Intra-abdominal dislocation of I.U.D.

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Though there are many methods of birth control in Taiwan, Lippe's loop and Ota's ring are the most popular especially Lippe's loop, because of its easiness of insertion and removal. However, uterine perforation due to I.U.D. has attracted increasing attention of the investigator. The incidence (Table 1) of abdominal displacement is higher in the foreign literature. Teitze reported 6/1,000 for Birnberg bow and 0.4/1,000 for Lippe's lop, Margulies coil and Grafenberg ring. Hall reported 5/1,000 for Birnberg bow and 1/1,000 for loop and Leger reported 2.5/1,000 for Lippe's loop. In Taiwan the incidence is much smaller, though no accurate report is available. We have 8 cases (Table 3) of intra-abdominal migration, 6 cited from other investigators (8; 9); 7 cases due to Lippe's loop and 1 case due to Ota's ring with known outcome. In Taiwan (10) more than 430,000 loops were inserted from February 1963 to September 1968.

CASE REPORT

1. M.S. Li. A 27 year-old, Gravida 2, para 2, had a loop inserted without any complaint in November 1965, 40 days after delivery. She consulted us because of 2 months gestation in December 1966. The loop's tail was not visible and the loop was not found during a D & C. On July 21, 1967 she again visited us because of 2 months gestation. H.S.G. showed the loop lying in the intra-abdominal cavity (Fig. 1, 2, 3) which is why the loop was not found during D & C. Now, the patient sometimes complains of a dull pain in the right lower abdomen especially during defecation. She is not worried about the loop remaining in the abdominal cavity.

2. C.L. Li., a 25-year old 4-0-04, was admitted on September 14, 1965 with complaints of lower abdominal pain, chillness and fever for one week. She had a normal spontaneous delivery, 4 months before. On September 8, 3 days after menstruation, an Ota's ring was inserted by a practitioner. Thereafter severe lower abdominal pain, chill and fever developed. On September 12, an attempt to remove the ring by the same doctor was not successful. Under the suspicion of uterine perforation and intestinal injury, she was transferred to our emergency room on September 14. On the day of admission, 7 days after insertion, the lower half of the abdomen was boardlike, resistant and tenderness was noted especially over the right lower abdomen. The uterus in the mid-position was normal in size. Right annexa showed a goose-egg-sized tender mass which could not be separated from the uterus. Bowel sound was normal. Body temperature was 37.8°C. Under the diagnosis of pelvic peritonitis due to uterine perforation, emergency laparotomy was performed.

The uterus showed a traumatic perforation about 2.5 cm in length at anterior lower portion near right lateral wall. About a goose-egg-sized haematoma within the leaves of the right broad ligament was found. A nylon ring within the haematoma adhering to the surface of the uterus near the perforation was removed. Subserosal haemorrhage was seen around the right fallopian tube and on the intestine about 2 meters from the ileocecal junction. In consideration of the age and parity of the patient, total hysterectomy and right annexectomy were performed. The post-operative course was uneventful and the patient was discharged on Oct. 2.

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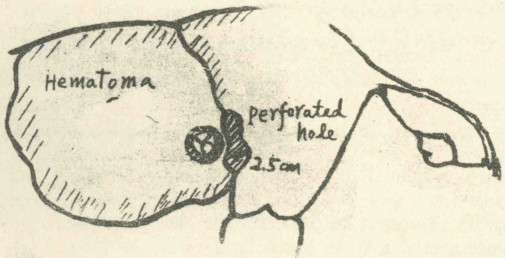

COMMENT AND DISCUSSION

In six out of 8 cases, time of insertion varied from 32 days to 18 months after delivery, 2 cases unknown. In cases 2 and 4, the loop was inserted during early pregnancy, first month and second month respectively, which is a serious mistake and therefore there was chance of perforation. Burnhill and Liss have reported insertion 4 days postpartum without perforation. It seems logical to insert loop at least 8 weeks postpartum to lessen any possible perforation due to subinvolution. However, there is still a chance for perforation and translocation even in the fully involuted uterus as in case 8. In Taiwan, we routinely insert IUCD sooner after D & C, 3-7 days after menstruation or 8 weeks postpartum. Sharman suggests that intra-uterine devices are not necessary for contraception before the sixth week after delivery but if not inserted by the end of the eighth week, a rapidly increasing number would conceive as the time elapses. Therefore the 8th week postpartum seems to be the appropriate time for insertion of I.U.D.

The perforations are divided into two groups; (Table 2) type (a), those with complete migration of the device into the peritoneal cavity, and type (b), those with uterine perforation but partial migration of the device into the peritoneal cavity, with a portion of it embedded in the uterine wall. Type (b) is more dangerous because the perforation is predisposed to bowel herniation, and the diagnosis more difficult. Our 8 cases are all type (a).

Cause of uterine perforation due to insertion of IUCD may be as follows:

1. Carelessly, inserted in the wrong direction, partly or completely penetrating the uterine wall under the condition of subinvolution as in case 1 and case 7. Esposito, Ledger and Willson suggest that all perforation takes place at the

time of insertion. But, in the fully involuted uterus, as in case 8, there is still a chance for perforationand translocation.

2. Insertion during early pregnancy as in case 4.
3. Abnormal uterus such as case 6 with Leiomyoma.
4. Lippes' loop may be too sharp or sprawling out.
5. Migration through the intact uterine wall.
6. If a part of the device had entered the uterine wall, the contracting uterus might push it by uterine contraction completely through uterus and then into the peritoneal cavity.

For preventing uterine perforation, first of all, it is of essential importance to determine uterine direction and size by manual palpation and sound. IUCD made of rigid plastic, as Birnberg's bow, should not be used. Traction downward by a tenaculum placed on the anterior lip of the cervix makes the insertion easier even in the normal uterus.

In multiparous women, the cervical canal usually is wide enough to permit passage of an introducer without dilatation of the internal os. It is advisable to pass the introducer only to the depth at which the tip is well above the internal os, but not against the uterine axis to prevent perforation.

It is true that there is a high incidence of abdominal cramps immediately after insertion as the first sign of uterine perforation. Four out of 8 cases had uterine bleeding after the insertion. Case 7, was very interesting only complained of dull pain over the right lower abdomen occasionally and never worried about the loop remaining in the abdominal cavity for 3 years. Case 8 had chill, fever and severe abdominal pain due to infection. However, case 2 had been asymptomatic.

The time interval between insertion and diagnosis varied from 11 hours to 14 months.

The suspicion of translocation of the IUCD should be raised when the loop's tail was not visible. In all 8 cases, the device could not be removed by D & C. Case 7 had pregnancy twice after the translocation. H.S.C. performed in 6 cases showed the position of the device. For the diagnosis, H.S.G. taken both over anterior-posterior and lateral direction is recommended.

Once the diagnosis of uterine perforation is made, immediate removal of the intraperitoneal device is best. Nakamoto and MacFarlan removed the device even in asymptomatic cases. In most cases the uterus can be preserved. In our 7 cases, operation was performed and in 3 cases the uterus was preserved. Hysterectomy was performed in 4 cases. If there is only minimal peritioneal reaction, it is not necessary to consider immediate operation to remove an extra-uterine device.

Burnhill and others have advised leaving the device in the peritoneal cavity and inserting another in the uterus. In case 7, the device was left alone in the peritoneal cavity for 3 years. When only slight lower abdominal pain is complained of, it

TABLE 1. INCIDENCE

	Birnberg Bow	Grafenberg Ring	Lippes Loop	Margulies Coil
Tietze	27/4389	1 case	4 cases	1 case
%	6	0.4	0.4	0.4
Hall	5/1041		1/9600	
%	5		1	
Ledger & Willson	%		5 cases 2.5/1000	
Author		1 case	7/430000	

TABLE 2 TYPE OF PERFORATION

		Author	Literature	Total
(a)	Complete	8	62	70
(b)	Incomplete	0	5	
Total:		8	67	75

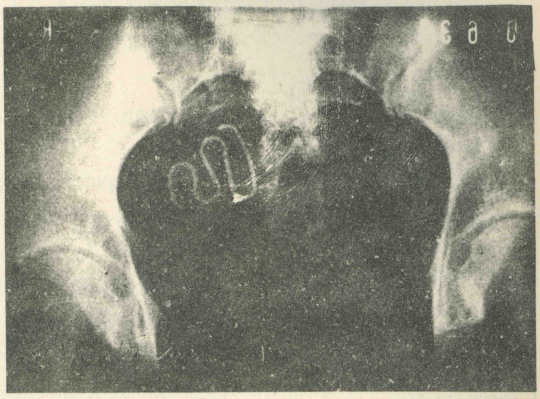

Fig. 1. The loop is seen near the promontory.

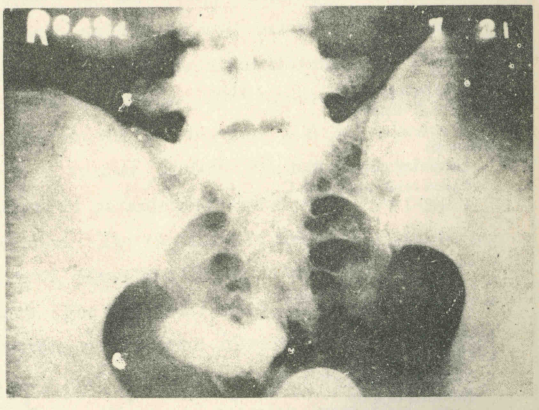

Fig. 2. The uterus overshadowed the loop, but a part of loop still can be seen.

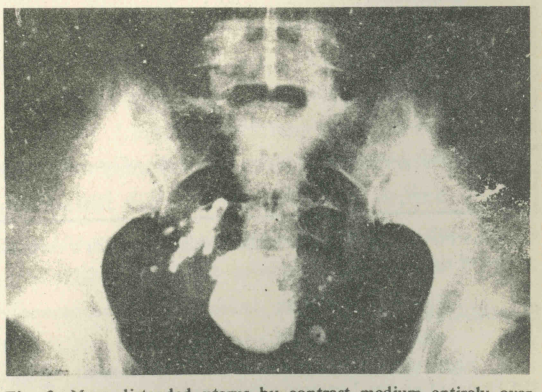

Fig. 3. More distended uterus by contrast medium entirely overshadowed the loop and the loop can not be seen.

A Summary of 7 cases of Loop and 1 case of Ring in Abdomen

(9) (10) Case No.	Loop 1	" 2	" 3	" 4	" 5	" 6	" 7	Ring 8
Time of Insertion								
Postpartum	32 D		2M.	18 M.			40 D.	4M.
Pregnancy		1st. M.			??			
Type of perforation								
Complete passage	+	+	+	+	+	+	+	+
Partial passage								
Symptoms								
1. Lower abd. pain	+		+		+	+	+	+
2. Vaginal bleeding	+		+	+				+
3. Chillness and fever								+
Complication								
1. Pregnancy		2M		2M			2M twice	
2. Peritonitis								
3. Bowel injury								+
4. Haematoma								+
								+
Interval between insertion & diagnosis	11 H.	2M.	14 M.	25 D.	6M	4M	12 M.	6D.
Diagnosis								
1. Loops tail not visible				+	+	+	+	
2. Failed removal by D & C	+	+	+	+	+	+	+	
3. H.S.G.		+	+	+		+	+	+
						+	+	
Site of perforation on the contrary direction to the curvature of the uterine cavity		+	+	+	+	?	?	
Treatment								
1. Conservative								
2. Surgical	+	+	+	+	+	+	3 Y.	
Removal of loop	+	+	+	+	+	+		+
Subtotal hysterectomy	+							+
Total hysterectomy								
Annexectomy	Rt.					+		+
Tubal ligation		+	+	+	+			Rt.
Appendectomy			+	+	+			

Case 1, 2, 3, 4, 5. . . . . P.Y. Wei and T.K. Yu
6. . . . . S.W. Lee and L.H. Lin
7, 8. . . . . Author

Pathology: Leiomyoma of uterus without sign of loop penetrating wound.

D = day M = month H = hour

seems harmless to leave loop in abdominal cavity for a certain period of time.

SUMMARY

1. Eight cases of intra-abdominal displacement of the IUCD including our 2 cases are presented.

2. It seems likely that the complication occurs during the insertion of the device and that the incidence is dependent on the type of device and introducer, the method by which the device is introduced and the consistency of the uterine wall.

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