

CHEMICAL FEMALE STERILIZATION USING QUINACRINE PALLETS

ROHIT V. BHATT* MD, DCH
KOKILA M. JARIWALA**, MD, DGO
POURU BHIWANDIWALA***, MD.
LEONARD LAUFE****, MD.

It is generally accepted that surgical method of female sterilization is a very effective method of contraception. However, it is difficult to provide service for female sterilization in the remote rural areas. There may be fear of surgery in the minds of some women. The surgical operation needs qualified medical persons and the number of such persons may not be adequate for the number of such procedures to be performed. Therefore, development of simplified non-surgical sterilization procedures that can be performed by paramedical personnel remains a high priority for countries with limited surgical facilities and trained personnel. Quinacrine has been tried for producing tubal blockage. Zipper states that transcervical instillation of Quinacrine hydrochloride solution has been associated with an unacceptably high pregnancy rate (25.5%). Bhatt *et al* reported on the tubal blockage after instillation of Quinacrine hydrochloride solution in pre-hysterectomy cases. The instillations were made 4 weeks and 8 weeks before hysterectomy. Now quinacrine hydrochloride pellets have been developed in an effort to produce a delivery system that would bring the chemical into prolonged contact with the tubal ostia and thus increase the probability of successful tubal blockage. The Quinacrine pellets would dissolve slowly in the uterine cavity which would minimise the risk of rapid intravascular absorption. Zipper claims that quinacrine acts as a powerful obstructive agent in the epithelium of the intra-mural region without altering the histology of the endometrium. Hagenfeldt has shown that human endometrium is rich in zinc and it is this zinc content of the endometrium which gives protection from quinacrine. The purpose of the present study is to evaluate the efficacy of quinacrine pellets in producing tubal blockage.

Material and Methods

The study consists of 80 women who agreed to have chemical method of contraception. These women wanted to control their fertility. They were told about the quinacrine pellets and possible risks and failure rate were also communicated. Women with pelvic pathology were not included in the study. Women with history of psychiatric disorders were also excluded. The pellets were inserted in the proliferative phase of the menstrual cycle. The pellets containing 250 mg. of quinacrine hydrochloride were deposited in the uterine cavity with the use of modified Cu-T-200 IUD inserter. The insertions were done on an out-patient basis without any premedication. They were observed for 2-3 hours before allowing them to go home. Total three insertions were made at the interval of 4 weeks. All these women were sexually active. They were not allowed to use any other contraceptive during this time. Women were

*Professor and Head Dept. Obst. Gynaecology, Medical College and S.S. Cr. Hospital, Baroda.

**Research Assistant.

***International Fertility Research Program. RTP, North Carolina, USA.

scheduled for followup 6 months and 12 months after the: third insertion of the pallets.

Results

Socio-demographic data is given in table I. The average age of these patients was 31.4 years and average parity was 4.1. We could not perform more than one instillation in 2 cases because of subsequent pregnancy. Discomfort in the first 48 hours was the main complaint. However the discomfort was slight and occurred in 14 cases. The other women had no discomfort. The pattern of menstrual cycle is shown in table II. Menstrual irregularity and scanty menses were observed in 6 to 12 percent of the cases. The prolonged cycle was the cause of concern to the women because of the fear of pregnancy. However, they were relieved of the anxiety when they were told that the pregnancy test was negative. The pregnancies are reported in Table III. Total 4 pregnancies resulted during the followup which varied from 10 to 14 months. Out of the four pregnancies, one occurred after 1st instillation and one occurred after second instillation of quinacrine. Two pregnancies resulted after all the three instillations. All these pregnancies were terminated by suction evacuation. There is no ectopic pregnancy in this series so far.

TABLE I. Socio-Demographic Data

Age in yrs.	No.	School yrs. completed	Wife No.	Education Husband No.
15—19	0	0	22	8
20-24	0	1—6	25	18
25-29	7	7—12	29	40
30-34	72	13+	4	4
35+				
<i>Residence</i>			Total live births	
Urban	62		One	0
Rural	18		Two	2
<i>Religion</i>			Three	26
Hindu	76		Four	34
Muslim	3		Five	15
Parsi	1		Six	3
Christian	0			

Discussion

The study shows that the pallet has more convenience of insertion as compared to the quinacrine solution. However four pregnancies during early followup is disturbing. Even if we exclude two pregnancies which occurred before all the three instillations were complete, two occurred even after three instillations. Bhat *et al* (1980) have shown that quinacrine can induce tubal fibrosis with subsequent tubal occlusion. However, the erratic distribution of pathological lesions is note worthy. There is no doubt the quinacrine produces fibrosis and tubal blockage. What is not well understood is the optimal dosage

TABLE II. Menstrual Cycle Data

	After 1st Instillation	After 2nd Instillation	After 3rd Instillation
<i>Pattern of Menstrual Cycle</i>			
Normal	45	39	44
Shorter	14	17	12
Longer	16	20	20
Irregular	01	02	02
Amenorrhoea	04	01	00
	(One Pregnant)	(One Pregnant)	
<i>Menstrual Flow</i>			
Normal	72	70	68
Scanty	04	07	10
Profuse	00	01	00
<i>Average Duration of Flow</i>			
Same	70	68	72
Longer	02	06	00
Shorter	04	04	06

TABLE III. Pregnancy

After 1 instillation	...	1
		1
After 3 instillation	...	2
		2
		4

TABLE IV

	Lap. Ster. F. Ring	Lap. Ster Clip	Lap. Ster. Cautry	Mini Lap. Ster.
Technical failure	0.6%	0.9%	0.5%	Nil
Technical difficulties	2.7%	31.3%	—	—
Surgical difficulties	6%	8.5%	8.7%	10%
Surgical complications :				
(a) Immediate	1.3%	4.7%	8%	1.3%
(b) Late	—	—	—	6.7%
Complaints (pain)	52.7%	42.7%	10.16%	10%
Failure rate	0.2%	0.9%	0.2%	0.1%

and the mode of delivery of quinacrine. This is only a preliminary report and these women would be followed for two years to gather more information.

References

1. Bhatt, R.V., Pathak, N.D., Chauhan, L.N., *et al.* Proceedings of the India Fertility Research Program, 1978.
2. Bhatt, R.V., Aparacio, A., Davidson, O., Laufe, L., King, T. Fertility and Sterility, 33 : 666-667; 1980.
3. Hagenfeldt cited by Zipper, J. in Female Sterilization. Ed. Duncan, G., Falib, RID. J.J. Academic Press, New York & London, 1972, page 231.
4. Zipper, J., Medel, M., Goldsmith, A. *et al.* Int. J. Gynaecol Obstet 14-499-552; 1976.
5. Zipper, J., Prager, Ruth., Medel, M. Fertility & Sterility, 24; 48-53; 1973.

Proceedings
of
THE THIRD INTERNATIONAL SEMINAR
ON
Maternal and Perinatal Mortality
Pregnancy Termination and Sterilization
New Delhi, India
3rd to 5th October 1980

Editors :

VERA HINGORANI

F.R.C.O.G., F.A.M.S., F.A.C.S.,
F.I.C.S., Hon. F.A.C.O.G.

R. D. PANDIT

M.D., F.A.C.S., F.I.C.S.

V. L. BHARGAVA

M.D.