

## **Hysteroscopic Endometrial Resection in the Management of Abnormal Uterine Bleeding Among Libyan Women**

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### **ABSTRACT**

**Background:** Abnormal uterine bleeding (AUB) is a major health problem and it is a substantial cause of ill health in women. Medical treatment has a high failure rate and adverse effects. There are few published data on hysteroscopic endometrial resection (HER) in the management of patients with AUB.

**Objective:** To investigate the efficacy and outcomes of hysteroscopic endometrial resection (HER) in patients with AUB.

**Materials and Methods:** A descriptive hospital - based study was carried out at the departments of Obstetrics and Gynecology, Misurata and Sirt, Libya, during the period from January 2009 to December 2013. Women with AUB were recruited in the study. All women had a detailed medical and obstetrical history, physical examination and the hysteroscopic endometrial ablation and were followed-up for success or failure of the procedure which was assessed via symptoms (bleeding).

**Results:** A total of 120 women with mean (SD) of age and parity of 42.3 (6.8) years and 3.8 (2.4), respectively were recruited in the study initially. Thirty (25%) of these women were lost of follow-up. Therefore, only 70 women (50 with DUB, and 20 women with fibroids) were available for the final analysis. All women underwent hysteroscopic endometrial resection and 28 of them had hysteroscopic myomectomy. The success rate was 92.8% (65/70) after 2 years follow up. All the five women with failure of the procedure were younger (<40 years); had bleeding with dysmenorrhea, bigger uterine size, thicker endometrium (> 7 mm) and they had fibroids.

**Conclusions:** Endometrial resection is an effective procedure in the majority of women with AUB, especially in those over age of 40 and without an increase in uterine size and has no fibroids.

**Keywords:** Uterine bleeding, hysteroscopic, endometrial resection, Libya.

**A**bnormal uterine bleeding (AUB) is a substantial cause of ill health in women worldwide where it accounts for up to 20% of visits to the gynecologist<sup>1</sup>. It has been shown that 79% of women with UB might not have identifiable source of such bleeding (polyps, myomas, hyperplasia, or carcinoma), and subsequently leave the clinician with a "diagnosis of exclusion" of dysfunctional or anovulatory uterine bleeding (DUB)<sup>2</sup>. Therefore reasons for such dysfunction and the actual mechanisms of

bleeding are still unclear. Once a proper diagnosis is established, there is again no consensus on the best treatment, including surgical approaches versus non-surgical approaches with hormonal and nonhormonal drug therapy.

Drug therapy is usually the first line of treatment, yet its results are variable and transient, reducing the blood loss by at most 50%. Antifibrinolytic agents, non-steroidal anti-inflammatory drugs have been used to reduce the excessive bleeding<sup>3-5</sup>. Danazol and Gonadotropin releasing hormone (GnRH) analogue treatment although effective, they usually not tolerated for long periods of time, due to its side effects<sup>5,6</sup>. Cyclical progestogens can be used for short-term treatment of menorrhagia<sup>7</sup> whereas Levonorgestrel-releasing intrauterine system

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(LNG IUS) found to be effective and less invasive especially in younger patients with a desire to preserve fertility<sup>8,9</sup>.

Surgery for AUB is usually preferred after unsuccessful medical treatment or when this therapy is contraindicated. Uterine curettage, long used as diagnostic or therapeutic method, proved inefficient for both. Hysterectomy has been traditionally employed as a definitive treatment for AUB. However, despite its high cure the major surgical procedure has significant complications, requiring a long recovery time and resulting in high economic and social costs<sup>4,1</sup>.

As the choice of operation has been moving towards more conservative procedures with minimally invasive approaches, hysteroscopic methods of endometrial ablation has been gaining popularity since its introduction in 1980s<sup>11</sup>. For hysteroscopic endometrial ablation with roller balls and /or resectoscopes, numerous studies attest to their safety and short-term success in reducing the menstrual flow with minimal complications<sup>5,12-14</sup>. However, there are still concerns regarding long-term results and the need for further treatment. Previous studies reported that free from symptoms seemed to diminish with time; 10-38% of patients either received postoperative adjuvant hormonal therapy or underwent repeat endometrial resection or hysterectomy<sup>15-17</sup>.

It is impossible for the physician to predict in which patient the treatment will be successful. Data showed that most pitfalls occur within 12-24 months from the initial treatment<sup>4</sup>. Therefore, it is important to know the factors that influence the success or failure of treatment and the recurrence of AUB in order to be able to plan the best therapy. Thus the objective of this study was to evaluate the results of hysteroscopic endometrial resection in patients with AUB of benign etiology and report possible factors of success and failure of treatment.

#### **MATERIALS AND METHODS:**

A descriptive hospital - based study was carried out at the departments of Obstetrics and Gynecology and Fertility Care Unit at

Misurata Central Hospital, Misurata Cancer Centre and Iben-Sina Teaching Hospital, Sirt, Libya, during the period from January 2009 to December 2013. Women aged 35-50 years with AUB were recruited in the study if they completed their families. If they had DUB and medical treatment failed/ produced side effects. However, presence of resectable submucous fibroids did not preclude endometrial resection. Women with uterine size greater than 12 weeks pregnancy, large uterine fibroid, endometrial atypical hyperplasia or endometrial carcinoma were excluded from the study.

After signing an informed consent; all women had a detailed medical and obstetrical history, physical examination, pelvic ultrasonography, diagnostic hysteroscopy and endometrial sampling. Then uterine size, endometrial thickness and presence of associated uterine pathology were investigated. These various pre-operative and intra-operative factors were used to assess their effect on the outcome of endometrial resection.

The hysteroscopic endometrial ablation technique used was resection with monopolar electrical surgery, utilizing a 26-French resectoscope, with a 4-mm and 30-degree optics. The procedure started with cauterization of the uterine fundus and the region near to the tubal ostia with a rollerball loop, coagulation mode, with 90 W of power. Then, the resection was made with a U-loop, cut mode, and 90 W of power. A region of approximately 1 cm of endometrium from the inner orifice of the uterine cervix was preserved. Finally, using rollerball loop, hemostasis was achieved. To produce distension of the uterine cavity, 1.5 % glycine was used, with intracavitary pressure control by an electronic infusion pump, maintained between 80 and 120 mmHg. Any specimen was sent for histopathological analysis.

No drugs were given to suppress the endometrium before the procedure, however some women received (Norethisterone acetate) 10 mg daily for 3 months as a treatment for their menstrual problems but without improvement. Following surgery, women were followed up for 24 months as

most of the failures/ complications could occur within 12-24 months from the initial treatment<sup>4</sup>.

All women were requested to report their menstrual patterns. The procedure was considered successful in the cases which presented with amenorrhea, hypomenorrhea during the follow up. Those who required further medical treatment or additional surgery (hysterectomy) to control the bleeding were considered as treatment failure. During the follow-up success or failure of the procedure was assessed via symptoms of either bleeding only or bleeding associated with dysmenorrhea, ultrasonographic hysteroscopic findings and histopathological findings of the operative specimens of the resected tissue or the uterus after hysterectomy for failure of the procedure to control bleeding were considered.

**Ethics:**

This study was approved by the Ethical Committee of the Faculty of Medicine at Misurata University, Libya

**RESULTS:**

A total of 120 women with mean (SD) of age and parity of 42.3 (6.8) years and 3.8 (2.4), respectively were recruited in the study initially. Ninety five, 30 and 25 of these 120 women had DUB, had associated dysmenorrhea and submucosal fibroids,

respectively. Histological examination of the resected endometrium for these 120 women is shown in figure 1. Thirty (25%) of these women were lost of follow-up. Therefore, only 70 women (50 with DUB, and 20 women with fibroids) were available for the final analysis. Thirty patients with DUB had received medical treatment (Norethisterone acetate) 10 mg daily for three months without response. Ultrasonographic examination of these patients demonstrated an endometrial thickness ranging from 3-7mm in 25 women. In the remaining women, medical treatment was contraindicated or discontinued because of its side effect.

All women underwent hysteroscopic endometrial resection and 28 of them had hysteroscopic myomectomy. The success rate was 92.8% (65/70) after 2 years follow up in the form of amenorrhea (28, 40%) and hypomenorrhea (37, 52.8%)

All the five women with failure of the procedure had younger (<40 years) age; bleeding with dysmenorrhea, bigger uterine size, thicker endometrium (> 7 mm) and they had fibroids.

The reasons for hysterectomy in the patients were heavy bleeding and cyclic pelvic pain. The uterine pathology identified from the removed uteri was adenomyosis (3) and intramural fibroids (2).

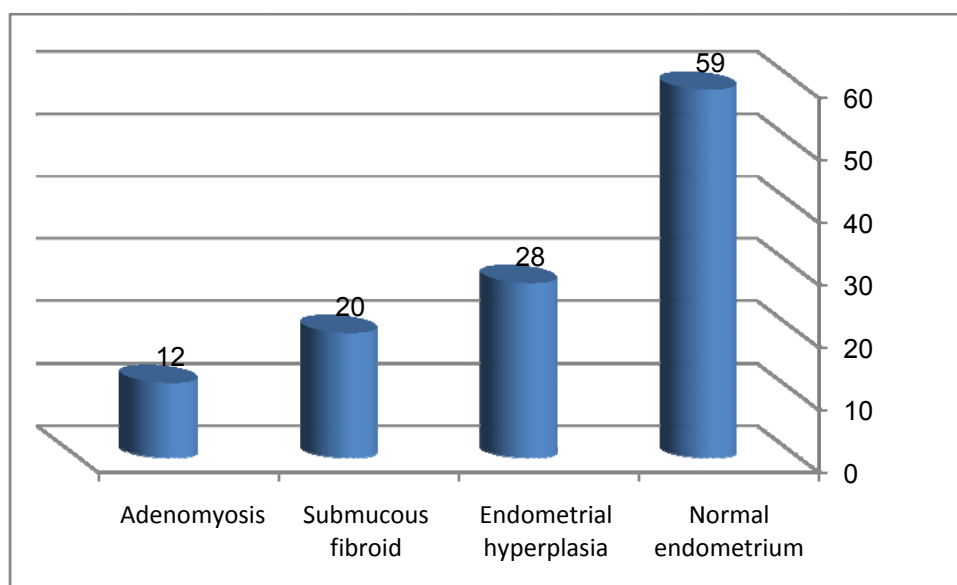


Figure 1: The detected pathology among the initially recruited Libyan women

## DISCUSSION

Endometrial resection is the most popular technique of hysteroscopic endometrial ablation and it was introduced as a more conservative alternative to hysterectomy for selected women. The advantages of the procedure were; reduced operative risks as it is done under direct vision, shorter operating times and postoperative hospital stays with possibly lower costs<sup>14,16,18</sup>. In addition, the excised tissue can also be examined histologically. Actually, in the current study, endometrial resection was completed easily without any complications. On the other hand, controversies persist regarding the risk of failure and long-term safety.

The successful treatment rate in this study was 92.8% after 2 years follow up. Various success rates (52 - 98%) were previously reported<sup>19</sup>. Recently, Takahashi reported a success rate of 80.6% after 5 years follow up<sup>17</sup>. These different results of hysteroscopic endometrial resection could be explained by different methods/ patients selection criteria in the different studies. Perhaps endometrial resection success or failure is dependent on patients' characteristics and peri-operative uterine findings.

In the current study, women with the failure had younger age, larger uterine size and had a thicker endometrium. Shamonki *et al.*, reported a failure rate of 43% and 19% among women aged  $\leq 40$  years and  $> 40$  years respectively<sup>20</sup>. Moreover, Gemer *et al.*, reported that the risk of an adverse outcome declined steadily with increasing age and the risk of failure is less likely in women over 42 years<sup>21</sup>. Age related failure may be attributed to the hormonal status with remarkable capacity of the remnant endometrium to regenerate with recurrence of heavy bleeding in younger women.

Interestingly, in this setting 12/90 women who were initially recruited and 3/5 of the failed cases had adenomyosis on histological examination of the resected endometrium. There is a controversy whether to perform endometrial resection for women with dysmenorrhea which is likely due to adenomyosis or not. Simple endometrial

resection might not be able to resolve adenomyosis which -by definition -penetrate at least 2.5 mm into the myometrium. Thus, resection must be deeper with increased risk of hemorrhage and uterine perforation<sup>22, 23</sup>. Endometrial resection followed by the insertion of Mirena was observed to have a higher rate of success in the form of amenorrhea in patients with adenomyosis<sup>24</sup>. Therefore, if adenomyosis is suspected, women can be appropriately counseled so that they are aware of the possible failure of conservative management.

The acceptable uterine size of less than 12 weeks pregnancy and some investigators confined their work to an enlarged uterus between 8-10 weeks pregnancy<sup>25</sup>. In fact, to avoid unsatisfactory outcomes, endometrial resection can be undertaken only when the uterus is of normal size or enlarged up to 8 weeks pregnancy as greatly enlarged uterus lengthen the operative time and increase the risk of complications even before completing the procedure<sup>14</sup>.

Preoperative endometrial suppression has been recommended as a standard practice. Preoperative medication with GnRH analogues (Danazol) has been suggested to provide better suppressive results and a success rate over 95%<sup>26</sup>. Also, long-acting gestagens may confer the added advantage of decreasing blood flow and allowing better hysteroscopic visualization<sup>27</sup>. However, endometrial resection could be safe and effective without endometrial preparation<sup>28</sup>. A thin endometrium allows easier destruction of the basal layer of endometrium, these women had a significantly higher success rate than those without treatment. In addition, perioperative and postoperative medical treatment such as long-acting gestagens and tranexamic acid is an option in inducing amenorrhea after resection<sup>29,30</sup>.

Although previous studies showed that the endometrial resection may be combined with hysteroscopic myomectomy and myomas are not an absolute contraindication<sup>31,32</sup>, our study showed that two out of the five women with endometrial resection failure had uterine fibroid. In addition to the technical and visual

difficulties encountered by submucous fibroid during the procedure, regrowth of the excised fibroid could develop later which could lead to procedure failure. This result was consistent with other studies which concluded that the presence of submucosal myoma increases the risk of subsequent surgery in patients undergoing endometrial resection<sup>25</sup>. This was also supported by increased incidence of such lesions in uteri removed by hysterectomy for the treatment failure. In the present study, the most common lesions encountered were adenomyosis and small intramural fibroids.

In the literature, there is sufficient evidence about the efficacy and safety of endometrial resection for the management of women with AUB even after repeat of the procedure<sup>33-36</sup> which will further reduce the incidence of hysterectomy. In the present study, this procedure provided a chance of avoiding the need for hysterectomy in over 90% of the studied women, and it was carried out successfully without any complications.

#### CONCLUSION:

Endometrial resection offers a high cure rate and avoids the need for hysterectomy in the majority of women with DUB. However, to ensure successful outcome, women should be carefully selected to include only those who are > 40 years of age, without dysmenorrhea, with preoperative thin endometrium and have no uterine fibroids. On the other hand, those women who are at greater risk of failure should be counseled for an alternative procedure such as hysterectomy.

#### Conflict of interest:

We declare that we have no conflict of interest.

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