



# Quinacrine sterilization: experience among women at high risk for surgery

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## Abstract

A non-surgical method of female sterilization is needed because many women are at high risk of complications with standard surgical methods, especially in developing countries. Also, some women who desire sterilization refuse it for fear of surgery. To meet these special needs, we initiated a trial of quinacrine sterilization (QS), a non-surgical method involving transcervical insertion of 252 mg quinacrine as pellets by a modified IUD inserter. Diclofenac (50 mg) was inserted with the quinacrine pellets. This insertion was repeated a month later and a 150-mg injection of depo medroxyprogesterone was administered at the time of the first insertion. One hundred and thirty-four women of reproductive age entered the trial. Of these, 92 were considered to be at high risk for surgery, 27 had refused surgery, and 15 had had failed surgical sterilization. Mean follow-up was 3.46 years. No pregnancies or serious complications were experienced. The main side-effect was menstrual irregularity, due probably to the depo medroxyprogesterone injection. QS is a suitable option for women at high risk of surgical complications.

## Introduction

Most female sterilization trial reports, including those for quinacrine sterilization (QS), are conducted among healthy women or at least women of average health in their area. To understand how we came to design a QS trial especially for high-risk women, the following aspects of our situation at a government medical school in a predominantly rural area of the Punjab in India must be considered. First, our government advises against surgical female sterilization for women with hemoglobin less than 7 g/dl, but 57% of women in our area are this anemic [1]. Second, since we are based at a referral center, we see women whose life would be endangered by another pregnancy but who are very poor risks for any surgery. Third, women

experiencing sterilization failures are frequently referred to us, but it is known that previous pelvic surgery increases the risk of serious complications of surgical sterilization by a factor of 2.7 [2]. Fourth, we find many women who desire no more children but who fear any surgery, despite their obvious need for sterilization. And, finally, our department has a leadership tradition of promoting choice among well-informed women. One must also consider the general situation of women and their children in the Punjab - 52% are illiterate, the mean number of years of schooling being 2.0. They have an average of 2.9 children, compared with 3.4 for all of India, but 46% of children under 4 years of age in the Punjab are underweight and 40% are stunted [3] Fewer than half of the women who say they want no more children are actually protected by sterilization.

It was in this context, and after reviewing published reports showing the safety and reasonable efficacy of QS [4-6], that we decided to make this method available in our department.

## Materials and methods

From December 1993 through July 1999, we studied 134 women of reproductive age who had two transcervical insertions of 7 quinacrine pellets (252 mg; Sipharm, Sissein, Switzerland) with 2 diclofenac pellets (50 mg) a month apart during the proliferative phase of the menstrual cycle. A modified IUD inserter was used to perform the insertions that placed the pellets at the fundus following the standard protocol [7]. One 150-mg injection of depo medroxyprogesterone acetate (DMPA) was given with the first insertion as an additional contraceptive.

Of this group, 92 women were considered at high risk for surgery (having anemia, cardiovascular disease, bronchial asthma and a history of pelvic inflammatory disease); 27 had chosen a non-surgical procedure; and 15 had experienced earlier surgical sterilization failure or those for whom the operation was not technically feasible. All of these women gave their informed consent to undergo this procedure. Follow-up was scheduled for 1, 3, 6 and 12 months, and then annually, after the second insertion or whenever side-effects or complications were experienced. Home visits were made when the women did not report to the clinic. Three additional women were lost to follow-up and are not included in this analysis.

## Results

No pregnancies or serious complications were reported. The mean follow-up was 3.46 years, with a minimum follow-up of 1 year. The main side-effect was transient menstrual irregularity, due probably to the DMPA injection. Other side-effects included transient lower abdominal pain, oligomenorrhea or amenorrhea and mild post-insertion bleeding.

## Discussion

This is the first reported use of QS in women at high risk for surgery. The absence of major complications in this trial suggests that more experience is indicated in providing this option for such women. For normal women, QS experience exceeds 100 000 cases [8] and long-term concerns about the risks of ectopic pregnancy, birth defects and cancer appear to be similar to those for surgical sterilization [9]. Pregnancy failures are reported to be about twice those of surgical sterilization [9] but this may be acceptable to some well-informed women.

We conclude that QS is a reasonable option, especially for women who are at high risk with the surgical procedure.

## Acknowledgements

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## References

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## Resumé

Il est nécessaire de disposer d'une méthode non chirurgicale de stérilisation parce que les méthodes chirurgicales courantes exposent de nombreuses femmes à des risques élevés de complications, surtout dans les pays en développement. Par ailleurs, certaines femmes qui souhaiteraient se faire stériliser, s'y refusent par crainte de l'intervention chirurgicale. Pour répondre à ces besoins spéciaux, nous avons mis en

train un essai de stérilisation à la quinacrine (SQ), c'est-à-dire une méthode non chirurgicale par insertion transcervicale de 252 mg de quinacrine sous forme de pellets à l'aide d'un instrument d'insertion modifié. 50 mg de diclofenac ont été insérés en même temps que les pellets de quinacrine. Cette insertion a été répétée un mois plus tard et 150 mg de dépo-médroxyprogestérone ont été injectés au moment de la première insertion. Cent trente-quatre femmes en âge de procréer ont été admises à participer à cet essai: 92 présentaient des risques chirurgicaux élevés, 27 avaient refusé toute intervention chirurgicale et chez 15, la méthode chirurgicale avait échoué. Le taux de suivi a été en moyenne de 3,46 ans. Aucune grossesse ou complication grave ne s'est produite. Des irrégularités menstruelles ont été l'effet secondaire principal, sans doute imputable à la dépo-médroxyprogestérone. La SQ est une option qui convient aux femmes présentant des risques élevés de complications d'ordre chirurgical.

### **Resumen**

Se necesita un método no quirúrgico de esterilización femenina porque muchas mujeres corren alto riesgo de complicaciones ocasionadas por los métodos quirúrgicos habituales, especialmente en países en desarrollo. Además, algunas mujeres que desean esterilización la rechazan por temor a la cirugía. A fin de satisfacer estas necesidades especiales, iniciamos un ensayo de esterilización con quinacrina (QS), método no quirúrgico que comprende la colocación transcervical de 252 mg de quinacrina como pellets con un colocador DIU modificado. Con los pellets de quinacrina se insertaron 50 mg de diclofenac. Esta inserción se repitió al mes y se administró una inyección de 150 mg de depo medroxiprogesterona en el momento de la primera inserción. Ciento treinta y cuatro mujeres de edad reproductiva participaron en este ensayo, de las cuales 92 eran consideradas de alto riesgo para la cirugía, 27 habían rechazado una intervención quirúrgica y 15 habían tenido una esterilización quirúrgica que había fracasado. El seguimiento medio fue 3,46 años. No se registró ningún embarazo ni complicación grave. El principal efecto secundario fueron irregularidades menstruales, ocasionadas probablemente por la depo medroxiprogesterona. La QS es una opción apropiada para mujeres a alto riesgo de complicaciones quirúrgicas.