

CLINICAL PRESENTATION AND TREATMENT OUTCOME OF ASHERMAN'S SYNDROME IN A NIGERIAN TEACHING HOSPITAL

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ABSTRACT

Background:

Asherman's syndrome is an important gynaecological condition due to its association with secondary amenorrhoea and infertility.

Objective:

This study was to evaluate the clinical presentation, risk factors, mode of presentation, treatment modality and outcome at the University of Port Harcourt Teaching Hospital (UPTH).

Methodology:

This was 5-year review of case files of patients with Asherman's syndrome managed at the UPTH. Relevant information was extracted from the case files and analysed with SPSS version 22 software package. Treatment outcome between modes of treatment were compared using Chi square test and P value < 0.05 was regarded as significant.

Results:

The prevalence of Asherman's syndrome was 6.62%. The age range of patients was 20-42 years. Most of the risk factors for Asherman's syndrome were pregnancy related in 66.1% of cases with unsafe abortion accounting for 41.9%. Infertility and hypomenorrhoea were the commonest modes of presentation. Blind adhesiolysis and insertion of Foley catheter was the

most frequent mode of treatment and there was no documented treatment with hysteroscopically directed adhesiolysis. Correction of menses was achieved in 45.2% while the overall pregnancy rate following treatment was 33.1%. Treatment outcome was significantly better with Foley catheter than Intrauterine device ($P=0.0000$)

Conclusion:

Discouraging the practice of preventing unwanted pregnancies through unsafe abortion may reduce the prevalence of Asherman's syndrome amongst the studied population. There is need to build capacity for the use of hysteroscopically directed adhesiolysis as this may yield better results.

Key words: *Asherman's syndrome, risk factors, treatment outcome, Port Harcourt.*

Introduction

Asherman's syndrome, also known as amenorrhoea traumatica or Uterine synechiae or Intrauterine adhesions (IUA), is a condition in which adhesions within the uterine cavity prevent normal growth of the endometrium.¹ It is an important gynaecological condition due to its association with secondary amenorrhoea and infertility. It results from over-vigorous endometrial curettage affecting the basal layer of the endometrium or adhesion that may follow an episode of endometritis.²⁻⁶ Asherman published reports of 29 patients with IUA who presented with amenorrhoea and cervical stenosis in 1948 and in 1950 established the diagnosis of IUA using hystero-graphy 56 years after the first case of IUA was reported by Fritsch in 1894.^{4,5} The exact pathophysiological origin of IUA remains

unclear. However, pregnancy remains the most frequently mentioned event preceding the development of Asherman's syndrome and it may follow vaginal delivery, caesarean section, post-abortal curettage, puerperal curettage, diagnostic curettage, diethylstilboestrol exposure, abnormal placentation, endometrial ablation and infection.⁴⁻¹⁰ The lesions range from minor to severe adhesions that may affect menstrual function and fertility. The majority of the patients with IUAs present usually with hypomenorrhea or secondary amenorrhoea.¹¹ Others may have relatively normal menses and in which case a high index of suspicion is needed to make diagnosis while some were detected as incidental findings on hysterosalpingogram performed for the evaluation of infertility.¹² Hysteroscopy is the mainstay of diagnosis, classification, and treatment of IUA.⁴⁻⁷ However,

hysterosalpingography (HSG) remains the most common method of diagnosis.^{13,14} Most of the cases at the University of Port Harcourt Teaching Hospital (UPTH) are diagnosed with HSG. Other methods of diagnosis include progesterone withdrawal/challenge test, hysteroscopy, saline infusion sonography, three-dimensional ultrasound scanning and magnetic resonance imaging.¹⁵⁻¹⁹ There are many classification systems for IUAs but the grading system of the American Society for Reproductive Medicine (ASRM) has been the most popular.²⁰ ASRM grading system is an objective scoring which takes into account the extent of cavity involvement, type of adhesions and menstrual pattern and can be applied to cases diagnosed hysteroscopically or by HSG which implies that this scoring system can be useful in low resource setting like the study centre. Blind adhesiolysis was widely used for treatment before the widespread use of hysteroscopy. Insertion of Foley catheter for 7–10 days after adhesiolysis to act as a physical intrauterine barrier was found to be superior to the use of intrauterine device in terms of fewer complications and risk of recurrence.^{1,25,26} Postoperative treatments with oestrogen therapy to aid in the regeneration of the damaged endometrium has been advocated by various authors.²⁷⁻³⁰ This study was undertaken to assess the

prevalence of Asherman's syndrome, mode of presentation and outcome of treatment at UPTH and to make recommendations.

MATERIALS AND METHODS

This was a retrospective study of cases of Asherman's syndrome managed at the UPTH over a 5-year period; from January 1, 2012 to December 31, 2016. Permission was obtained from the Heads of the Department of Obstetrics and gynaecology and Medical records for the use of hospital records for this research. The theatre records of all cases of uterine synaechiae treated within the study period were compiled, and the case notes retrieved from the medical records department and relevant data for the study were extracted and entered into a structured proforma. The information obtained included the biosocial data, parity, clinical presentation, menstrual pattern, reproductive performance, predisposing factors, diagnostic modality, treatment modality and treatment outcome. Following clinical evaluation including transvaginal ultrasound scan and hysterosalpingogram and diagnosis of IUA an informed consent was obtained for definitive treatment. Treatment usually involves blind adhesiolysis, with intrauterine insertion of Paediatric (size 6-10) Foley's catheter for

7-10 days or insertion of Intrauterine device (IUD) for 3 months. Following the procedure, the patients were usually administered combined oestrogen/progesterone therapy or sequential oestrogen and progesterone therapy for about 2-3 months. Patients were followed-up regularly to ascertain the efficacy of the treatment offered. The data were analysed using Statistical Package for Social Science (SPSS), version 21.0. The results were presented by simple frequency tables, bar chart, and Chi-square test was used to compare mode of treatment and treatment outcome and p value < 0.05 was regarded as significant.

RESULTS

There were 1,948 gynaecological operations during the period under review of which 129 were for uterine synechiae giving a prevalence rate of 6.62% of all gynaecological surgeries. One hundred and twenty-four (96.1%) of the folders retrieved had complete information for analysis. The age of the patients ranged between 20 and 42 years, with most (58.1%) in their third decade. The majority (91.1%) of the patients were married while 2 (1.6%) were divorced. Twelve patients (9.7%) were nulliparous while seventy-six (61.3%) patients had more than one delivery. Most of the patients (61.3%) had

secondary school education while 16.1% (20) had tertiary level of education. Table 1 shows the socio-demographic characteristics of the patients.

The risk factors associated with Asherman's syndrome are shown in Table 2. The commonest risk factors were pregnancy-related, accounting for 66.1% (82) of which 41.9% (52) were related to dilatation and curettage (D&C) for abortion, 13.7% (17) were due to puerperal infection while 10.5% (13) followed caesarean section. In four (3.2%) cases no known risk factor was identified.

Table 3 shows the clinical presentations of Asherman's syndrome. Infertility and hypomenorrhea were the commonest mode of presentations in 57.3% (71) and 30.6% (38) of cases respectively. Adhesiolysis and Foley's catheter insertion with oestrogen-progesterone therapy was the most frequent treatment modality in 64.5% (80) of the patients while 35.5% (44) had IUD insertion.

Correction of menstrual abnormality was achieved in 45.2% (24) of the 53 patients with menstrual abnormalities, overall pregnancy rate following treatment was 33.1% (41), 19.4% (24) had no change from the treatment while in 2.4% (3) of the patients had worsening of symptoms. These are presented in figure 1.

Among the 53 patients who had menstrual abnormality 24 (57.1%) of 42 patients who

were treated with Foley's catheter had their menstrual abnormality corrected while none of the 11 patients with menstrual abnormalities treated with IUD had their menstrual abnormality corrected and the difference was statistically significant (P=0.0004). Twenty-four (30

%) of the women who had adhesiolysis and Foley catheter achieved pregnancy while 17 (38.6%) of those who had IUD achieved pregnancy and the difference was not statistically significant (P= 0.328). Table 4 shows treatment modality and outcome

Table 1: Socio-demographic Characteristics of Patients

	Frequency (N=124)	Percentage
Age (years)		
20-24	5	4.0
25-29	23	18.5
30-34	48	38.7
35-39	24	19.4
≥40	24	19.4
Marital Status		
Married	113	91.1
Single	9	7.3
Divorced	2	1.6
Parity		
0	12	9.7
1	36	29.0
2-4	72	58.1
≥5	4	3.2
Education		
None	4	3.2
Primary	24	19.4
Secondary	76	61.3
Tertiary	20	16.1

Table 2: Risk Factors Associated with Asherman's Syndrome

	Frequency (N=124)	Percentage
Caesarean Section	13	10.5
Puerperal Infection	17	13.7
D/C for Abortion	52	41.9
Myomectomy	4	3.2
PID	18	14.5
D/C for Infertility	16	12.9
Unspecified	4	3.2

PID=Pelvic Inflammatory Disease; D/C=Dilatation and Curettage

Table 3: Presenting Complaints of Patients with Asherman's Syndrome

	Frequency (N=124)	Percentage
Secondary Infertility	71	57.3
Hypomenorrhea	38	30.6
Amenorrhea	9	7.3
Oligomenorrhea	6	4.8

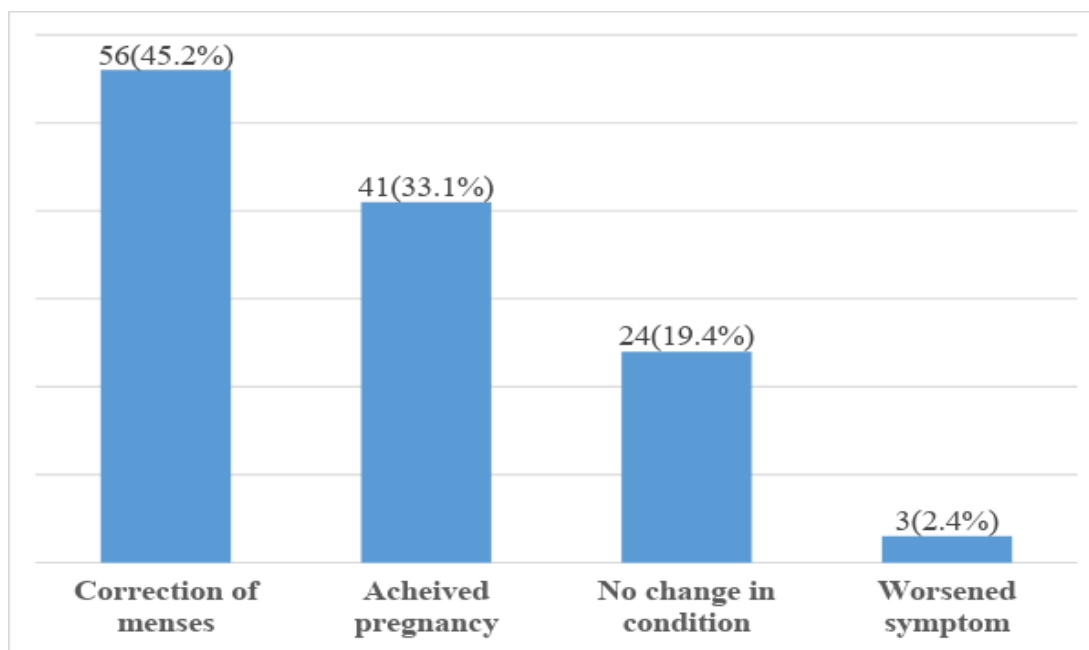


Figure 1: Treatment outcomes for patients with Asherman's syndrome

Table 4: Relationship between Treatment Option and Outcome

	Treatment Option		χ^2	p-value
	Foley's Catheter(N=80)	IUD (N=44)		
Treatment Outcome				
Correction of menses	56 (70.0%)	0 (0.0%)	80.531	0.000*
Achieved pregnancy	24 (30.0%)	17 (38.6%)	0.96	0.328
No change in condition	0 (0.0%)	24 (54.5%)	54.11	0.000*
Worsened symptom	0 (0.0%)	3 (6.8%)	NA	0.042

IUD=Intra-uterine Device; *=Statistically Significant

DISCUSSION

The study evaluated the incidence, clinical presentation, treatment modalities and outcome of patients presenting with Asherman's syndrome at the UPTH, Port Harcourt, Nigeria. The 6.62% of gynaecological surgeries done for Asherman's syndrome in this study lies within a reported estimated range of 1.5% as an incidental finding at HSG and 21.5% of women with a history of postpartum uterine curettage.^{29,30} The findings on age distribution among the patients studied is similar to other studies where majority of their patients were in their third decade of life.^{9,27,28} This group of patients may exhibit better health seeking behaviour than their counterpart at the extremes of reproductive age. The most common risk factor associated with IUAs in this study was pregnancy-associated, accounting for 66.1% and most were from unsafe

abortion. Discouraging the practise of unsafe abortion may reduce the prevalence of IUA among the studied population. Infertility was the commonest mode of presentation in up to 57.3% and this finding is at variance with other studies that reported menstrual irregularity in the form of hypomenorrhea as the most common presentation.^{9,11} Though blind adhesiolysis is associated with risk of uterine perforation and low success rate^{1,10,17} it was the treatment modality employed in all of our patients. However, there was no recorded incidence of uterine perforation in this study, though the pregnancy outcome was lower than the 66.1 % pregnancy rate and 64.0 % live birth rate reported by Xiao et al following the use of hysteroscopic adhesiolysis thus buttressing the superiority of hysteroscopic adhesiolysis over blind adhesiolysis.¹⁰ The lower pregnancy rate may thus be attributed to the unavailability of the

hysteroscope which is regarded as the gold standard for the diagnosis and treatment of IUAs.¹⁵ In consonance with this study, many previous studies reported that the use of blind adhesiolysis and Foley's catheter insertion together with postoperative use of oestrogen-progesterone therapy yielded good results.^{17-23,25-27} Correction of menses was seen in 45.2% of our patients while the pregnancy rate was 33.1%. The results were comparable to that of a previous study that reported that the group treated with Foley's catheter showed conception rate of 34% and a lower recurrence rate of IUAs.²⁴ Other researchers similarly reported intrauterine pregnancies rates ranging from 22% to 45% and live births range from 28% to 32%.¹⁰ Hanstede et al reported better results including return to normal menses in 97.8% and restoration of normal uterine cavity in 95% following the use of hysteroscopy for both diagnosis and treatment.¹⁷ This study revealed that treatment outcomes in terms of restoration of menses and pregnancy rates were better with Foley catheter compared to IUD similar to the findings by Orhue et al and Amer et al.^{25,26} This probably may be due to the fact that the more severe cases were treated with IUD as it was observed that most patients with secondary amenorrhoea were treated with IUD as against those with hypomenorrhoea and this may have accounted for the less successful outcome

with IUD. Patients with secondary amenorrhoea are likely to have more severe forms of IUA when compared to those with hypomenorrhoea. In this study however, the degree of IUA was not determined before the definitive treatment. An advantage of Foley catheter over IUD is the perception of IUD as a contraceptive device which may have a negative psychological effect on patients desiring pregnancy and this is made worse by the fact that the IUD is carried for about 3 months while Foley catheter is left in-situ for less than 2 weeks. Proper counselling of patients may improve this negative psychological effect. The use of copper T - 380 rather than the preferred Lippe's loop (which was not readily available) an inert IUD may also account for the less favourable outcome with IUD.

LIMITATION

The limitation of this study was the fact that it's a hospital-based study and therefore the findings may not be generalized to the entire population. The study did not assess the role of hysteroscopy which is the gold standard for the diagnosis and treatment of intrauterine adhesions.

CONCLUSION

Asherman's syndrome is relatively common amongst the studied population with infertility and hypomenorrhea as the main presenting complaints. The main risk factors of IUAs were dilatation and curettage, PID and puerperal sepsis. Discouraging unsafe abortion will reduce

the prevalence of Asherman's syndrome. There is an urgent need to provide the hysteroscope as this may yield better therapeutic results than the traditional blind adhesiolysis which was performed for all the patients.

Conflict of interest: None

REFERENCES

1. Adam B. Polycystic ovary syndrome and secondary amenorrhoea. In: Edmond DK (ed) *Dewhurst's text book of obstetrics and gynaecology. Eight edition, Oxford: Blackwell science publishers* 2012;41:526
2. Oyebuchi E., Ugwu V. Common gynaecological operations/procedures. *Foundation of clinical obstetrics and gynaecology in the Tropics. 2015; 35:220-221*
3. Dc Dutta. Amenorrhoea. Dutta's textbook of gynaecology. Sixth edition, New Delhi, Jaypee, the health science publishers 2013;28:45
4. Asherman JG. Amenorrhoea traumatica (atretica). *J Obstet Gynaecol Br Emp* 1948 ;**55**:23-30.
5. Alessandro C, Carlo A, Antonio M, Giuseppe D, Adam M. The management of Asherman's syndrome: a review of literature. *Reprod Biol Endocrinol* 2013; **11**: 118.
6. Ugboaja JO, Oguejiofor CB, Igwegbe AO. Clinico-hysteroscopic analysis of severe intrauterine adhesions among Nigerian infertile women. *The Pan African Medical Journal.* 2017; **28**:226.

7. Gaya SA, Adamu IS, Yakasai IA, Abubakar S. Review of intrauterine adhesiolysis at the Aminu Kano Teaching Hospital, Kano, Nigeria. *Ann Afr Med.* 2012; **11**(2): 65-9.
8. Ajayi A, Biobaku O, Ajayi V, Oyetunji I, Aikhuele H et al. Detection of intrauterine lesions by Hysteroscopy among women with fertility challenges in an In-Vitro Fertility Center in Lagos, Nigeria. *Crit care Obst and gynae.* 2015; **1**:1.
9. Takai IU, Kwayabura AS, Ugwa EA, Idrissa A, Obed JY et al. A 10-year Review of the Clinical Presentation and Treatment Outcome of Asherman's Syndrome at a Centre with Limited Resources. *Ann Med Health Sci Res.* 2015; **5**(6):442-6.
10. Xiao S, Wan Y, Xue M, Zeng X, Xiao F et al. Aetiology, treatment, and reproductive prognosis of women with moderate-to-severe intrauterine adhesions. *Int J Gynaecol Obstet.* 2014 May; **125**(2):121-4.
11. Ndububa VI, Anolue FC. Incidence, symptomatology and aetiological factors for Asherman's Syndrome in Orlu, South-East Nigeria. *Port Harcourt Medical Journal.* 2014;**8**(1).
12. Seshadri S, El-Toukhy T, Douiri A, Jayaprakasan K, Khalaf Y. Diagnostic accuracy of saline infusion sonography in the evaluation of uterine cavity abnormalities prior to assisted reproductive techniques: a systematic review and meta-analysis. *Hum Reprod Update.* 2015; **21**(2):262-74.
13. Kim MJ, Lee Y, Lee C, Chun S, Kim A et al. Accuracy of three-dimensional ultrasound and treatment outcomes of intrauterine adhesion in infertile women. *Taiwan J Obstet Gynecol.* 2015; **54**(6): 737-41.
14. Chen L, Zhang H, Wang Q, Xie F, Gao S et al. Reproductive Outcome in Patients with Intrauterine Adhesion Following Hysteroscopic Adhesiolysis: Experience from the largest Women's Hospital in China.

- J Minim Invasive Gynecol.* 2017; **24**(2): 299-304.
15. Roy KK, Baruah J, Shama JB, Kumar S, Kachawa G et al. Reproductive Outcome Following Hysteroscopic Adhesiolysis in Patients with Infertility Following due to Asherman's Syndrome. *Arch Gynecol Obstet.* 2010; **281**(2): 355-61.
16. Yang JH, Chen CD, Chen SU, Yang YS, Chen MJ. The Influence of the Location and the Extent of Intrauterine Adhesions on Recurrence after Hysteroscopic Adhesiolysis. *BJOG.* 2016; **123**(4): 618-23.
17. Hanstede MM, Van der Meij E, Goedeman L, Emanuel HM. Result of Centralized Asherman Surgery, 2003-2013. *Fertil Steril.* 2015; **104**(6): 1561-8.
18. Fadare OO. Reproductive outcome following hysteroscopic adhesiolysis in patients with Asherman's syndrome. *World J Laparosc Surg* 2011; **4**:39-41.
19. Efetie ER. Reproductive Outcome Following Treatment of Intrauterine Adhesion in Abuja Nigeria. *Nig J Clin Pract.* 2006; **9**(2):164-168.
20. The American Fertility Society. Classification of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, Mullerian anomalies and intrauterine adhesions. *Fertil Steril.* 1988; **49**(6): 944-955.
21. Dilbaz B, Akpınar F, Altınbaş S, Yılmaz S, Özceli R et al. Reproductive Outcome in Patients with Asherman's Syndrome After Hysteroscopic Adhesiolysis. *J Minim Invasive Gynecol.* 2015; **22**(6s): S185-S186.
22. Socolov R, Anton E, Butureanu S, Socolov D. The endoscopic management of uterine synechiae: a clinical study of 78 cases. *Chirurgia (Bucur).* 2010; **105**(4): 515-8.

23. Pabuçcu R, Atay V, Orhon E, Urman B, Ergün A. Hysteroscopic treatment of intrauterine adhesions is safe and effective in the restoration of normal menstruation and fertility. *Fertil Steril* 1997; **68**:1141-3.
24. Yasmin H, Nasir A, Noorani KJ. Hysteroscopic management of Ashermans syndrome. *Pak Med Assoc* 2007; **57**:553-5.
25. Amer MI, Abd-El-Maeboud KH. Amnion graft following hysteroscopic lysis of intrauterine adhesions. *J Obstet Gynaecol Res* 2006; **32**:559-66.
26. Orhue AA, Aziken ME, Igbefoh JO. A comparison of two adjunctive treatments for intrauterine adhesions following lysis. *Int J Gynaecol Obstet* 2003; **82**:49-56.
27. Kodaman PH, Arici A. Intra-uterine adhesions and fertility outcome: How to optimize success? *Curr Opin Obstet Gynecol* 2007; **19**:207-14.
28. Deans R, Abbott J. Review of intrauterine adhesions. *J Minim Invasive Gynecol* 2010; **17**:555-69.
29. Broome JD, Vancaillie TG. Fluoroscopically guided hysteroscopic division of adhesions in severe Asherman syndrome. *Obstet Gynecol* 1999; **93**:1041-3.
30. Thomson AJ, Abbott JA, Kingston A, Lenart M, Vancaillie TG. Fluoroscopically guided synechiolysis for patients with Asherman's syndrome: Menstrual and fertility outcomes. *Fertil Steril* 2007; **87**:405-10.