

## 7.3 An Early Experience with Nonsurgical Female Sterilization

by **Fakhar-un-Nisa**  
Pakistan

Our experience performing nonsurgical sterilization in women at Lady Wellington Hospital was very limited, but the results were so encouraging that I thought it appropriate to report our preliminary study at this gathering of professionals.

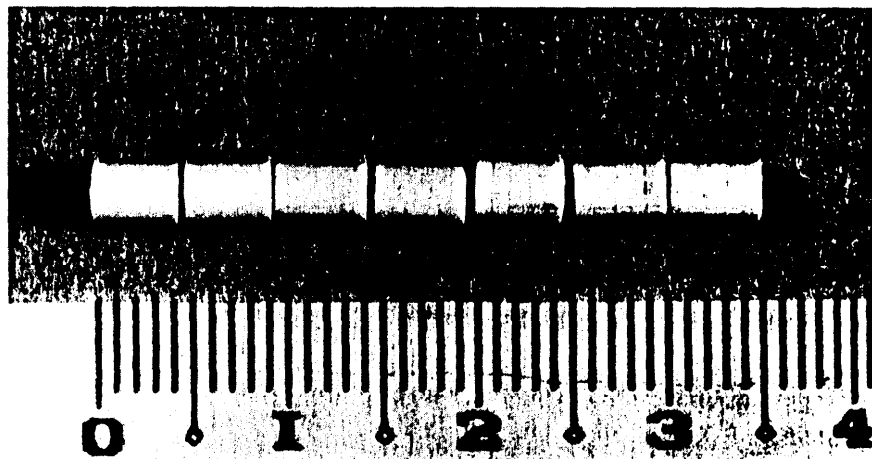
Voluntary sterilization is the most prevalent method of fertility regulation, the estimated number of couples using it having increased dramatically from 15 million in 1970 to 100 million in 1980, and about 135 million couples today. Pakistan is the ninth most populous country in the world and, as in other developing nations, the demand for sterilization is steadily increasing there; the preference is for female sterilization. This demand far exceeds the ability to provide such services, especially in the rural areas where most of our countrywomen live. We have been sending extension teams to perform minilaparatomies in far-flung regions from time to time, but it is not possible to cover the entire rural population. Moreover the risks associated with surgery grow in a camp setting.

A chemical, or nonsurgical, method of female sterilization was demonstrated to me by Professor Robert Neuwirth at St. Luke's Hospital, New York, in 1977. Although it was in an experimental stage, I found the procedure fascinating. So I was very pleased when Dr. Elton Kessel sent me a supply of quinacrine pellets and invited me to participate in the multinational study of female nonsurgical sterilization in December 1986. The method was developed by Dr. Jaime Zipper of Santiago, Chile (1). It has been shown that the tissue damage and fibrosis caused by intrauterine administration of quinacrine is limited to the cornual area of the uterus and interstitial portion of the Fallopian tubes (2,3).

### **Methodology**

The quinacrine pellet is cylindrical in shape, 0.5 cm long, with a diameter of 0.35 cm. Seven pellets, containing a total dose of 250 mg of quinacrine hydrochloride, are introduced into the uterine cavity, using a sterilized IUD inserter,

**Figure 1: One** insertion of quinacrine pellets (250 mg); length in centimetres



during the proliferative phase of the menstrual cycle (Figures 1 and 2). Some analgesic tablets are given in case the patient should feel any pain or discomfort.

She is asked to return for a second insertion after the menstrual period. Seven pellets containing 250 mg are inserted a second time to ensure blockage of the tubes. The woman is asked to observe temporary methods of contraception until her next period. Follow-up is scheduled at one week and at 1, 3, 6, 18 and 24 months. A test to check tubal patency by either insufflation or hysterosalpingography was carried out after the second menstrual period in selected cases.

### Results

We did ten hysterosalpingograms and a few insufflations in our short series of 105 cases. Only in one instance were tubes found patent; in the rest, there was cornual blockage.

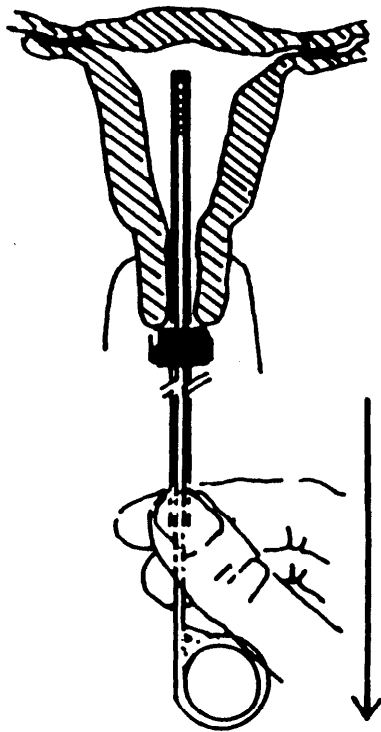
Average parity was 5.0 and average age was 35.5 years. Age of the last born child varied from six months to six years. It is interesting to note that 70% of these clients requested the procedure soon after the last abortion. No pregnancy has been reported so far after 3 to 18 months of follow-up.

Table 1 shows a comparison of average age, parity, failure rate, mortality and morbidity of the quinacrine pellet method with surgical sterilization at Lady Wellington Hospital, Lahore.

**Table 1:** Surgical and nonsurgical female sterilization.

Lady Wellington Hospital, Lahore, from January 1 to September 30, 1987.

Cases (No.)	Method of Sterilization	Age (Av.)	Parity (Av.)	Failure (Rate)	Procedure	
					Mortality	Morbidity
2170	Surgical	35.1	5.1	Nil	Nil	2.38%
105	Nonsurgical	35.5	5.0	Nil	Nil	Nil



*Figure 2: Quinacrine pellet insertion technique using an IUD inserter*

## **Discussion**

Ectopic pregnancy is reported as 0.24/1000 procedures at two years for quinacrine nonsurgical sterilization as compared to 2.15/1000 procedures after two years of surgical sterilization (4). Toxicity of the drug is virtually nil with the present dosage schedule. Fortunately, this drug was used as an antimalarial agent in the oral dosage of 100 mg daily by millions of soldiers during World War II. In this extensive experience, there were a few cases of dermatitis and transient toxic psychosis; the only common side effect was discoloration of skin after chronic use. In the recent study completed by Johns Hopkins University using rats and *Cynomolgus* monkeys, no chromosomal abnormality or teratogenic effect was observed (5).

## **Conclusion**

Nonsurgical sterilization of women by quinacrine pellets is an effective, much less expensive and simpler procedure than surgical sterilization. The cost is Rs 350 for surgical and Rs 75 for nonsurgical sterilization, for instance. The procedure can be carried out as safely in rural areas as an office IUD insertion. In spite of the estimated lifetime failure rate of 5 per 100 women (6), we regard it as a safe and deliverable method that has the potential to meet the expected de-

mand for sterilization in the coming decade. It follows, therefore, that more expanded trials of the quinacrine pellet method should be given high priority for fertility research. Introduction of this method in our national program may help us to reduce the population growth rate to a desired level of 2.5% in the next five year-plan.

#### References

1. Zipper J, Cole LP, Goldsmith A, Wheeler R, Rivera M: Quinacrine hydrochloride pellets: preliminary data on a non-surgical method of female sterilization. *Int J Gynaecol Obstet* 1980; 18:275-9.
2. Bhatt RV, Aparicio A, Laufe LE, Parmley T, King TM: Quinacrine-induced pathologic changes in the Fallopian tube. *Fertil Steril* 1980; 33:666-7.
3. Merchant RN, Doctor VM, Thaku SS, Sinha M, Jhaveri CL, Kessel E, Mumford SD: Clinico-pathological study of Fallopian tubes after transcervical insertion of quinacrine hydrochloride pellets. *Adv Contracept* 1986; 2:49-90.
4. Kessel E, Zipper J, Mumford SD: Quinacrine nonsurgical sterilization: a reassessment of safety and efficacy. *Fertil Steril* 1985; 44:293-8.
5. Blake DA, Dubin NH, DiBlasi MC, et al: Teratologic and mutagenic studies with intrauterine quinacrine hydrochloride. In: Zatuchni GI, Shelton JD, Goldsmith A, Sciarra JJ, eds. *Female transcervical sterilization: proceedings of an international workshop on Nonsurgical Methods of Female Tubal Occlusion*. Chicago, Illinois, June 24, 1982. Hagerstown: Harper and Row, 1983: 71-88.
6. Guzman-Serani R, Bernales A, Cole LP: Quinacrine hydrochloride pellets: three-year follow-up on a non-surgical method of female sterilization. *Contracept Deliv Syst* 1983; 5:131-5.

#### Resume'

L'auteur décrit son expérience d'une **méthode** simple de **stérilisation féminine** non chirurgicale. Le **procédé consiste à** appliquer par voie transcervicale des tablettes de 250 mg. de **qtrinacrine**, en utilisant un introducteur de DIU (**dispositif intra-utérin, stérilet**) **modifié**. L'introduction est **réalisée** dans la phase proliférative du cycle menstruel et **répétée** une fois, un mois plus tard.

Cette **manière** de faire entraîne une inflammation et un processus **cicatriciel limités à** la région des **cornes utérines** et de la **partie** intramurale des **trompes**. Le taux **d'échec** sur la **durée** de la vie (lifetime failure rate) est dit **être** de 5%. Dans son suivi **limité** de 105 patientes, l'auteur n'a pas noté **d'échecs**. Elle n'a pas non plus observé de complications alors que, dans sa pratique au Lady **Wellington Hospital à Lahore**, elle enregistre des complications dans **2,38%** des cas de stérilisation chirurgicale. Vu le potentiel qu'aurait cette **méthode d'être utilisée** largement, y **compris** dans les régions rurales, il est **souhaité** que des **études** complémentaires soient entreprises rapidement.

## Resumen

Describimos nuestra experiencia con un método simple de esterilización sin cirugía en la mujer. El proceder consiste en la inserción a través de la cerviz de 250 miligramos de *quinacrina* en la forma de pelletas, usando un instrumento modificado de inserción de IUD. La inserción se lleva a cabo en la fase proliferativa del período menstrual y es repetida una vez más, después de un mes. El método produce inflamación y cicatriz únicamente en la Area cornual y intramural de la trompa de Falopio. Se reporta que este método tiene un promedio de 5% de insuficiencia o fallo. En nuestro estudio de continuación en 105 pacientes, no se han encontrado ningún fracaso. No se notaron complicaciones cuando estos pacientes se compararon con otros pacientes que tuvieron el método quirúrgico de esterilización femenina al hospital Lady Wellingdon. Debido a que este método podría llevarse a cabo en la comunidad rural de Pakistan, se recomienda que más investigaciones que tienen prioridad alta se empiecen rápidamente.

## ملخص

تقدم الورقة خبرتنا في طريقة مبسطة غير جراحية لتعقيم المرأة، وتمثل الطريقة في إدخال «حبيبات» مادة الكويناقرين خلال عنق الرحم بواسطة آلة تركيب اللولب. ويتم ذلك في الفترة التالية لانتهاج الحيض، وتكرر بعد شهر من ذلك الحين. وهذه الطريقة تؤدي إلى التهاب وتليف نهاية قنوات فالوب وما حول مدخلها إلى الرحم.

وقد نشر من قبل أن هذه الطريقة تفشل في 5% . ولكن تجربتنا في تعقيم ومناجعة ٧٥ حالة بهذه الطريقة لم تحدث أية حالة فشل. كذلك لم نلاحظ مضاعفات الجراحية لتعقيم مبسطة السيدة ولينجتون.

ونظراً لاحتمال انتشار هذه الطريقة الجديدة في باكستان، حتى في المناطق الريفية، فإننا نضع ان نستمر التجارب الإكلينيكية على هذه الطريقة، وإعطائها أولوية خاصة.