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Office Hysteroscopy in Recurrent Abortion

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ABSTRACT

Background: Uterine anomalies are thought to be one of the reasons of recurrent miscarriages, and have been found in as many as 10% to 15% of individuals who have had several miscarriages. Before submitting the patients to another pregnancy, it is critical to rule out any intrauterine abnormality. In situations of recurrent pregnancy loss, office hysteroscopy has shown to be a highly useful technique in diagnosing and treating anatomical reasons.

Aim of the work: To assess the role of office hysteroscopy (OH) in the diagnosis and care of patients with recurrent pregnancy loss, and to propose OH as a regular procedure in such circumstances.

Patients and methods: A retrospective research was conducted on 80 patients with recurrent abortion attempt to the outpatient clinic of obstetrics and gynecology at El-Hussein University Hospital in Cairo and Dar Ismael Hospital in Alexandria.

Results: the study showed that 42 cases was normal (52.5%), congenital was found in 14 cases (17.5%): Arcuate uterus 7(8.8%), septate uterus 2(2.5%), bicornuate uterus 3(3.8%) & unicornuate uterus 2(2.5%). And acquired was found in 24 cases (30.0%): Endometrial adhesions 2(2.5%), Fibroid 6 (7.5%) & endometrial polyps 16(20%).

Conclusion: we concluded that office hysteroscopy playing an important role in diagnosis of uterine abnormalities that cause recurrent abortion and the procedure is cost effective.

Keywords: *Office Hysteroscopy; Abortion; Miscarriage.*

INTRODUCTION

Three successive, unexplained pregnancy terminations before the conclusion of 20 weeks of gestation or the ejection of a baby weighing less than 500 g have long been described as recurrent pregnancy loss. There is a movement to broaden these criteria to cover women who have had just two miscarriages.[1]

Uterine anomalies have been identified as one of the reasons of recurrent miscarriages, and are predicted to be found in 10% to 15% of individuals with recurrent miscarriages. Before submitting the patient to another pregnancy at risk, it's critical to rule out any intrauterine abnormality.[2]

Uterine anomalies have been identified as one of the reasons of recurrent miscarriages, and are predicted to be found in 10% to 15% of individuals with recurrent miscarriages. Before submitting the patient to another pregnancy at risk, it's critical to rule out any intrauterine abnormality.[3]

In individuals with recurrent miscarriages, the prevalence of congenital or acquired structural abnormalities is significant, ranging from 6.3 percent to 67 percent depending on the kind of research and the study group.[4]

While a hysterosalpingogram (HSG) has traditionally been used to check for anomalies in the uterine cavity, sonohysterography might potentially be utilized to get additional information about endometrial lesions, however, the gold standard for examining the uterine cavity, hysteroscopy, may be done consistently and safely as a minimally invasive technique in the office.[5]

The purpose of hysteroscopy is to identify any intrauterine alterations that may interfere with the conceptus's implantation, growth, or both. Hysteroscopy is still an invasive operation, and its relevance in the regular therapy of recurrent miscarriages has to be assessed. Investigating parental genetic diseases, thrombophilia, and maternal hormonal disruption may be further diagnostics for recurrent pregnancy loss.[6]

Because of the smaller optical diameters, hysteroscopy may now be conducted as an outpatient

procedure with no anesthetics, minimum pain, and high patient acceptability.[7]

The purpose of this research was to assess the role of office hysteroscopy (OH) in the diagnosis and treatment of patients with recurrent pregnancy loss, with the goal of recommending OH as a standard operation in such circumstances or not.

PATIENTS AND METHODS

A retrospective research was conducted on 80 patients with recurrent abortion attempt to the outpatient clinic of obstetrics and gynecology at El-Hussein University Hospital in Cairo and Dar Ismaeil Hospital in Alexandria, period from March 2021 to February 2022.

Sample size justification:

This study is based on McLaughlin et al.[8] research. The sample size was calculated using Epi Info STATCALC using the following assumptions: With a power of 80% and a margin of error of 5%, the odds ratio estimated = 1.22 with a 95 percent two-sided confidence level. The Epi Info output yielded an 80-case sample size.

Inclusion criteria: Age group between 21-37yrs, at least two consecutive pregnancy loss, miscarriages occurred at gestation age of less than 20 weeks, and normal hormonal profile.

Exclusion criteria: Severe pelvic inflammatory disease, severe medical morbidities or metabolic diseases, and other causes of recurrent abortion except uterine anomalies

Ethical considerations: Study procedure was reviewed an approved by Al-Azhar university research ethics committee. Study objectives and expected outcomes were explained to study participants. Participation of the study was voluntary, and confidentiality of data collected was ensured.

All patients were subjected to the following:

History: Personal and marital history, menstrual history, obstetric history, history of other previous investigations, medical history and surgical history,

Clinical Examination: (1) Abdominal examination: For pelvi-abdominal masses. (2) Gynecological examination: It was done to determine any abnormalities in the genital tract or presence of infection. Bimanual examination: to detect Size and location of the uterus, Adnexial masses, any tenderness or Vaginal / cervical abnormalities.

Speculum examination: For inspection of the cervix and vagina for any infection or abnormality.

Investigations:

TVUS; A 2-D transvaginal ultrasound was performed in all cases with an empty bladder to determine the size, contour and position of the uterus, the myometrial and endometrial morphology in longitudinal and transverse planes.

Other investigations:

Laboratory investigations of recurrent pregnancy loss:

Testing for antiphospholipid antibodies (APA): Lupus anticoagulat (LAC) and anticardiolipin antibodies (aCL) to exclude the antiphospholipid syndrome (APS)

Testing for hereditary thrombophilia: Factor V Leiden, Methylenetetrahydrofolate reductase (MTHFR), activated protein C resistance, Prothrombin G20210A and protein S deficiency.

Testing for endocrinolgical causes: Thyroid function tests, anti-thyroid antibodies, and insulin resistance test, serum androgen, serum prolactin and serum vitamin D.

Laboratory investigations for preparation of operation: Complete blood count, ABO blood grouping & RH, coagulation profile (BT - CT - PT - PTT - INR), Liver function test, Renal fucntion test, Random blood sugar, virology (HBV, HCV & HIV)

Study instruments: Office hysteroscope (BETTOCCHI hysteroscope with semirigid instruments), BETOCCHI Recommended set, Size 5 mm (based on a 2.9 mm telescope).

Statistical analysis:

SPSS (Statistical Package for Social Sciences) version 22 for Windows® was used to code, process, and analyze the obtained data (IBM SPSS Inc, Chicago, IL, USA). The Shapiro Walk test was used to determine whether the data had a normally distributed. Frequencies and relative percentages were used to depict qualitative data. To compute the difference between two or more sets of qualitative variables, use the Chi square test ($\chi 2$). The mean ± standard deviation (SD) was used to convey quantitative data (Standard deviation). To compare two independent groups of normally distributed variables, the independent samples t-test was utilized (parametric data). P values of <0.05 were regarded substantially.

RESULTS

	Frequency	Percent
Age		
<25	25	31.25
25-30	30	37.5
30+	25	31.25
Range	21.0-35.0	
Mean ± SD	27.75±4.601	

Duration of marriage		
2-3	23	28.75
4-6	35	43.75
6+	22	27.5
Range	2.00-8.00	
Mean ± SD	5.00 ± 2.04	
Total	80	100.0

Table 1: Distribution of the analyzed patients regarding the age and duration of marriage.

Table (1) shows distribution of the analyzed patients according the age and duration of marriage. Age ranged from 21-35 with mean value 27.75±4.601. Duration of marriage ranged from 2-8 with mean value 5±2.04.

No. of pregnancy loss	Frequency	Percent
2	19	23.8
3	17	21.3
4	28	35.0
5	16	20.0
Range	2.00-5.00	
Mean ± SD	3.5125±1.06728	
Total	80	100.0

Table 2: Distribution of the analyzed patients according the number of pregnancy loss.

Table (2) shows distribution of the studied patients according the number of pregnancy loss. Number of pregnancy loss 4 was higher with 28(35%), it ranged from 2-5 with mean value 3.5125±1.06728.

	Frequency	Percent
Menstrual regularity	69	86.3
Regular	11	13.8
Irregular		
Amount of menstrual flow		
Normal	56	70.0
Low	14	17.5
High	10	12.5
Duration of menstrual flow (days)	20	25
3	26	32.5
4	18	22.5
5	3	3.75
6	13	16.25
7		
Range	3.00-7.00	
Mean + SD	4.237+1.808	
Total	80	100.0

Table 3: Distribution of the analyzed patients according the menstrual regularity, amount of menstrual flow and duration of menstrual flow (days).

Regular menstrual regularity was higher with 69(86.3%), while irregular menstrual regularity was 11(13.8%). Normal amount of menstrual flow was higher with 56(70%) followed by low with 14(17.5%) and higher with 10(12.5%). Duration of menstrual flow 4 days was higher with 26(32.5%) followed by 3 days with 20(25%), 5 days with 18(22.5%), 7 days with 13(16.25%) and 6 days was 3(3.75%). Duration of menstrual flow ranged from 3-7 with mean value 4.237±1.808 (Table 3).

	Frequency	Percent
Preterm deliveries:	40	50.0
0	31	38.8
1	9	11.3
2		
Mode of delivery	40	50.0
No	10	12.5
NVD	30	37.5
CS		
Total	80	100.0

Table 4: Distribution of the analyzed patients according number of previous preterm deliveries and mode of delivery.

Patients who did not have previous preterm deliveries were 40 (50.0%), patients who had one previous preterm delivery were 31 (38.8%) and patients who had two previous preterm deliveries were 9 (11.3%). Number delivery was 50% of the patients, while CS delivery was 30 cases (37.5%) and NV delivery was 10 (12.5%) (Table 4).

Office Hysteroscope	Frequency	Percent
Normal	42	52.5
Congenital	14	17.5
Arcuate uterus	7	8.8
Septate uterus	2	2.5
Bicornuate uterus	3	3.8
Unicornuate uterus	2	2.5
Acquired	24	30.0
Endometrial adhesion	2	2.5
Fibroid	6	7.5
Endometrial polyps	16	20.0
Total	80	100.0

Table 5: Distribution of the analyzed patients according the office Hysteroscopy results.

table (5) shows distribution of the analyzed patients according the office Hysteroscopy results. Normal was 42 (52.5%). Congenital was 14 (17.5%): Arcuate ut. 7(8.8%), septate ut. 2(2.5%), Bicornuate ut. 3(3.8%) & unicornuate ut. 2(2.5%). Acquired were 24 (30.0%): Endometrial Adhesions 2(2.5%), Fibroid 6(7.5%) & endometrial polyps 16(20%).

	Number	Percent
Operative hysteroscopy:		
Removal of small Endometrial polyp	16	20.0
Removal of small submucus myoma	18	22.5
Removal of adhesions	2	2.5
Small septum dissection	2	2.5
incidence of hysteroscope complication:		
Injury of Cx	3	3.75
Perforation of uterus	1	1.25
Bleeding	4	5.0
Volume overload	2	2.5
Venous air embolism	0	0.0
Abdominal pain	5	6.25
Incidence of anesthesia complication:		
Nausea	12	15.0
Vomiting	15	18.75
Itching	6	7.5
Headache	7	8.75

Table 6: Distribution of the analyzed group according to operative hysteroscopy, incidence of hysteroscope complication and incidence of anesthesia complication.

The removal of small polyp was 16(20%), removal of small submucus myoma was 18(22.5%), removal of adhesions was 2(2.5%) and septum dissection was 2(2.5%). The injury of Cervix was 3(3.75%), perforation of uterus was 1(1.25%), bleeding was 4(5%), volume overload was 2 (2.5%), venous air embolism was 0(0.0%) and abdominal pain was 5(6.25%). The nausea was 12(15%), vomiting was 15(18.75%), itching was 6(7.5%) and headache was 7(8.75%) (Table 6).

DISCUSSION

The results of our study showed that the median age of the analyzed group was 27.7±4.60 years and the median duration of marriage was 5.0±2.04 years, the mean number of pregnancy loss was 3.51±1.06. The hormonal assay showed that the all patients within the normal range.

The hysteroscope showed that 42 cases were normal (52.5%), congenital was found in 14 cases (17.5%): Arcuate uterus 7(8.8%), septate uterus 2(2.5%), Bicornuate uterus 3(3.8%) & unicornuate uterus 2(2.5%). And acquired was found in 24 cases (30.0%): Endometrial Adhesions 2(2.5%), Fibroid 6(7.5%) & endometrial polyps 16(20%).

In agreement with our results, Farag et al.[9], study the average age of the patients was 27.43± 6.58 years, with a range of 18 to 40 years in the office hysteroscopy vs three-dimensional ultrasonography in evaluation of uterine cavity in recurrent pregnancy loss study. 20 percent of the cases were under the age of 20, 51 percent

were between the ages of 20 and 30, and 29 percent were between the ages of 30 and 40.

Another study handling the same perspective also included a sum of 100 cases with a median age of 28 years [range, 20 – 39 years].[10]

Moiety et al.[11] study the recurrent miscarriage: Hysteroscopy-assisted Management, they study two groups of patients, they found that the frequency of uterine lesions was 42.1% (22.1% acquired, and 20% congenital) in individuals with two recurrent losses, and 43.8% (31.4% acquired, and 12.4% congenital) in those with three or more repeated miscarriages.

Donnez and Jadoul[12] showed that those uterine malformations have an impact on the pregnancy's outcome. Hysteroscopy in the office enables for the comprehensive and accurate detection of intrauterine abnormalities that might threaten the pregnancy's continuance. In this study, we found 11 instances of intrauterine adhesions utilizing office hysteroscopy. All of those patients were treated with hysteroscopicadhesiolysis, which improved the chances of a successful pregnancy.

Valli et al.[13] also stated that hysteroscopy's function in lysing intrauterine adhesions would enhance pregnancy outcomes in repeated miscarriages patients. In agreement, Bouet et al.[14] demonstrated that office hysteroscopy is an effective technique in the care of women who have repeated pregnancy loss, especially when combined with an endometrial biopsy to diagnosis chronic endometritis.

Dendrinos et al.[15] also stated that Hysteroscopy outperforms HSG in detecting intrauterine abnormalities, making it a trustworthy uterine cavity diagnostic method with excellent specificity and sensitivity.

Elmandooh[16], study The Validity of Hysteroscopy in Detecting Uterine Cavity Abnormalities in Women with Repeated Pregnancy Loss found that 117 of the women (58.5%) had normal hysterscopic outcomes, whereas 83 of the patients (41.5%) had abnormal hysterscopic outcomes.

Septate uterus was the most prevalent uterine defect in the present research, affecting 14% of the patients and verified by HSG. This finding is comparable to that of Weiss et al.[17], who discovered septate uterus in 13% of repeat abortion patients.

Bakas et al.[18] performed hysteroscopy on 217 women prior to IVF and discovered 69 (31.8%) had intrauterine lesions. Dendrin et al. (2008) performed another investigation on 48 individuals, finding that 52 percent had normal hysterscopic results and 48 percent had abnormal results.

The reported incidence of anomalies in women who have had several miscarriages ranges from 6.3 percent to 67 percent, with the majority of studies indicating more than 25% aberrations. This disparity in the rate of abnormalities among women who have had recurrent miscarriages is due to variations in research design and the kinds of abnormalities found.[19]

Elsokkary et al., (2017), study They discovered that 83 of the patients (41.5%) had normal hysteroscopic results and 117 of the patients (58.5%) had abnormal hysteroscopic results in the Assessment of Hysteroscopic Role in Management of Women with Recurrent Pregnancy Loss.[20]

These findings are similar to those of Ventolini et al. [23] individuals with recurrent pregnancy losses received diagnostic hysteroscopy in a prospective cohort study, and 60.9 percent had normal hysterscopic findings and 39.1% had abnormal hysterscopic findings. Also, according to Weiss et al.[15], 70% of patients had normal hysteroscopic findings and 30% had abnormal hysteroscopic findings. Bakas et al.[22] conducted research in which he investigated 217 women through hysteroscopy prior to IVF and discovered 69 (31.8) had intrauterine lesions.

Elbareg et al.[23] looked at 48 individuals and found that 52 percent had normal hysterscopic results and 48 percent had abnormal ones. The research involved 324 women who had had three or more miscarriages in a row. A diagnostic hysteroscopy was performed on all of the women. He discovered that a greater frequency of congenital anatomical anomalies was detected after two consecutive miscarriages. Following two miscarriages, a diagnostic hysteroscopy should be performed. (Dural et al., 2015)

Weiss et al.[17] study that After two losses, hysteroscopy may be justifiable, according to the findings of this research, which revealed that 32 (19%) of the 165 women had congenital abnormalities and 18 (11%) had acquired anomalies. A congenital and acquired abnormality coexisted in one case. On hysteroscopy, 116 (70 percent) of the women had no abnormal results. Patients who had two miscarriages had the same incidence or kind of defects as those who had three or more losses.[24]

CONCLUSION

We concluded that office hysteroscopy playing an important role in diagnosis of uterine abnormalities that cause recurrent abortion and the procedure is cost effective.

Thus we recommend the use of office hysteroscopy in diagnosing cases with recurrent miscarriages.

Conflict of interest : none

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