

PERMANENT FEMALE STERILISATION BY CHEMICAL METHOD TRANSCERVICAL INSERTION OF QUINACRINE

ARCH RAJ,* F.R.C.O.G.

and

DR. SAKHRUP CHAKRAVARTY,** M.B.B.S., D.G.O.

Introduction :

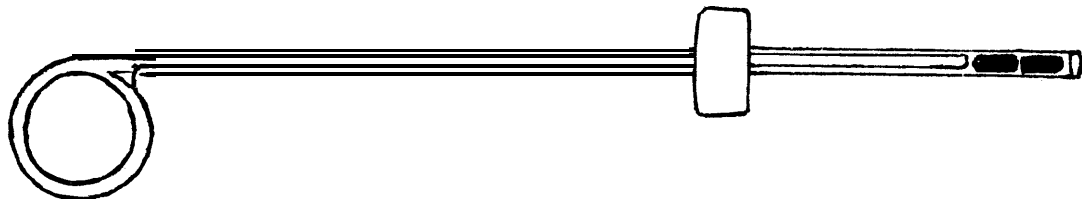
India is one of the first countries to introduce voluntary sterilisation as part of its national family planning programme. The attitude towards female sterilisation is quite favourable but still the methods exceed the abilities of our country, So Research work are on demand for different technology which can be applied outside the hospital setting, by paramedical personnel, and which equipments that is simple to use, low-costing and easy to maintain. It appears that trans cervical approach of chemical or mechanical blocking methods of tubes may answer to the problem.

Various chemical agents have been used for permanant tubal blockage by transcervical approach, amongst which Quinacrine has been considered to be the best. Quinacrine as a chemosterilant is an occlusive agent that acts on the intramural portion of the tube; a granulamatus reaction is produced probably by Quinacrine-DNA binding. Quinacrine does not affect the endometrium because of the presence of Zinc. Quinacrine pellets when deposited in the uterincavity get slowly absorbed and produce the desired blockage of intramural portion of the tube by prolonged contact.

In this paper the results of a preliminary study with quinacrine pellets have been presented.

Materials and Methods :

Each Quinacrine hydrochloride pellet has a cylindrical shape with a diameter of less than 4 mm. and each pellet contains 50 mgm. of Quinacrine. Two pellets i.e. 100 mg. of quinacrine hydrochloride are deposited in the uterine cavity with the use. of Cu-T introducer. The tube with the pellets is passed through the cervical canal as a blind procedure and pellets are deposited into the upper segment of the uterine fundas.



Insertions are performed during the proliferative phase of the menstrual cycle, for three consequive methods at one month interval. Hystero-salpingogram has been performed after 2 months of the last insertion. Histopathological studies of the tube have been carried out after inserting quinacrine pellets in gynaecological cases-who have undergone hysterectomy-at different period of intervals.

* Asstt. Prof. (G.S.O.) Dept. R.G. Kar. M.C.H.

** Hon. Sr. House-Staff R.G. Kar. M.C.H.

In all cases except the gynaecological group additional contraceptive measures are advised for first two months, either oral pills or Condoms according to the patient's choice.

In the present series, MTP cases and few puerperal cases are included, when 250 mgm. of pellets have been used for 1st insertion. Follow up studies are scheduled at 6 months and 12 months interval or at any time when complication occur.

Patients' Profile :

Patients who desire for permanent contraceptive measure and do not suffer from any medical disorder are selected for trial. The series consist of interval cases, post abortal and puerperal cases and also few gynaecological cases for histopathological studies.

Total 131 cases for trial

Table I :

Total no. of cases (including all)	Total no. cases drop out after 1st dose	No. of Gynae. cases under study	Total no. of cases on trial	No. of interval cases total	No. of post abortal cases (total)	No. of puerperal cases (total)
131	22	6	103	55	46	2

Drop out cases after 1st insertion are excluded from the list.

Table II. Age group and parity of patient on trial

Different age group of patients	:	Number of cases
25 years-30 years	.	54
31 years-35 years	.	26
36 years-40 years	.	14
40 years +		9 (including 6 gynaecological cases)

Table III. Parity of patients on trial

Parity of patients on trial	:	Number of cases
P ₂	:	6
P ₂ +	:	22 (abortion cases)
P ₃ +	:	35
P ₄ +	:	40

Table IV. Socio Economic and Educational status

All belong to low socio-economic group except 2 cases who belong to middle socio-economic status.

All literate-except 2 cases of high education group.

Results :

Table I 'shows that the total no. of cases on trial in this series are 131. But 22 cases did not turn up after the 1st insertions and also 6 gynaecological cases are not taken into account.

Table V.

Total no. of cases on trial	Course complete (including HSG report showing Bilateral block)	No. of cases completed doses of quinacrine	No. of drop out cases after 2nd insertion.
103	50	43	10

Table Vi. 83—Follow up cases (those who have completed the schedule method)

Total no. of follow up cases after 1 year or more after last insertion	Total no. of follow up cases 6 months after last insertion	No. of cases turned up for Rpt. H.S.G.	No. of cases H.S.G. done report—persistence of Bilateral block after 1 year	Waiting for H.S.G.
14	16	11	4	7

Table VII. Result of Histopathological Examination of tubes in Gynaecological cases-after pre-hysterectomy insertion of Quinacrine

Total no. of Gynae. cases	H.P. report after 7 days of insertions no. of cases	H.P. report after 3 wks of insertions no. of cases	H.P. report after 2 insertion no. of cases	H.P. report after two months of 2 insertion
	- 2	- 2	- 1	- 1
6	Report showed-no change in intramural portion of tube	Report showed inflammatory reaction with exudation at intramural portion of tube	No. tubal portion found in the specimen	Report showed fibrosis at the intramural portion of tube causing occlusion of the tubal cavity

Table VIII

Total no. of cases 3 insertion com- pleted	H.S.G. done 50 cases report	H.S.G. not done
83	Bilateral block in all 50 cases	23 cases after 3rd doses

TABLE IX : Complication

Complication	Number of cases
Psychosis	nil
Menstrual disturbances (a) Menorrhagia (b) Prolonged menstrual cycle	3 cases (no treatment required) 2 cases-responded by Hormone with drawl treatment
Pregnancy	1 case within 1 yr. of followup.
Pelvic pain	Nil.
Vague complaints headache, weakness palpitation	3 cases-no treatment required.

Summary and Conclusion

The preliminary results obtained from the present study indicate that quinacrine pellets are quite effective in producing tubal blockage. The patients' acceptability toward the method are quite encouraging. In the present study 100 mgm. of quinacrine pellets are used as a test of response to Indian women.

Literature shows Zipper has performed various clinical series of quinacrine instillation both with solution and pellets by transcervical approach. He claim better results by pellets.

Davidson has reported similar results by single dose instillation of quinacrine and used oral contraceptive as an adjunctive method.

Isvangkun, et al have noted that one installation produces bilateral tubal occlusion in only about half the patients.

Ben it has demonstrated increasing rates of tubal occlusion with succes- instillation.

Quinone has reported a high failure rate in a small series of patients receiving hysteroscopic instillation of quinacrine.

In the present series 83 cases had 3 consecutive insertions and only one case of failure within 1 yr. of follow up. Hyterosalingographic report of 50 cases show bilateral tubal block at the isthmus portion of the tube.

Bhatt, R, et al has shown quinacrine induced pathological changes in fallopian tube. Our histopathological changes show quinacrine pellets require prolonged contact with the tube and repeated insertion showed better results. Complications and/or side effects that can be attributed to the quinacrine pellet, produce either at the time of insertion or between insertions appear to be infrequent or minor. Menstrual disturbances such as menorrhagia, occurred in 3 cases who do not require any treatment. 2 cases had prolonged menstrual cycle, responded well by hormone withdrawal treatment. Follow up studies are carried on, only 14 cases have completed 1 yr. and one became pregnant within 1 yr.

Conclusive remarks are awaited till long term followup have been carried out. Regarding reversibility of tubes-it is expected that as the isthmic portion of the tubes are affected it will be easier to reinsert the healthy portion into the uterus.

In near future. it may be popular method which could be applicable to women of rural areas of India, if mobile camp can be organised for this method either by the Government or some voluntary organisations. Only disadvantage is that it is a time consuming procedure and at least three insertions are required for blockage of the tubes.

Acknowledgement

This work has been supported by Dr. B. Mullick of International Fertility Research Programme, who supplied the quinacrine pellets.

References

1. Benoit A, Melancon, J., Gagnon, M. :-Chemically induced tubal occlusion in the human female using intra uterine instillation of quinacrine, *Contraception* 12 : 95, 1975.
2. Bhatt R.V., Pathak, N.D., Chauhan, L.N., Shah, D.S. and Bukapatamm, V.V. :A. study of transcervical instillation of quinacrine before hysterectomy to test tubal blockage. *India Fertility Research Programme, Bombay*, p. 171, 1977.
3. Davidson, O.W- and Wilkins C. Chemically induced tubal occlusion in the human female following a single instillation of quinacrine. *Contraception* 7 : 333-339, April, 1973.
4. Isvangkun, C. Phaosvadi, S., Neuwirth, R.S., and Richar, R.M. :— Clinical evaluation of quinacrine hydrochloride for sterilisation of the human female, *Contraception* 14 : 75, 1976.
5. Mehtaji, S. Jadwani, K., and Goyal, V. : Chemical sterilisation with quinacrine, *Fourth Transaction of Scientific papers, India Fertility Research programme, Bombay*, p.p. 167, Sept., 1977.
6. Quinones, R. Alvarado, A. and Lcy, E.-Hysteroscopic sterilisation *Int. J. Gynaec. Cal* 14- 27-34, 1976.
7. Zipper, J. Stacchetti, E. and Medel, M.: Transaginal chemical sterilisation :—Clinical use of quinacrine plus potentiating adjuvants, *Contraception* 12:11,1975.
8. Zipper J, Medel M. Goldsmith A, Edelman DA, Pastene L, Rivera M :-The clinical efficiency of repeated transcervical instillation of quinacrine for female sterilisation. *Int. J. Gynaecol Obstet* 14 (6) : 499, 1976.
9. Zipper, J : IFRP Medical Advisory Committee. June, 1978