

Samantha Low · Kevin Smith

## TCRE and Mirena: is the combination better?

Received: 2 August 2005 / Accepted: 29 November 2005 / Published online: 16 May 2006  
© Springer-Verlag Berlin / Heidelberg 2006

**Abstract** In the management of menorrhagia, endometrial ablation techniques or intra-uterine progesterone-containing devices are employed when medical therapy fails. We postulated that the insertion of a Mirena IUS at the time of a TCRE would improve upon the success rates found when either is used individually. In a small pilot study, we identified patients who had both a TCRE and Mirena over a 26 month period. Those younger than 45, with a follow-up period of one year formed the final study group of 18. There were high rates of patient satisfaction, with a significant reduction in menstrual bleeding in the majority of patients. An amenorrhoea rate of 67% was achieved, which is significantly higher than the rates found with either TCRE or Mirena alone.

**Keywords** Menorrhagia · Endometrial ablation · TCRE · Mirena

### Introduction

Menstrual disorders constitute 12% of all gynaecology referrals in the UK [1], and menorrhagia affects 20–30% of healthy women [2].

Traditionally, hysterectomy has been the mainstay of treatment for patients with menorrhagia. It does, however, have a number of disadvantages, including relatively high morbidity and mortality rates and high costs.

Because endometrial ablation is less invasive and less expensive and has lower mortality and morbidity rates, it is becoming increasingly popular. Various techniques are available, including transcervical resection of the endome-

trium (TCRE), laser ablation (ELITT; ESC Sharplan), thermal balloon ablation (Gynecare Thermachoice; Ethicon), cryotherapy (Her Option; AMS), impedance-controlled endometrial ablation (NovaSure; Novacept), and microwave ablation (MEA; Microsulis).

All methods of endometrial ablation aim to destroy the endometrium. The process involves removing the full thickness of the endometrium together with the superficial myometrium and the basal glands, which are thought to be the focus of endometrial growth. Endometrial tissues, however, have amazing regenerative properties, with a controlled growth rate exceeding that of all known tumours. Within days of the onset of menses, under appropriate oestrogen stimulation, the endometrium regenerates, rapidly achieving a thickness of 8–10 mm. Attempts to destroy the endometrium and achieve amenorrhoea have, therefore, been met with limited success.

The levonorgestrel intrauterine system (Mirena; Schering), a highly effective contraceptive device, has also been used in managing menorrhagia because it hormonally suppresses endometrial proliferation.

We postulated that the insertion of a Mirena intrauterine system (IUS) at the time of TCRE might improve upon the success rates found when each is used individually.

### Methods

All patients who underwent TCRE with insertion of a Mirena IUS over a 25-month period, from August 2002 until March 2005, were identified. Patients over the age of 45 were excluded to ensure that the results would not be affected by menopausal amenorrhoea. Only those patients with a minimum follow-up period of 12 months were included in the analysis. Twelve months is probably an adequate follow-up period, as shown in a study by Perino et al. in which they demonstrated that rates of amenorrhoea at 36 months were virtually the same as those found at 12 months [3].

The outcome measures were bleeding status and patient satisfaction, as determined by questionnaire.

S. Low (✉)  
Department of Obstetrics and Gynaecology,  
Wycombe Hospital, Queen Alexandra Road, High Wycombe,  
Buckinghamshire, HP11 2TT, UK  
e-mail: low\_samantha@yahoo.com

K. Smith  
Department of Gynaecology, Royal Berkshire Hospital,  
Berkshire, UK

## Results

A total of 51 patients underwent TCRE with insertion of a Mirena IUS during the study period. The procedures were all carried out by, or were under the direct supervision of, the same consultant gynaecologist. Thirty patients were 45 years or younger, and 19 of these had a minimum follow-up period of 12 months. We were unable to contact one patient. The final study group, therefore, comprised 18 patients.

The mean age of these patients was 42 years, with follow-up intervals ranging from 12 to 21 months. The mean follow-up interval was 15.6 months.

In the management of menorrhagia, patient satisfaction is important in evaluating the success of treatment. Fifteen of the 18 patients (84%) were 100% satisfied with the results. Two patients (11%) were partially satisfied. Both reported some improvement in bleeding but had been hoping for more improvement. Only one patient (5%) was dissatisfied with the results of the procedure.

Encouraging results were obtained with regard to bleeding status. Amenorrhoea was achieved in 67% of patients, with 28% experiencing lighter bleeding. One patient (5%) reported continued heavy, irregular bleeding. She underwent a hysterectomy within 4 months of the procedure.

## Discussion

Studies that have assessed the success of TCRE have shown that between 10% and 24% of patients experience no change in the severity of their bleeding [4–6]. On average, 20% of patients will require further surgery following TCRE [7]. Factors that reduce the efficiency of TCRE and increase the need for subsequent surgery include incomplete removal of the endometrium, adenomyosis [8, 9] and inflammation [9].

Twelve percent of patients with a Mirena IUS in situ report no change in symptoms [10]. One disadvantage of the Mirena IUS is the erratic vaginal bleeding that may occur in the early months of its use. Inserting the coil at the time of TCRE will eliminate this problem.

With both TCRE and Mirena, only 5% of our patients experienced no change in the severity of their bleeding.

The reported amenorrhoea rates for TCRE and Mirena alone are quite similar, with 23–45% of TCRE patients [4–7, 11–13] and 20–50% of those with a Mirena [1] reporting a complete absence of menstrual periods. When TCRE and Mirena are combined, the amenorrhoea rate was significantly higher, 67%.

In addition to improving outcomes, inserting a Mirena coil at the time of TCRE may be valuable for treating patients with adenomyosis and also provides effective contraception. Although endometrial ablation reduces fertility, it does not eliminate it.

This small pilot study has shown favourable results, with high rates of patient satisfaction. Most patients experienced a significant reduction in menstrual bleeding, and the rates of amenorrhoea were higher than with either TCRE or Mirena alone. It is appreciated that larger studies with longer follow-up periods will be required to confirm these findings; however, these preliminary findings indicate that the use of a Mirena IUS in combination with TCRE may be more effective in treating menorrhagia than either therapy alone.

## References

1. Lethaby A, Cooke I, Rees M (2000) Progesterone/progestogen releasing intrauterine systems versus either placebo or any other medication for heavy menstrual bleeding. *Cochrane Database Syst Rev* 2:CD002126
2. Sculpher M, Bryan S, Dwyer N et al (1993) An economic evaluation of transcervical endometrial resection versus abdominal hysterectomy for the treatment of menorrhagia. *Br J Obstet Gynaecol* 100:244–252
3. Perino A, Castelli A, Cucinella G et al (2004) A randomized comparison of endometrial laser intrauterine thermotherapy and hysteroscopic endometrial resection. *Fertil Steril* 82(3): 731–734
4. Xia E, Zhang M, Duan H (1997) Analysis of the outcomes of transcervical resection of endometrium in 400 cases with menorrhagia. *Zhonghua Fu Chan Ke Za Zhi* 32(3):148–151
5. Hunter DC, McClelland HR (1998) Trans-cervical resection of the endometrium: the first four years' experience at the Belfast City Hospital. *Ulster Med J* 67 (1):29–32
6. McAuliffe F, English J, Prendiville W (1996) Patient satisfaction following transcervical resection of the endometrium. *Ir J Med Sci* 165(3):170–172
7. O'Connor H, Magos A (1996) Long-term results of endometrial resection. *J Am Assoc Gynecol Laparosc* 3(4, Supplement):S35
8. Xia EL, Duan H, Huang XW et al (2004) Evaluation on clinical application and long term outcomes of transcervical resection of endometrium. *Zhonghua Fu Chan Ke Za Zhi* 39(5):296–300
9. Duan H, Liang YJ, Li L et al (2003) Research on repairing patterns and factors causing subsequent surgery after transcervical resection of endometrium. *Zhonghua Fu Chan Ke Za Zhi* 38(12):741–744
10. Barrington JW, Bowen-Simpkins P (1997) The levonorgestrel intrauterine system in the management of menorrhagia. *Br J Obstet Gynaecol* 104(5):614–616
11. Magos AL, Baumann R, Lockwood GM, Turnbull AC (1991) Experience with the first 250 endometrial resections for menorrhagia. *Lancet* 337(8749):1074–1078 May 4 1991. Erratum in: *Lancet* 337(8753):1362
12. Perino A, Castelli A, Cucinella G, Biondo A, Pane A, Venezia R (2004) A randomized comparison of endometrial laser intrauterine thermotherapy and hysteroscopic endometrial resection. *Fertil Steril* 82(3):731–734
13. Battacharya S, Cameron IM, Parkin DE et al (1997) A pragmatic randomised comparison of transcervical resection of the endometrium with endometrial laser ablation for the treatment of menorrhagia. *Br J Obstet Gynaecol* 104(5): 601–607