Factors Influencing the Need for Evacuation of Retained Products of Conception in Missed Miscarriage

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Background: Surgical evacuation of the uterus is one of the treatment options for a missed miscarriage. Usually, the decision to perform surgery is mostly based on clinical grounds.

Objective: To evaluate the patient's clinical presentation on Evacuation of Retained Products of Conception (ERPC).

Design: A Retrospective Study.

Setting: Gynecology and Obstetrics Department, Bahrain Defense Force Hospital, Bahrain.

Method: All missed miscarriage cases from 1 December 2013 to 21 December 2014 were included in the study. The management of missed miscarriage was divided into group A and group B, based on the need for ERPC. Factors such as history of previous miscarriage ERPC, pain/bleeding, and cervical opening were evaluated. Data were analyzed using StatsDirect. P-value of < 0.05 was considered statistically significant.

Result: One thousand five hundred patients with confirmed miscarriage were included in the study; 91 (6%) were missed miscarriage and 49 (54%) of those required ERPC. The study groups had similar personal characteristics. Patients who had a previous history of miscarriage were less likely to have ERPC. Having a history of ERPC did not increase the risk of repeat procedure. Patients who presented with abdominal pain and bleeding were significantly more likely to have ERPC. Cervical assessment on admission had no role in the decision to perform surgery.

Conclusion: ERPC accounted for more than 50% of our management of missed miscarriages. We found a higher rate of surgical management in patients who presented with pain and bleeding.

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Miscarriage is the most common adverse outcome in fetomaternal medicine, occurring in 10%-20% of the pregnancies[1]. Most miscarriages are caused by chromosomal abnormalities and the risk increases with advanced maternal age[2].

Miscarriage is defined as the loss of a pregnancy prior to viability. The legal limit of viability in the UK is gestation age of 23 weeks and six days; if a miscarriage occurs before 12 weeks, it is identified as the first trimester and accounts for the majority of miscarriages. Second-trimester miscarriage accounts for nearly 4% of all miscarriages. There are several types of miscarriages: threatened miscarriage, incomplete miscarriage, complete miscarriage, missed/early fetal demise, recurrent miscarriage, biochemical pregnancy loss and pregnancy of unknown viability[3].

Missed miscarriage or early fetal demise accounts for approximately 15%-20% of all miscarriages[4]. The diagnosis of early demise is based either on the absence of an embryo within the gestational sac or the absence of cardiac activity in a visible embryo. The Royal College of Obstetricians and Gynecologists guidelines define missed miscarriage to be in relation to the Crown Rump Length (CRL). If CRL is < 7.0 mm and fetal heartbeat is not visualized, a repeat scan after one week is required before confirming the missed miscarriage. If CRL is ³ 7.0 mm and fetal pulsation is absent, a second opinion at the same visit or repeat scan within less than seven days is appropriate as failed pregnancy is more likely[5]. The criteria for diagnosis are observed to eliminate false positive and false negative diagnosis[6].

The management of miscarriage could be an expectant, medical or surgical option, and it is usually influenced by the local protocol of the hospital[7]. The traditional treatment is dilatation and curettage for spontaneous miscarriage; the other option is manual vacuum aspiration. Prompt surgical evacuation of the uterus has been recommended in the past to avoid the risk of infection and prevent coagulation disorders as a consequence of retained products of conception[3].

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Prompt surgical evacuation of the uterus is the treatment of choice if the patient is unstable due to severe bleeding or has evidence of a septic miscarriage. Patient choice is another reason to proceed with surgical evacuation[8]. Margreet et al randomized 122 cases into a surgical option and 305 cases into expectant management and found no difference in the infection rate between the two groups[9].

A study found major variations in practice between different hospitals; surgical curettage was found to be the first choice of treatment in 49% of patients despite the availability of non-invasive options[1].

Our literature search failed to find a study addressing the influence of clinical presentation on the decision of surgical management. Patient choice is a crucial element in that process and needs to be taken into consideration. The decision for surgical management of missed miscarriage is typically based on clinical grounds.

The aim of this study is to evaluate the patient's clinical presentation on ERPC.

METHOD

All missed miscarriage cases from 1 December 2013 to 21 December 2014 were included in the study. Patients' age, weight, gestational age, parity, previous miscarriage/ERPC, hours of admission (24-48 hours), cervical findings (external cervical os opened or closed) and pain/bleeding were documented. The management of missed miscarriage was divided into group A and group B, based on the need for ERPC. Factors such as the history of previous miscarriage/ERPC, pain/bleeding, and cervical opening were studied to evaluate their effects on the decision of surgical management.

Data were analyzed using StatDirect. Unpaired T-test was used to compare means in the two groups, Mann-Whitney U-test was used to compare medians, Chi-square test was used in crosstabs and Fisher-Freeman-Halton Exact Test was used in crosstabs. P-value of < 0.05 was considered statistically significant.

RESULT

During the study period, 1,500 patients presented with a confirmed miscarriage. Ninety-one (6%) were missed miscarriages; forty-nine (54%) of those required ERPC.

Patients' characteristics in the two groups were similar in age, weight, parity, hours of admission and gestational age, see table 1.

Table 1: Patients' Characteristics

Factors	Group A (ERPC Not Required)	Group B (ERPC Required)	P-value
Age (years)	32 ± 7.6	31.1 ± 7.2	P-value 0.54*
Weight (kg)	78.4 ± 13	75.2 ± 7.8	P-value 0.2*
Gestational age (weeks)	11 ± 5.6	11± 3.9	P-value 0.69**
Parity	2 ± 2.6	3 ± 2.2	P-value 0.49**
Hours of admission (hours)	24 ± 9.2	24 ± 13.2	P-value 0.52**

*Unpaired T-test
**Mann- Whitney U test

Patients who had a previous history of miscarriage were less likely to have ERPC, P-value 0.3. History of previous ERPC did not affect the risk of repeat ERPC, see table 2.

Table 2: History of Previous Miscarriage

	Group A (ERPC Not Required) (41)	Group B (ERPC Required) (50)	Chi-square Test
Previous history of miscarriage	21 (51%)	20 (40%)	0.3**
Previous history of ERPC	5 (12%)	4 (8%)	0.5**

Patients who presented with abdominal pain and bleeding were significantly more likely to have ERPC compared to patients who presented without symptoms, P-value 0.0003 and 0.0012, respectively. Cervical assessment on admission had no role in the decision to perform surgery, P-value 0.69, see table 3.

Table 3: Presenting Symptoms and Signs

	Group A (ERPC Not Required) (41)	Group B (ERPC Required) (50)	P-value
Abdominal pain	33 (80%)	44 (88%)	0.0003**
Bleeding	29 (71%)	46 (92%)	0.012**
Patients with open cervix	4 (10%)	3 (6%)	0.6967***

** Chi-square test
***Fisher-Freeman-Halton Exact Test

DISCUSSION

A missed miscarriage is a traumatic experience for the patient. Counseling of patients with such scenario is critical as they are less likely to make the right decision about the next step. In a study comparing the medical and surgical management of miscarriage, no clear indications for routine surgical management were found and patient's choice needed to be considered[10]. Another study reported 81.4% success rate[11].

A study found an average resolution time of 12.8 days; 81% of patients were multiparous, 42% had a complete miscarriage with no need for further interventions, 43% patients had incomplete miscarriage and had surgery, 7% of them had to undergo cervical dilatation; the complication rate of surgery was 16%, only 1% major complication was encountered[12]. Another study concluded that the incidence of gynecological infection after surgical, expectant and medical management of the first trimester is low (2%-3%) and there is no difference in infection risk between the study groups[13].

Odeh et al found no effect of patient parity on the success of medical treatment[14]. Similarly, our data did not reveal any effect of parity on the possibility of ERPC.

Mentula et al found that the rate of surgical evacuation was 30.8%, which is far lower than our data of 55%[15]. They found

that surgical evacuation was higher in the patients with previous history of ERPC. In our study, no effect of such history on the chance of performing ERPC was found. Mentula et al found a higher rate in patients above 24 years. In our study, the data showed no difference in the age between the two groups[15].

Although the percentage of ERPC accounted for more than 50% of our management of missed miscarriage, we noted a clear relation between presenting symptoms and the need for ERPC. Approximately two-thirds of the patients who presented with pain had ERPC. Bleeding was also a strong indicator; 61% of patients who presented with bleeding had ERPC. We found no relationship between the cervical opening and the need for ERPC. Our findings need to be interpreted with caution because of the retrospective analysis.

CONCLUSION

ERPC accounted for more than 50% of our management of missed miscarriage. We recorded a higher rate of surgical management in patients who presented with pain and bleeding.

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