

## When second-generation endometrial ablation fails—a review of 200 cases of endometrial ablation

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### Background

Menorrhagia is the most common reason for gynaecological consultation in the UK [1]. Historically, when medical therapy for menorrhagia failed, hysterectomy was the primary surgical option. Endometrial ablation has emerged as a minimally invasive alternative to hysterectomy. Newer ‘second-generation’ endometrial ablation techniques such as THERMACHOICE® and NovaSure® have been developed.

Published reports focus primarily on first-generation methods and describe a wide range of hysterectomy rates ranging from 8–29 % [2–9]. To improve our knowledge of how to best counsel patients considering endometrial ablation, we conducted a retrospective review analysis of patients who underwent second-generation endometrial ablation. Our goal was to estimate the relative importance of age of onset of menorrhagia, BMI, parity, presence of dysmenorrhoea, previous normal vaginal deliveries/caesarean sections, and type of endometrial ablation in predicting endometrial ablation failure as defined by subsequent hysterectomy.

### Methods

A retrospective study was performed on women who underwent THERMACHOICE® and NovaSure® between

July 2007 and August 2011 at a district general hospital in Northern Ireland. Two hundred cases of endometrial ablation were identified and their charts reviewed. All women undergoing subsequent hysterectomy after the initial endometrial ablation were identified. Statistical analysis was performed using SPSS 20. Each prognostic variable was evaluated in a univariable logistic regression model.

### Findings

Of the 200 patients who had endometrial ablation, 32 (16 %) had had a hysterectomy after their ablation as treatment for menorrhagia.

The mean ablation to hysterectomy interval was 14 months (range 5–50). Abnormal pathology was confirmed in 84 % of women who underwent hysterectomy (adenomyosis=59 %, fibroids=15 % and fibroids and adenomyosis=26 %). Mean weight of specimens at hysterectomy: 141 g (range 95–450 g). Average age of hysterectomy was 45 (range 31–57) and mean BMI was 30 (range 18–44).

Table 1 show the *P* values (where *P*<0.05 is significant) for the different prognostic values.

Our results demonstrate that age of onset of menorrhagia, dysmenorrhoea, parity, previous normal vaginal deliveries/caesarean section, BMI and type of ablation are not good predictors of failing endometrial ablation. It is important to note that the correlation between normal vaginal delivery and failure of endometrial ablation is almost significant. This is most likely due to the retrospective design of the study.

### Conclusions

In this study, we assessed prognostic failures for endometrial ablation. From our study, 16 % of patients undergoing second-

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**Table 1** Factor *P* value

Age of onset of menorrhagia	0.937
Dysmenorrhoea	0.069
NVD	0.051
C/S	0.618
Parity	0.071
BMI	0.683
Type of ablation	0.564

generation endometrial ablation proceeded to hysterectomy for ongoing menorrhagia. We found that age of onset of menorrhagia, dysmenorrhoea, parity, previous normal vaginal deliveries/caesarean section, BMI and type of ablation are not good predictors for failing endometrial ablation. [10].

The main limitation of our study was its retrospective nature. This resulted in partly precluding some objective pre-operative factors and objective treatment outcomes, for example Pictorial Blood Loss Assessment Chart score. Naturally, we realised that retrospective data collection is not as reliable as prospective data collection.

Possible better imaging such as MRI and ultrasound scans pre-operatively to assist diagnosing adenomyosis and fibroids may help identify patients where endometrial ablation is more likely to fail and therefore improve patient satisfaction and cost efficiency.

**Conflict of interest** Kathy Niblock, Abdelmageed Abdelrahman and Keith Johnston declare that they have no conflict of interest. This article

does not contain any studies with human or animal subjects performed by the any of the authors.

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