

Hysteroscopic sterilisation

Lucian Pop¹, Nicolae Bacalbasa^{2,3}, Irina Balescu⁴, Ioan D. Suci⁵, Roxana Elena Bohiltea²,
Claudia Stoica^{6,7}

¹“Alessandrescu-Rusescu” National Institute of Mother and Child Care, Bucharest, Romania

²Department of Obstetrics and Gynecology, “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

³Department of Visceral Surgery, Center of Excellence in Translational Medicine,
Fundeni Clinical Institute, Bucharest, Romania

⁴Department of Visceral Surgery, Ponderas Academic Hospital, Bucharest, Romania

⁵General Surgery Department, Floreasca Emergency Hospital, Bucharest, Romania

⁶Department of Anatomy, “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

⁷Department of Surgery, Ilfov County Emergency Hospital, Bucharest, Romania

ABSTRACT

A patient requesting sterilisation envisages an easy to perform, safe cheap and reversible method. Despite best efforts of researchers and pharma companies, such a device has not been produced yet. Female sterilisation is one of the most common procedures and encompasses tubal ligation, laparoscopic salpingectomy or hysteroscopic sterilisation. This short review focuses on role of hysteroscopy on sterilisation and informed consent as sterilisation is a legacy for the rest of a woman life.

Keywords: hysteroscopy, sterilisation, essure

INTRODUCTION

According to Royal College of Obstetricians and Gynecologists (RCOG) guidelines, female has a failure rate of 1/200, vascular injury of 1/1,000, bowel injury and shoulder pain because of pneumoperitoneum [1,2]. Less invasive techniques have been thought as this would enable faster recovery and earlier return to work. It is most helpful in women with previous abdominal surgery, where laparotomy would prove to be difficult. Hysteroscopic sterilisation is achieved by introducing coils in both tubes. There are several types of devices, but the one that is widely used is essure (Conceptus, Inc., San Carlos, CA, USA). More than 700,000 procedures have been performed since 2002. More than 5000 incidents have been registered, majority of patient injury reports. Among these reports are vaginal bleeding up to one week. These complaints occurred in 57% of women; pain in 31% mostly mild, with 4% stating it to be as severe as their usual level of dysmenorrhoea; and perforation (1%) [2,3].

STERILISATION TECHNIQUES

This procedure involves introduction of a typical 5.5 mm with a 5 Fr operating channel into the intramyometrial part of the fallopian tube; all devices contain a 4 cm long nickel-titanium (Nitinol®, NDC, Fremont, CA, USA) mixture outer coil within which lie polyethylene terephthalate (PET) fibres. From beginning to end, it takes on average 9 minutes from insertion to the removal of the hysteroscope. The consequence of the PET insertions is fibrosis in the intramural portion, which reaches its peak at three months post-insertion. Initially, an X-ray was performed at three months to check the position of the device but now a transvaginal ultrasound is sufficient and reliable [2,4,5]. Placement failure of both coils occurs in 4-24% of procedures; in this case a further procedure is necessary for a successful placement. Different studies report a high satisfaction rate, in the range of 96% to 97% [2].

Endometrial ablation post essure insertion is possible with thermal ablation. Older generations

Corresponding author:

Nicolae Bacalbasa

E-mail: nicolae_bacalbasa@yahoo.ro

Article History:

Received: 4 December 2021

Accepted: 30 December 2021

ablations techniques are contraindicated because of the electrical transmission along with the device [5].

The estimated pregnancy rates after confirmation of tubal occlusion currently may be a pregnancy rate of 1.5% (99 pregnancies/6,505 women with confirmed occlusion) extrapolated from a systematic review of the literature for hysteroscopic sterilisation – successful IVF procedure after Essure insertion has been reported [5].

Comprehensive counselling is mandatory, and the follow-up importance must be enhanced at every appointment before and after the procedure [6]. For three months post-insertion, another contraception method is necessary. Reports of non-compliance at three months varies between 6-87% [7,8].

REGRETS OF STERILISATION

According to the U.S. Collaborative Review of Sterilization study, the regret rate over a 14 years period was 14.7%. In younger women, the rate was 20.3% and 5.9% in older women. The probability of asking for consultation for reversal is somehow similar to the chance of regret and young age at the

time of sterilisation. In most studies incidence of reversal is of 1-2% [9].

An Australian study conducted over 1898 of women that underwent tube reversal and IVF, showed that the conception rate at five years of age is higher for younger women compared to the older ones. Other authors showed similar findings with the caveat that anastomosis is more cost-effective than IVF for women of all ages. If a woman underwent bilateral salpingectomy, the only solution for a pregnancy is an IVF, which has a cost more than double compared to a reversal surgery [10-12].

CONCLUSIONS

Female sterilisation is an important step in a woman life and it is ultimately her personal choice. The gynaecologist role is to provide her with robust and up to date information, regarding all types. Hysteroscopic insertion is now a proven and effective way to achieve sterilisation when associated with patient compliance. Further devices are now being studied, and future will show us if an effective and reversible method will be introduced in clinical practice or this request is still elusive.

Conflict of interest: none declared
Financial support: none declared

REFERENCES

1. Royal College of Obstetricians and Gynecologists (RCOG). Female Sterilisation. Patient consent no 3. 2016, RCOG Press.
2. Kerin JF, Levy BS. Ultrasound: an effective method for localization of the echogenic Essure sterilization micro-insert: correlation with radiologic evaluations. *J Minim Invasive Gynecol.* 2005;12(1):50-54.
3. Kerin JF, Carignan CS, Cher D. The safety and effectiveness of a new hysteroscopic method for permanent birth control: results of the first Essure pbc clinical study. *Aust N Z J Obstet Gynaecol.* 2001; 41(4):364-370.
4. Stuart GS, Ramesh SS. Interval Female Sterilization. *Obstet Gynecol.* 2018;131(1):117-124.
5. Baxter AJ. Advances in hysteroscopic sterilisation. *The Obstetrician & Gynaecologist.* 2006;8:103-106.
6. Lundsberg LS, Pal L, Garipey AM, Xu X, Chu MC, Illuzzi JL. Knowledge, attitudes, and practices regarding conception and fertility: a population-based survey among reproductive-age United States women. *Fertil Steril.* 2014;101(3):767-774.
7. Creinin MD, Zite N. Female tubal sterilization: the time has come to routinely consider removal. *Obstet Gynecol.* 2014;124(3):596-599.
8. Garipey AM. Probability of pregnancy after sterilization: a comparison of hysteroscopic versus laparoscopic sterilization. *Contraception.* 2014;90(2):174-181.
9. Van Voorhis BJ. Comparison of tubal ligation reversal procedures. *Clin Obstet Gynecol.* 2000;43(3):641-649.
10. Malacova E, Kemp A, Hart R, Jama Alol K, Preen DB. Effectiveness of in vitro fertilization in women with previous tubal sterilization. *Contraception.* 2015;91(3):240-244.
11. Malacova E, Kemp A, Hart R, Jama-Alol K, Preen DB. Live delivery outcome after tubal sterilization reversal: a population-based study. *Fertil Steril.* 2015;104(4):921-926.
12. Fernandez H, Legendre G, Blein C, Lamarsalle L, Panel P. Tubal sterilization: pregnancy rates after hysteroscopic versus laparoscopic sterilization in France, 2006-2010. *Eur J Obstet Gynecol Reprod Biol.* 2014;180:133-137.