLE III

Comparison of Expulsion Rates in Early Postpartum and late Puerperal Insertions

Day Postpartum when device inserted	Total Insertions	No Followed	No Expelled	% Expelled
4-8	400	189	50	26.4
9-20	18	6	2	33.3
21-28	17	15	2	13.3
4 weeks	42	33	1	3.0
5 weeks	28	26	2	7.6
6 weeks	26	24	3	12.5
Total puerperal insertions	531	295	60	20.3
Non-puerperal insertions	309	245	35	14.2

Time of Expulsion

As anticipated the maximum number of expulsions occurred during the first-6 weeks in the postpartum and late puerperal groups. (72% and 50% as against 37.1% in the non-puerperal cases) but after the 6th week the number of expulsions in these 2 groups was lower than the number in the non-puerperal cases Table IV.

TABLE IV

Time of Expulsion in Postpartum-Puerperal and Non-puerperal cases

Total Expulsions	% Expelled	Time of Expulsion					
		1st Wk.	2-6 Wks.	7 Wks. to 6 moths.	7-12 moths.	2nd year	3rd year
Postpartum 50	26.4	12 24%	24 48%	10 20%	2 4%	2 4%	
		72%					
Late Puerperal 10	9.4	Nil —	5 50%	2 20%	2 20%	1 10%	
		50%					
Non-Puerperal 35	14.2	2 5.7%	11 31.4%	11 31.4%	9 25.7%	1 2.8%	1 2.8%
		37.1%					

it was decided to do the reinsertion whenever the patients presented themselves. That this was a worthwhile procedure was evidenced by the fact that 9 out of 10 devices reinserted within a month of delivery were successfully retained.

Bleeding

This was the major complication of the non-puerperal insertions was not a serious problem in either the postpartum or late puerperal groups, as in most cases the post-insertion bleeding merged with the lochial discharge. Two postpartum cases, however, did have severe postinsertion bleeding and the devices were immediately removed.

Prolongation of the duration of lochial discharge from 3-8 weeks was noted in 49 postpartum insertions (25.9%) and removal had to be resorted to in 14 (7.4%). In a group of 73 normal controls the average duration of lochial discharge was 17-18 days and only in 2.7% it was seen to persist upto 6 weeks.

Analysis of duration of Lactation Amenorrhoea and Time of Resumption of Menstruation in Postpartum Cases

In all, during the follow-up period, 79 women resumed menstruation, 35 without any preceeding lactation amenorrhoea, and 44 after periods of amenorrhoea varying from 2 months to 1 year. Only 13 women complained of irregular bleeding and the remaining 97 remained amenorrhoic during the period of followup.

Thirty-eight out of the 79 women (48.1%) who resumed menstruation had normal periods. Twenty-nine (36.7%) had heavy periods which became normal in 11 (14%) after 3 months, bringing the percentage with normal periods after 3 months to 62. Scanty periods were noted in 5 women (6.3%). Another 5 women complained early periods and 2 (2.5%) had irregular periods.

Late menorrhagia (after 6 months of normal periods) occurred in 7 women (8.8%). Ten devices had to be removed on account of heavy and prolonged periods, thus bringing to total removals for bleeding to 26 (13.7%).

The incidence of late menorrhagia in the non-postpartum loop insertions was of the same order, 9.1% (99 out of 1079 cases followed) and inspite of much work the reason for its occurrence is still unknown. Intrigued by finding a large number of devices removed for bleeding it was decided to undertake an investigation on the biochemical constituents of the intra-uterine fluid in collaboration with the Central Drug Research Institute, Lucknow. Marked changes were found in the electrolyte and protein contents of the fluid of IUD fitted women (Kar *et al* 1968). Analysis of the deposit revealed that its major constituents were calcium, magnesium, uric acid and protein with a small amount of iron. The only anions detected were carbonate and phosphate and it is, therefore, possible that the three metals, calcium, magnesium and iron existed in either or both these forms. It is possible that part of the iron was conjugated with protein. The various constituents detected accounted for only 80% of the deposit. One is tempted to speculate on the relationship between the formation of this deposit and the occurrence of late menorrhagia, by an abrasive effect on the endometrium but further work is necessary to elucidate this point (Engineer *et al*, 1970).

The total number of removals for bleeding in the postpartum cases was 26 or 13.7%. In the case of non-puerperal insertions with the 30 mm Loop this rate was

23.6% (58 out of 245) while in the late puerperal insertions it was 17.9% (19 out of 106). This is shown in Table V.

TABLE V

Removal for Bleeding

Post-Partum	13.7% (26/189)
Late Puerperal	17.9% (19/106)
Non-Puerperal	23.6% (58/245)

In addition to 26 removals for bleeding in the postpartum group, 19 other devices were removed, of which only 6 were on valid grounds, such as death of husband or desire for another pregnancy.

The overall retention rate in postpartum, puerperal and non-puerperal insertions is given in Table VI.

Perforation

Four cases of perforation of the uterus have been seen by us but only one of them was in our own insertions. This was a 2nd para in whom a puerperal insertion had been done one month after delivery. The device was palpable through the anterior fornix when the patient returned for follow-up 9 months later and was easily removed by performing anterior coeliotomy.

Two of the remaining 3 perforations were also in puerperal insertions done in District Hospitals 3-4 weeks after delivery, while the third was a non-peurperal insertion. Two of the devices were removed by the vaginal route and the third by laparotomy.

TABLE VI

Overall Retention Rate in Postpartum, Puerperal and Non-Puerperal Insertions

	% Expelled	% Removed for Bleeding	% Retained
Postpartum	26.4	13.7	59.9
	40.1		
Non-Puerperal	14.2	23.6	62.2
	37.8		
Late-Puerperal	9.4	17.9	72.7
	27.3		

Other Complications

(a) *Pregnancy with loop in situ*

This occurred in 1 postpartum and 6 non-peurperal insertions. Time of occurrence varied from 2 to 31 months after insertion of the device.

(b) *Ectopic Gestation*

No case of ectopic gestation has occured in our cases but 3 such have been referred to us from outside. None of these were postpartum insertions.

Comment

Everything considered, postpartum insertion of IUDs appears to be a worthwhile procedure for the advantages outweigh the disadvantages. The main drawback appears to be the high expulsion rate but this is more than compensated by the lower removal rate for bleeding and the sum total of expulsions and removals for bleeding is practically the same as in the non-puerperal insertions.

In the later puerperal insertions on the

other hand the retention rate is much higher, but it is difficult to get the women to come for the insertion at the correct time.

The ease of insertion and the fact that no personnel other than those routinely present in any maternity hospital are required for these early postpartum insertions more than compensates for the slight difference in the over-all retention rate of the device in this group as compared to the non-puerperal insertions. This procedure is recommended as a routine for all maternity hospitals to enable us to overcome the problem of the shortage of specially skilled and trained medical personnel repuired for the successful implementation of the IUCD programme on a mass scale.

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