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Original Research Article

Transcervical resection of endometrium as a conservative management of dysfunctional uterine bleeding in premenopausal patients

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ABSTRACT

Background: Dysfunctional uterine bleeding (DUB) affects 10% to 15% women of reproductive age group. A prospective observational study was performed to study the efficacy, rate of satisfaction and adverse effects of Transcervical resection of endometrium (TCRE) in the treatment of DUB in premenopausal women.
Methods: 30 patients with DUB attending the hospital underwent TCRE and patients were followed up after 6 week, 3 months, 6 months up to 1 year and there bleeding score was calculated. Their response to treatment, complications and satisfaction rate were studied.
Results: 43.3% of the women in this study were in the age group of 40-44 years. Post TCRE, 43.33% (n=13) had hypomenorrhea. 33.33% (n=10) had regular cycle, 13.33% (n=4) women had amenorrhea and 10% (n=3) had no response and underwent hysterectomy. 86.66% (n=26) women were satisfied with the treatment whereas 13.33% (n=4) were not satisfied. One patient had uterine perforation and serosal bowel injury due to extended cautery injury. Bleeding reduced considerably and a statistically significant (paired t-test, p-value <0.05) difference was observed in pre and post procedure (6 weeks, 3 months, 6 months and 1 year) bleeding scores.
Conclusions: Considering advantages like shorter operative time, uterine conservation and early mobility TCRE is a procedure of choice in patients in whom hysterectomy is either technically difficult or medically contraindicated or in those who are not suitable for long term medical management.

Keywords: Ablation, Dysfunctional uterine bleeding, Menorrhagia, Transcervical resection of endometrium

INTRODUCTION

Dysfunctional Uterine Bleeding constitutes a considerable problem for about 10% to 15% women of reproductive age group causing discomfort, anxiety and decreased quality of life.[1] Hysteroscopic surgery in the form of endometrial ablation is an advanced and less invasive technique, which is true alternative to hysterectomy, in the management of DUB especially in younger women. It enables patients to resume their routine daily activities within short period of time and is particularly useful in those not responding to medical management and those who are at high risk for undergoing major surgery. Transcervical resection of endometrium (T.C.R.E.) is a first generation hysteroscopic endometrial ablation technique that has gained popularity in gynaecological practice as an alternative to hysterectomy for patients presenting with dysfunctional uterine bleeding. The results so far suggest that T.C.R.E. is of comparable efficacy in producing hypomenorrhea in 80% to 90% and amenorrhoea in 25% to 50%.[2-5]

METHODS

The sample size for the study was 30 patients which were maximum number of cases of DUB in eighteen months who underwent TCRE. All patients with DUB attending Gynaecology outpatient Department at Sassoon General Hospital over the period of eighteen months from December 2013 to June 2015, who fulfilled the inclusion criteria were included in the study.

Inclusion criteria

- Failed medical management
- Medical management was contraindicated or had adverse effects of it. (previous history of deep venous thrombosis, thromboembolism, liver disease)
- Cases who are unfit for hysterectomy
- Cases not willing for hysterectomy.

Exclusion criteria

- Women who want to retain fertility
- Acute genital tract infections
- Adenomyosis
- Uterine size greater than 12 weeks/ cavity greater than 12 cm
- Abnormal endometrial and cervical cytology.

Preoperative preparation

Written and informed consent was obtained after explaining all other presently available treatment modalities. All women were told about the possibility of laparotomy and any other surgical procedure if clinically indicated at the time of surgery. All routine investigations were done including endometrial biopsy to rule out dysplasia or malignancy, Pap smear for cervical cytology, transvaginal sonography for endometrial thickness and size of uterus. Blood transfusion was given in patients in whom haemoglobin levels was less than 10 gm%. In this study routine preoperative preparation of the endometrium with hormones was not done. In all patient's surgery was performed immediately post menstrually when endometrial thickness is at its minimum. All procedures were performed under spinal anaesthesia.

Procedure

The bladder was emptied. Cervix was dilated up to Hegar 10 and then the resectoscope was introduced. The uterus was distended with the help of 1.5% glycine. The cuff of the pneumatic tourniquet was wrapped around the plastic bottle and pressure was raised to 100 mmHg to maintain a steady intrauterine pressure. A pure cutting current (100 watts) was used to resect the endometrium using a cutting loop electrode. The procedure was started at the fundus and then the endometrium from anterior, posterior and lateral walls was systematically shaved up to basal layer. Special care was taken in the lateral walls especially near the isthmus where deep cuts were avoided to prevent injury to the branches of uterine vessels. During the entire procedure patient was closely observed for evidence of fluid overload and abdominal distension. Most of the endometrial debris were removed at the end of surgery and sent for histopathological examination.

Follow up

Cases were reviewed in OPD after 6 weeks, 3 and 6 months and 1 year. All patients were asked to keep a menstrual record which included interval of cycle, days of bleeding, number of pads soaked and Bleeding score. Depending upon the parameters like return to normal domestic activity, continued bleeding, adverse effects like abdominal pain, per vaginal discharge patient's satisfaction was assessed. Blood loss was assessed by Pictorial Blood Loss Assessment Chart.

Statistical analysis

Statistical analysis was done using SPSS software version18. Paired T-test was used to compare mean bleeding score.

RESULTS

Majority of the women in this study were in the age group of 40-44 years (43.3%). 40% were in age group of 35-39 years and 16% in age group of 30-34 years (Figure 1).

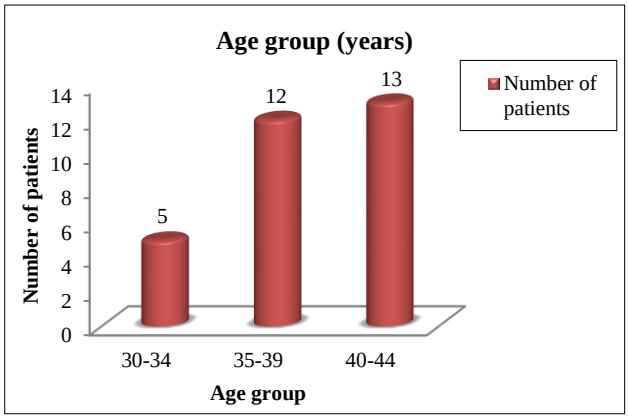

Figure 1: Age wise distribution of cases.

Table 1: Distribution of women with respect to parity.

Parity	No. of patients	(%)
1	1	3.3
2	13	43.3
3	15	50.0
4	1	3.4
Total	**30**	**100.0**

The 97.7% were multiparous and one (3.3%) was primiparous (Table 1). All women had their family

completed. Five women (16.67%) had history of taking Progesterone for about 6 months and Twenty-five (83.33%) took Mefenamic acid, Tranexamic acid as medical management (Table 2).

Table 2: Prior treatment taken.

	Treatment taken	No. of patients	Percentage (%)
Medical	Hormonal	5	16.67
	NSAID	25	83.33
	Total	**30**	**100%**

Six (20%) were previous LSCS. Two (6.67%) were known case of hypertension. Five women had BMI >30. Three (10%) women had anemia Haemoglobin <10 gm% (Table 3).

Table 3: Distribution of women with high risk factors.

Risk factor	No. of patients	Percentage (%)
Anemia	3	10.0
Hypertension	2	6.67
Obesity	5	16.67
Previous LSCS	6	20.0

All women underwent Diagnostic curettage before the procedure. After D and C 40% ie. Twelve had secretory endometrium and 60% ie. Eighteen women had proliferative endometrium (Table 4).

Table 4: Preoperative histopathological findings.

Histopathology	No. of patients	Percentage (%)
Proliferative	18	60.0
Secretory	12	40.0
Total	**30**	**100.0**

Twenty-nine -patients were discharge after 48 hours and one patient with uterine perforation was kept for 7 days (Table 5).

Table 5: Days of hospital stay.

Hospital stay (days)	No. of patients	(%)
<2 day	29	96.67
>2 day	01	3.33
Total	**30**	**100.0**

Table 6: Postoperative histopathological findings.

Post-operative histopathological findings	No. of patients	Percentage (%)
Proliferative	0	0
Secretory	27	90
Simple cystic hyperplasia	1	3.33
Adenomatous hyperplasia	2	6.66

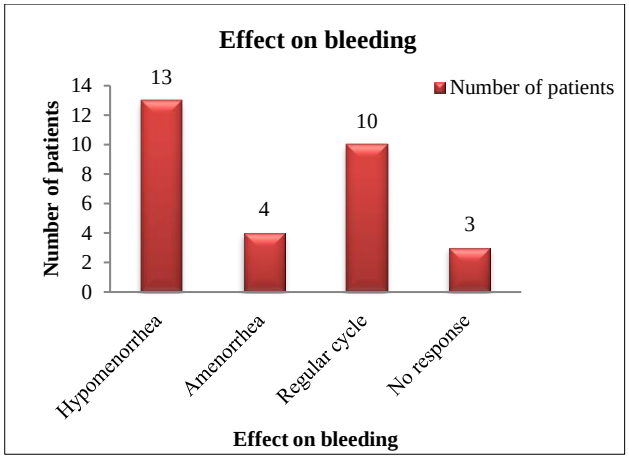

Figure 2: Effect on bleeding.

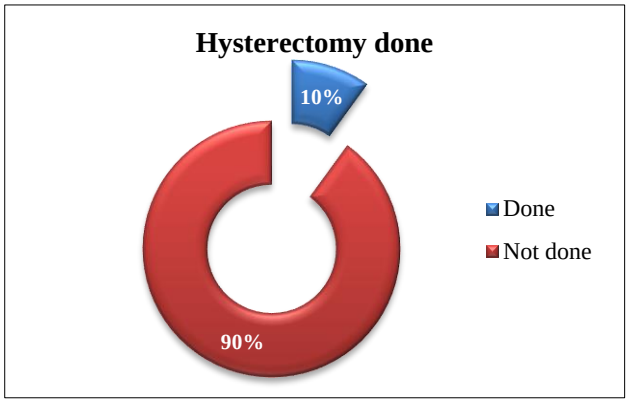

Figure 3: Hysterectomy required.

Twenty-seven women had secretory endometrium. One had simple cystic hyperplasia and two had adenomatous hyperplasia (Table 6). Post TCRE (43.33%) thirteen had hypomenorrhea. (33.33%) ten had regular cycle. Four (13.33%) women had amenorrhea and three (10%) had no response ie they underwent hysterectomy (Figure 2, 3). (86.66%) twenty-six women were satisfied with the treatment whereas (13.33%) four were not satisfied (Table 7).

Table 7: Patients satisfaction.

Patient satisfaction	No. of patients	Percentage (%)
Satisfied	26	86.66
Not satisfied	4	13.33
Total	**30**	**100**

One patient had uterine perforation and same patient had serosal bowel injury due to extended cautery injury (Table 8). No postoperative complications were noted. By using paired t-test p-value was <0.05 therefore there was significant difference between mean bleeding score before the procedure and after procedure at 6 weeks, 3 months, 6 months and 1 year (Table 9). Thus, bleeding reduced considerably after TCRE procedure (Figure 4).

Table 8: Intraoperative complications.

Intra operative complication	No. of patients	Percentage (%)
Uterine perforation	1	3.33
Bowel injury	1	3.33

Table 9: Comparison of mean bleeding score at before procedure, after procedure at 6 weeks, 3 months 6 months and 1 year.

	Number of patients	Bleeding score		P-value
		Mean	SD	
Before procedure	30	115.67	9.93	
6 weeks	30	45.6	45.6	<0.001
3 months	30	33.43	33.21	<0.001
6 months	30	29.57	31.85	<0.001
1 year	30	17.67	10.56	<0.001

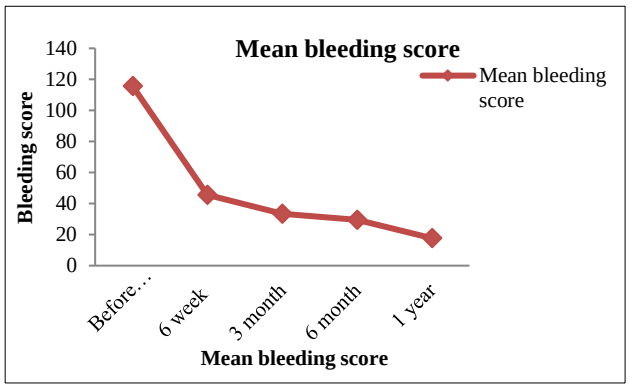

Figure 4: Mean bleeding score.

DISCUSSION

The concept of endometrial destruction by various methods is not new. However, the introduction of operating hysteroscope with technical advances in optics, illumination, electrocautery and availability of safe distension media has now allowed the endometrium to be destroyed under direct vision. Visual inspection assures the operator of completeness of the intervention. The objective of the intervention is to cause thermal damage to the entire endometrium deep enough to destroy the basal layer. Comparison of intraoperative complications in various studies showed uterine perforation was observed in 1% cases in Maltau JM et al, and 3.2% in Pooley AS et al, whereas fluid overload was seen in 0.8% cases in Maltau JM et al and 0.9% in Pooley AS et al, study. Postoperative complications like pyrexia was in 0.8% and secondary haemorrhage 2% in Agbolla AJ et al, study and haematometra in 1.7% in Chandel NP et al, study.[2,4,6,8]

Advantages of TCRE over other second-generation ablation techniques include

- Tissue can be obtained for histopathological diagnosis
- Direct visualization of uterine cavity is possible
- Cochrane systemic review 2009 review revealed that equipment failure, nausea, vomiting and uterine cramping were more common with second generation devices
- Microwave and thermal ablation are contraindicated in previous classical scar or previous surgery or trauma leading to uterine wall thickness of less than 8 mm.[9]

Table 10: Comparison of intraoperative complications of various studies.

Complications	Maltau JM et al[6]	Pooley AS et al[7]	Agbolla AJ et al[2]	Engelson B et al[3]	Chandel NP et al[8]	Present study
Bowel injury	-	-	-	-	-	3.33%
Uterine perforation	1%	3.2%	-	8%	-	3.33%
Fluid overload	0.8%	0.9%	-	-	1.1%	-
Haemorrhage	-	-	3.5%	-	-	-

Table 11: Comparison of postoperative complications of various studies.

Complications	Maltau JM et al[6]	Pooley AS et al[7]	Agbolla AJ et al[2]	Engelson B et al[3]	Chandel NP et al[8]	Present study
Pyrexia	-	-	O.8%	-	-	-
Pelvic infection	-	-	-	0.6%	-	-
Haematometra	-	-	-	-	1.7%	-
Secondary haemorrhage	-	-	2%	--		-

After comparing all available treatment modalities, transcervical resection of endometrium has been proved to be, feasible, cost effective with shorter duration of hospital stay and faster recovery for dysfunctional uterine bleeding as compared to hysterectomy.[10] Sculpher MJ et al, in his study has found that the total mean cost of

surgically treating menorrhagia using endometrial resection is significantly lower than that using abdominal hysterectomy. The mean total cost of resection was 53% that of hysterectomy.[11]

CONCLUSION

Considering advantages like shorter operative time, uterine conservation and early mobility TCRE is a procedure of choice in patients in whom hysterectomy is either technically difficult or medically contraindicated or in those who are not suitable for long term medical management.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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