Original Article

Intrauterine adhesions in the University of Uyo Teaching Hospital, Uyo, South-South, Nigeria: A ten year review

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ABSTRACT

Background: Asherman's syndrome is a clinical entity that can cause menstrual abnormalities and infertility.

Objectives: This study was done to determine the risk factors, and management outcome of intrauterine adhesions in our hospital.

Subjects and Methods: We carried out a retrospective study of the patients who were treated for intrauterine adhesions at the University of Uyo Teaching Hospital over a 10 years period-from January 1st 2006 to December 2016.

Results: During the study period, a total of 1977 gynecological surgeries were performed of which 83 were for intrauterine adhesions, giving a rate of 4.2%. However, only 52 folders were retrieved, giving a retrieval rate of 62.5%. Analyses, using ratios and percentages, was based on these. Most patients belonged to the 30-34 age group (28.9%) followed by the 20-24 age group (25.0%). The majority of the patients were nulliparous (58.9%), married (65.4%) and had a tertiary education (50.0%). Dilatation and curettage for induced abortion (42.3%), open myomectomy (26.9%), and caesarean section (19.2%) were the common risk factors. Amenorrhoea (65.4%), and hypomenorrhoea (30.8%) were the commonest modes of presentation. All the patients were managed by blind adhesiolysis, done overwhelmingly by the resident doctors, under anaesthesia with a significant percentage (65.3%) showing that there is no change in menstrual condition.

Conclusion: Ashermans syndrome is a relatively common condition, and it is necessary to train doctors in the use of, and acquire, a hysteroscope, for the proper management of this condition. Meanwhile, more senior personnel should be involved in the blind adhesiolysis, and Foley catheter that appears superior as a uterine splint to the intrauterine contraceptive device.

Key words: Adhesiolysis, intrauterine adhesions; Uyo.

Introduction

Intrauterine adhesion (IUA), also known as uterine synechiae or Asherman's syndrome, describes a condition caused by trauma and possibly infection to the endometrial lining of the uterus leading to adhesion formation which partially or completely obliterates the uterine cavity.[1] It presents clinically with menstrual abnormalities including secondary amenorrhoea, hypomenorrhoea, and oligomenorrhoea.[2] Menstruation can, however, be normal and a high index of suspicion is required to make a diagnosis.

Other modes of presentation include recurrent abortions, lower abdominal pain, as well as infertility.[1,3] A study from Nigeria reports IUAs to be associated with 20.0% of patients consulting for sub-fertility.[4] Apart from infertility, high rates of miscarriages, poor implantation following *in vitro* fertilization, and abnormal placentation have also been associated with IUAs.[5]

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The incidence of this condition is reported to be highest in Israel and Greece but this is not related to any geographical or genetic factor.[6] The incidence is, however, significantly related to the number of induced abortions performed and the high incidence of genital tuberculosis in some countries, as well as the different criteria used to detect IUAs.[7] In Nigeria, IUA made up 4.4 percent of all gynaecological cases seen in Lagos and 3.7 percent of cases of infertility in Benin.[8,9]

Trauma to the basal layer of the endometrium of a recently pregnant uterus commonly results in intrauterine adhesions.[8] This may happen during curettage after abortions, or in the immediate postpartum period. Universally, the incidence of IUAs has been attributed to the traditional method of dilatation and curettage used for the evacuation of the uterus.[10] A study in Nigeria showed that 23.0% of cases of IUA to be associated with induced abortion.[11] The incidence increases with the number of abortions performed. After a termination of pregnancy the risk is 16.0%; and after two or more terminations, the risk doubles to 32.0%.[12] Intrauterine adhesions may also follow manual removal of a retained placenta, as well as caesarean section. Other implicated factors include myomectomy, pelvic inflammatory disease, genital tuberculosis, and schistosomiasis.[13-15]

Direct visualization of the uterine cavity via hysteroscopy is the most reliable method of diagnosis.[16] However, other diagnostic methods include hysterosalpingography (HSG), transvaginal ultrasonography, sonohysterography, and magnetic resonance imaging.[17] The aim of this treatment is to restore the size and shape of the uterus, return the endometrium to normal function and improve the chances of pregnancy in those desirous of conception.[18]

Since the establishment of the University of Uyo Teaching Hospital, this study is the first of its kind in this center. It aims to determine the incidence of this condition and highlight its risk factors and management outcome.

Materials and Methods

This retrospective study was carried out in the University of Uyo Teaching Hospital, Uyo, over a 10 years period from January 1st 2006 to December 31st 2016. During the period of study, 83 patients were managed for intrauterine adhesions. The registration numbers of all these patients were obtained from the gynaecological theatre register. However, only 52 case folders were available for analysis from the medical records department of the hospital. Data extracted from these retrieved folders included the age, party, marital, and educational status of the patients. The clinical presentation of the patients was also obtained, as well as the risk factors and the mode of management. These were analyzed using ratios and percentages.

Results

During the study period, 83 patients were managed for intrauterine adhesions while 1977 gynaecological surgeries were performed, giving an incidence of 4.2%. However, 52 case files were available, giving a retrieval rate of 62.6%.

Table 1, shows the socio-demographic data of the patients. Most of the patients were in the 30-34 age group (28.9%), closely followed by the 20-24 age group (25.0%). Most of the patients were married (65.4%), and had at least tertiary level of education (50.0%). The majority of the patients were of low parity, 0-1 (88.5%).

Table 2, shows that induced abortions constituted the greatest risk factor for intrauterine adhesions (42.3%), followed by myomectomy (26.9%). Caesarean section was responsible for 19.2% of cases. All the patients who developed IUA after caesarean section had unsupervised prolonged labor in unorthodox facilities complicated by chorioamnionitis. Four cases (7.7%) were due to puerperal infection and 2 (3.9%) were unspecified.

Majority of the patients presented with amenorrhoea (65.4%), while two patients presented with the complaints of infertility as well as hypomenorrhoea (3.8%). About 34 (65.3%) patients had no change in their clinical presentation, while (19.2%) had their menstrual cycle corrected. In two patients (3.9%). there was a slight improvement in their menstrual flow, and

Table 1: Socio-demographic Characteristics of Patients *n*=52

Age (years)	Number	Percent (%)
≤19	4	7.7
20-24	13	25.0
25-29	12	23.1
30-34	15	28.9
35-39	6	11.5
>40	2	3.8
Marital status		
Married	34	65.4
Single	16	30.8
Divorced	2	3.8
Educational Status		
Primary	6	11.5
Secondary	20	38.5
Tertiary	26	50.0
Parity		
0	28	53.9
1	18	34.6
2-4	6	11.5

Table 2: Risk factors/presentation outcome *n*=52

Antecedent	Number	Percent (%)
Risk factors for uterine adhesions		
Abortion	22	42.3
Myomectomy	14	26.9
Caesarean section	10	19.2
Puerperal Infection	4	7.7
Unspecified	2	3.9
Antecedent	**Number**	**Percent (%)**
Clinical presentation		
Amenorrhoea	34	65.4
hypomenorrhoea	16	30.8
Infertility/hypomenorrhoea	2	3.8
Outcome	**Number**	**Percent (%)**
Treatment outcome		
No change in condition	34	65.3
Correction of menses	10	19.2
Lost to follow up	4	7.7
Slight improvement of condition	2	3.9
Hypomenorrhoea	2	3.9

four patients were lost to follow up. The resident doctors performed 48 (92.3%) of the procedure while consultants performed four (7.7%). There were three cases of missing IUCD, as well as a case of translocation of the IUCD into the bladder. Of the ten patients whose menses were corrected, the Foley catheter was used for seven of them.

A diagnosis of IUA in all cases was made using HSG. All the patients had blind adhesiolysis with a curette, followed immediately by the insertion of the intrauterine contraceptive device (Cu-T) or paediatric Foley catheter (size 8). An oral estrogen/progestogen combination was given for 3 cycles for endometrial regeneration. Blind adhesiolysis and insertion of uterine splint was done almost exclusively by resident doctors.

Discussion

The incidence of IUA in this study was 4.2%. This figure is higher than that reported from Ilorin (1.3%), Abuja (1.73%), and Nigeria[8,19] This maybe a reflection of the high rate of induced abortions in our society as well as the low contraceptive prevalence.[20] However, the actual incidence in our environment maybe higher than this because some patients have normal menses despite the presence of intrauterine adhesions.[7] Also, the study was hospital based and hysterosalpinography used for diagnosis of all the patients in this study, has a poor correlation with hysteroscopic findings, which is currently the gold standard for diagnosis of IUA.[16]

The commonest age range for this condition was 20-34. This finding is similar to that from several studies, and reflects the reproductive age pattern of women in our society.[8,19] Most of the patients were married and the majority of them had tertiary education. A high level of education has been reported by other researchers in association with IUA.[21] Highly educated and professional women are more likely to start childbearing at a later age which predisposes them to unwanted pregnancy and also uterine fibroids. Also, highly educated women, being more financially independent, were more likely to afford to come to hospital for management of the condition. However, Efetie *et al.*, found that the incidence of IUA was associated with a lower educational status.[19]

Our patients were mostly of low parity, as has been found in other studies. This emphasizes the association of intrauterine adhesion with infertility.[8,21] The presence of intrauterine adhesions has been found in a significant proportion of patients seeking treatment for subfertility in some centers.[4,18] Even when these patients with IUA conceive, complications are common and these include spontaneous abortions, prematurity, and placental abnormalities like placenta accreta and increta.[5]

From our study, the common risk factors for this condition in our environment include dilatation and curettage for induced abortions, myomectomy and caeserean section. Dilatation and curettage causes physical trauma to the endometrium and its basalis layer.[8] Infection may also supervene leading to inflammation and healing by scar tissue formation.[8] The risk of IUA from dilatation and curettage is said to increase with the number of procedures.[8,10,12] The risk of unwanted pregnancies as women pursue a career at the expense of marriage, increases the risk of induced abortion.

Myomectomy was a significant risk factor in the development of IUA in this study, constituting about a quarter of cases. Uterine fibroids are the commonest benign tumors found in black women.[22] In Nigeria women with uterine fibroids present late for treatment, with massive multi-lobular masses, infertile and almost at the end of their reproductive careers.[23] Definitive treatment via hysterectomy is usually not accepted by these women and extensive, open myomectomies are usually performed in a bid to safeguard menstrual function and preserve reproductive potential. It is known that myomectomy leads to the development of intrauterine adhesions.[7,21] Indeed, the risk increases with the number of fibroids removed, which suggests a traumatic etiology. These findings are corroborated by this study.

Caesarean section was also a significant cause of IUA in this study. Caesarean section may lead to an adhesive endometrial fibrous process between the uterine walls.[8]

However, this is uncommon in the developed countries.[24] In this study, all patients who developed IUA after cesarean section had unsupervised labor in unorthodox facilities complicated by choriomnionitis. This leads to severe and chronic inflammation which results in IUA. This has been confirmed in other studies.[8,11] This reemphasizes the need for continuous advocacy for the presence of skilled birth attendants at delivery for all parturient.

Most of the patients presented with menstrual abnormalities, particularly secondary amenorrhoea. This is due to lack of endometrial regeneration and is indicative of the severity of the uterine adhesions. This has been found in other studies.[7,8] However, menstruation maybe normal and a high index of suspicion is necessary in diagnosing the condition.[7] Other patients, as in this study may present with infertility due to ischaemia and adhesions.[7]

The aim of treatment of intra uterine adhesions is to break the adhesions (adhesiolysis), to return the endometrium to normal function, and to make pregnancy possible for those desirous of conception (via a uterine splint and drugs to aid endometrial regeneration).[18] Adhesiolysis may be done blindly or through direct vision- hysteroscopic adhesiolysis.[7] Other methods of adhesiolysis include pressure lavage under ultrasound guidance (PLUG), or hysterectomy with transfundal adhesiolysis.[24,25] Uterine splinting to keep the endometrium apart is done with an intrauterine device or a pediatric Foley catheter. Drains, stents or tubing may also be used.[7] Endometrial regeneration is then achieved with cyclical estrogen/progesterone therapy.[7] Sildenafil, a vasodilator, can also be used.[7]

In this study, blind adhesiolysis under anaesthesia was done using a curette. Uterine splinting was then accomplished for all the patients using either an IUCD (CU-T 380A) for 3 cycles, or pediatric Foley catheter for 10 days. Cyclical Estrogen/progesterone combination was given for 3 cycles.

When compared to results from other studies (72.8%)[8] and (47.9%),[19] only 19.2% of patients achieved a restoration of normal menstrual function. This is very poor. However, it is known that treatment outcome depends on the degree and severity of adhesions as well as the presence of other causes of secondary amenorrhoea. The type of treatment offered also contributes to the success of treatment. Hysteroscopic adhesiolysis is the gold standard of management of IUA.[16] But, this is not widely available and was not available in the center at the time of this study. Insertion of Foley catheter as a uterine splint has been found to be superior to IUCD in the management of this condition, as was seen in this study.[9] The Cu-T 380A used in this study is known to be of small surface area. In addition, the imbedded copper is also inflammatory and may itself lead to adhesions.[23] Besides, almost all of the procedures were done by residents, probably because this surgery is categorized as 'minor', with increase in complications.[26]

Conclusion

In conclusion, IUA is not uncommon in our environment. It occurs mostly in young, married women of low parity. It most commonly occurs following induced abortion, abdominal myomectomy, as well as caesarean section following unsupervised labor in unorthodox facilities. The outcome of treatment was generally very poor. Blind adhesiolysis lead to a poor outcome. However, Foley catheter is safer and more effective as a uterine splint than Cu-T. Efforts should be made to introduce and train doctors in the use of diagnostic and therapeutic hysteroscopy. Also, continued advocacy for the utilization of proven contraceptive methods is necessary. Women must also be educated on timely health seeking behavior to avert medical complications.

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Conflicts of interest

There are no conflicts of interest.

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