

Access this article online	
Quick Response Code:	Website: www.annalsafrmed.org
	DOI: 10.4103/1596-3519.93526

Review of intrauterine adhesiolysis at the Aminu Kano Teaching Hospital, Kano, Nigeria

Sule A. Gaya, Ibrahim S. Adamu, Ibrahim A. Yakasai, Sanusi Abubakar¹

Department of Obstetrics and Gynaecology, ¹Department of Community Medicine, Bayero University Kano/ Aminu Kano Teaching Hospital, Kano, Nigeria

Correspondence to: Dr. IA Yakasai, Department of Obstetrics and Gynecology, Aminu Kano Teaching Hospital, Kano, Nigeria. E-mail: ibrahimyakasai57@hotmail.com

Abstract

Background: Hysteroscopic adhesiolysis is shown to significantly improve the outcome of intrauterine adhesions (IUA). The Minimally Invasive Surgical Unit (MISU) of our Department recently acquired a hysteroscope which is being used for hysteroscopic adhesiolysis among others.

Materials and Methods: There were 57 patients diagnosed to have IUA of which 54 case notes were available for analysis, giving a retrieval rate of 95%. The information extracted includes age, parity, and menstrual pattern, predisposing factors, treatment option, outcome, complications and the year of the procedure. The data extracted were analyzed using Epi info Version 3.4.1. Chi squared test (Fisher's exact test) was used to test for statistical difference in the outcome of the modalities of treatment. *P* value of less than 0.05 was considered significant.

Results: There were 57 cases of IUA out of 4160 gynecological patients seen, giving a prevalence of 14/1000. The mean age was 28.9 years (SD 4.5) and mean parity was 1.4 (SD 1.4). Etiologic factors include Dilatation and curettage (D and C) (33.3%), Caesarean section (C/S) (31.5%), manual removal of placenta and Pelvic Inflammatory Disease (PID) (7.4% each), and unexplained (3.7%). Mode of presentation was secondary amenorrhoea (50%), oligomenorrhoea (22.2%), and hypomenorrhoea (10%). As for the management, 68% had blind procedure while 25.9% had hysteroscopic procedure. Lipps loop was used in all except three patients who had pediatric Foleys catheter instead. Upon follow-up 59.3% resumed normal menses, 11.1% had oligomenorrhoea, hypomenorrhoea 13% and amenorrhoea 5.6%. There was no statistical difference in the outcome of treatment between hysteroscopic adhesiolysis and the blind procedure when return to normal menses is considered as the end point, OR=2.27, CI 0.45-12.65, Fisher exact test (one-tailed) *P*=0.2184818.

Conclusion: There was no significant difference between the blind and hysteroscopic procedures. Dilatation and curettage was found to be the commonest cause of IUA.

Keywords: Adhesiolysis, hysteroscopy, intrauterine

Résumé

Fond: Hystérocopique adhésiolyse montre d'améliorer considérablement l'issue des adhérences intra-utérine (UIA). La micromanipulation surgical Unit (MISU) de notre département a récemment acquis un hystéroscope qui est utilisée pour hystérocopique adhésiolyse, entre autres.

Matériaux et procédés: Il y a 57 patients diagnostiqués d'avoir UIA auquel cas 54 notes étaient disponibles pour l'analyse, donnant un taux de récupération de 95%. Les informations extraites comprennent l'âge, parité et profil de saignements menstruels, facteurs prédisposants, option thérapeutique, résultat, des complications et l'année de la procédure. Les données extraites ont été analysés à l'aide d'Epi info vversion 3.4.1. Chi carré test (test exact de Fisher) a été utilisé pour tester la différence statistique dans l'issue des modalités de traitement. Valeur de *p* de moins de 0,05 était considérée comme significative.

Résultats: Il y a 57 cas de l'UIA de 4160 patients gynécologiques vus, donnant une prévalence de 14/1000. L'âge moyen était de 28,9 ans (SD 4.5) et la moyenne de parité was 1.4 (SD 1.4). etiologic facteurs comprennent d et

C (33,3%), C/S (31,5%), extraction manuelle du placenta et PID (7,4% chacun), et inexplicée (3,7%). Mode de présentation était secondaire aménorrhée (50%), oligomenorrhoea (22,2%), et hypomenorrhoea (10%). Comme pour le geste, 68 % avait eu une procédure aveugle tandis que 25,9% avait eu une hystéroscopique. Boucle de Lippes a été utilisée dans tout sauf trois patients qui avaient eu un cathéter Foley plutôt. À suivi-up 59,3% reprend des menstruations normales, 11,1% avait eu oligomenorrhoea, hypomenorrhoea 13% et l'aménorrhée 5,6%. Il n'y avait aucune différence statistique dans l'issue du traitement entre hystéroscopique adhésiolyse et la procédure aveugle quand le retour à la normales menstruations est considéré comme le point de fin, ou = 2.27, CI 0,45-12.65, test exact de Fisher (unà queue) $P=0.2184818$.

Conclusion: Il y avait aucune différence significative entre les procédures aveugles et hystéroscopique. Dilatation et curetage s'est avéré pour être la cause la plus fréquente de l'UAI.

Mots clés: Adhésiolyse, hystéroscopie, jentrauterine

Introduction

Intrauterine adhesions (IUA) were first described by Fritsch in 1944 and were popularized by Joseph Asherman in 1948.^[1] It is commonly referred to as Asherman's syndrome which is characterized by adherence of uterine walls, partial or complete obliteration of uterine cavity, variable placement of adhesions and the clinical symptoms of menstrual abnormalities, infertility or habitual abortion.^[2] The true incidence is unknown,^[3] but it was shown to occur in about 20% of patients being treated for infertility.^[4,5]

The cause is usually an endometrial curettage traumatizing the basalis layer, particularly in a pregnant or recently pregnant uterus.^[1] A study in Nigeria showed about 23% to be associated with induced abortion.^[6] Other predisposing factors include curettage three to four weeks post partum, during lactation or for a septic or missed abortion, Caesarian section, myomectomy, pelvic inflammatory disease, diagnostic curettage or pelvic irradiation.^[1] Though tuberculous endometritis and schistosomiasis may give rise to the condition,^[6-8] no consistent findings with infection have been noted.^[9] Other causes include surgeries for uterine septae and bicornuate uterus.^[3]

The findings of IUA vary considerably from complete obliteration to minimal adhesions. There can also be filmy, fluffy adhesions or dense adhesions that are difficult to cut with hysteroscopic scissors.^[3] Adhesions in the cavity are the most common, whereas total atresia and cervico-isthmic adhesions are rare.^[10] Endometrium obtained by curettage at the time of treatment of adhesions was found to be secretory in 80%, proliferative in 12%, atrophic in 5% and hyperplastic in 3%.^[10,11] Dense fibrous adhesions without glands carry the worst prognosis for patients in terms of both menses and fertility and present the greatest difficulty in treatment.^[3]

The majority of the patients with IUA present with menstrual abnormalities, usually hypomenorrhea or secondary amenorrhea, however, recurrent fetal wastages from abortion or intrauterine fetal death may occur.^[12] Others may have relatively normal menses in which a high index of suspicion is needed to make diagnosis.^[3]

Hysterosalpingography remains the most common method of diagnosis.^[6,7] The complications of this procedure are bleeding, infection and cramping pains that can be avoided by use of aseptic technique, oral antibiotics and use of non-steroidal anti-inflammatory analgesics according to the patients' need.^[13] Other methods of diagnosis include hysteroscopy, saline infusion sonography, 3-D ultrasound scanning and magnetic resonance imaging (MRI).^[7,10,12,14-16]

The treatment of IUA has evolved over the years. Initially, Asherman treated his patients either by gentle dilatation vaginally or abdominally by hysterotomy depending on the extent of the adhesions.^[17,18] The gold standard method of IUA treatment remains hysteroscopic adhesiolysis with or without laparoscopic guidance to reduce the incidence of perforation.^[3] Some reports advocated the use of electrosurgery but this is less popular because of fear of adhesion reformation.^[16] Coccia *et al.*, in 2001 reported a novel technique for patients with mild to moderate IUA called Pressure Lavage under Ultrasound Guidance (PLUG).^[19] Another method is myometrial scoring, where a series of six to eight incisions are made on the myometrium, from the fundus to the isthmus to a depth of 4 mm using a knife electrode^[20] but it has not gained popularity due to the risk of adhesion reformation.

Several methods are described to reduce adhesion reformation. These include gauze soaked in penicillin-containing solution, which is now obsolete, use of non-medicated Intra Uterine Contraceptive Device (IUCD) such as Lippes loop and the use of catheter balloon.^[3] Use of

amnion around the catheter balloon and use of spray gel adhesion barrier after electrocautery have been described.^[21,22] A study in Nigeria has shown statistically significant better outcomes with the use of Foley's catheter in terms of normal menses and normal Hysterosalpingogramme (HSG) findings after adhesiolysis.^[23]

Prophylactic broad-spectrum antibiotics are given, especially when a catheter is used, and should continue until the catheter is removed. Various preparations of estrogen are used to encourage endometrial regeneration, together with progestogens for withdrawal bleeding.^[3]

In developed countries follow-up using HSG has been replaced with office hysteroscopy using small 3-mm flexible hysteroscope.^[24]

The Minimally Invasive Surgical Unit of the department of Obstetrics and Gynecology, Aminu Kano Teaching Hospital (AKTH), Kano acquired a hysteroscope in 2006 which became functional in 2007. Because of this most IUA treatment procedures are being done hysteroscopically since 2007. This study is designed to assess the impact of this new machine on the outcome of patients with IUA in AKTH. There was no similar study in this center before.

Objective

To compare the outcome of blind and hysteroscopic adhesiolysis at AKTH from January 2001 to December 2008.

Materials and Methods

The case notes of all the patients with IUA attending the gynecology clinic of AKTH were retrieved from the record department. The information extracted from the case notes included age, parity, menstrual pattern, predisposing factors, method of diagnosis, treatment method, outcome, complication and the year of the procedure.

The data extracted were analyzed using Epi info Version 3.4.1. Atlanta Georgia, and presented in the form of tables, and descriptive statistics were used in the form of absolute numbers, measures of central tendencies and measure of dispersion. Chi squared test (Fisher's exact test) was used to test for statistical difference in the outcome of the modalities of treatment. *P* value of less than 0.05 was considered significant.

Results

A total of 54 case notes were retrieved, giving a retrieval rate of 95%. There were 57 cases of IUA out of a total of 4160 gynecological cases seen between January 2001 and December 2008. This gave a prevalence of about 14/1000 gynecology patients seen over the study period.

The age of the patients ranged between 20-37 years with a mean age of 28.9 years and standard deviation (SD) of 4.5 years. The majority of the patients were between 25-34 years of age, accounting for about 65%. The parity of the patients ranged between 0-5, with mean of 1.4 and SD of 1.4. The majority of the patients were either Para 0 or Para 1 accounting for about 63%. These are shown in Tables 1 and 2.

Table 3 shows the distribution of the etiologic factors for IUA at AKTH over the study period. D and C due to pregnancy events accounted for up to about 33.3% while Caesarean section (C/S) accounted for 31.5%. Manual removal of placenta (MRP) and PID accounted for 7.4% each. The causes in two patients (3.7%) were unexplained.

The majority of the patients (50%) presented with secondary amenorrhea, while patients with oligomenorrhea, hypomenorrhea, or normal menses accounted for 22.2%, 10% and 5% respectively [Tables 4].

Up to 81.5% of the patients were diagnosed using HSG while only 5.65% were diagnosed using hysteroscopy. Progesterone challenge test was used in diagnosing 13% of the patients.

Table 1: Age distribution of patients with intrauterine adhesions

Variable	Number	Percentage
Age		
15-19	2	3.7
20-24	9	16.7
25-29	16	29.6
30-34	19	35.2
35-39	8	14.8
Total	54	100

Table 2: Parity distribution of patients with intrauterine adhesions

Parity	Frequency	Percentage
0	18	33.3
1	16	29.6
2	10	18.5
3	5	9.3
4	3	5.6
5	2	3.7
Total	54	100

The majority of the patients were treated using blind adhesiolysis followed by IUCD (Lippes loop) insertion (68.5%), while only 25.9% had hysteroscopically guided adhesiolysis and IUCD insertion. Three patients had catheter inserted instead of IUCD due to scarcity of Lippes loop.

About 59.3% of the patients resumed normal menses following treatment and most of them were those with oligomenorrhea or hypomenorrhea, while others had oligomenorrhea (11.1%), hypomenorrhea (13%), or still were amenorrheic (5.6%) as shown in Table 5.

Four patients had complications from the blind procedure. Three had missing IUCD, with one translocated in the bladder, and one patient had uterine perforation during the procedure.

In general, the trend of IUA over the study period showed a steady increasing pattern, with the highest increase over the last three years when the hysteroscope became available. This is shown in Figure 1.

There was no statistical difference in the outcome of treatment between hysteroscopic adhesiolysis and the blind procedure when return to normal menses is considered as the end point, OR=2.27, CI 0.45-12.65, Fisher exact test (one-tailed) $P=0.2184818$.

Discussion

The prevalence of IUA of 14/1000 is lower than the figure quoted in other Nigerian teaching hospitals.^[1,21] This difference may be due to a higher

rate of induced abortion in those areas which is the leading cause of IUA. This figure may not be a true reflection of the incidence of IUA in Kano as many of the patients present with infertility or recurrent miscarriages and those having regular menstruation and have proven their fertility may not even care to come to the hospital.^[1,3]

Majority of the patients were within the age range of 25-34 years and were of low parity (0 or 1). This finding is similar to the findings in other studies in Nigeria.^[1,21]

The role of D and C as the major culprit responsible for the development of IUA is less in this study compared to the Lagos group^[1] while the contribution by C/S is higher and there is a prominence of Manual Vacuum Aspiration (MVA) and manual removal of placenta. All the patients with C/S as a cause for IUA in this study had the C/S done due to prolonged or obstructed labor as documented in other studies.^[1] This further stressed the need for a skilled attendant at the point of care to reduce complications.

The majority of the patients presented with secondary amenorrhea in contrast to hypomenorrhea found in the Lagos study.^[1] Probably majority of our patients misunderstood absence of menses to be the only indication of reproductive system malfunction as such seek medical attention only when they did not see their menses but not when the flow is reduced.

Hysterosalpingography still remained the commonest method of diagnosing IUA at this center despite the presence of hysteroscope for three years. This may be related to its high cost compared to HSG. There is a hope that with time

Table 3: Etiologic factors for intrauterine adhesions

Etiologic factor	Frequency	Percentage
D and C	18	33.3
C/S	17	31.5
MVA	6	11.1
MRP	4	7.4
PID	4	7.4
Puerperal sepsis	3	5.6
Unexplained	2	3.7
Total	54	100.0

Table 4: Menstrual pattern of patients with intrauterine adhesions

Menstrual Pattern	Frequency	Percentage
Secondary amenorrhea	27	50.0
Oligomenorrhea	12	22.2
Hypomenorrhea	10	18.5
Normal menses	5	9.3
Total	54	100.0

Table 5: Menstrual pattern pre and post treatment

Presentation	No. of patients	Lost to follow-up	No. analyzed	Normal menses	Oligomenorrhea	Hypomenorrhea	Amenorrhea
Oligomenorrhea	12	0	12	7	3	2	0
Hypomenorrhea	10	2	8	8	0	0	0
Amenorrhea	27	2	25	14	3	5	3
Normal menses	5	2	3	3	0	0	0
Total	54	6	48	32	6	7	3

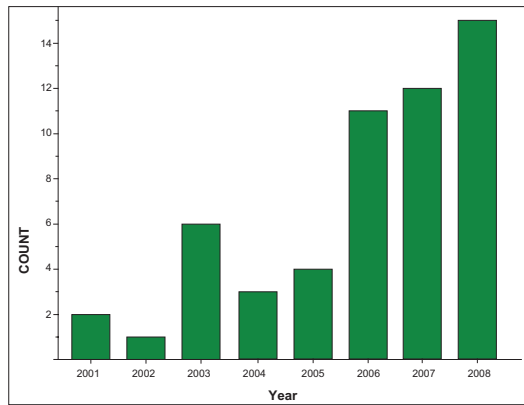


Figure 1: Distribution of patients with IUA by year

there may be increased use of the hysteroscope for the diagnoses of IUA in this center as efforts are on to reduce the cost.

There is increased use of hysteroscopic adhesiolysis from only one case in 2006 to seven cases in both 2007 and 2008 but there was also a similar increase in the blind procedure. This was because of the renovation taking place in the main operating theater where the hysteroscope was before it was moved to the maternity theater temporarily. In order to reduce the waiting time, some of the patients had the blind procedure done. The failure to demonstrate a statistical difference in the outcome of the two procedures, as done in Benin^[21] may be explained by selection bias since most of the patients had failed the blind procedure before they were referred for the hysteroscopic procedure taking into consideration that success depends on the extent of the damage.^[9,25]

Conclusion

The prevalence of IUA at AKTH is 14/1000 new gynecological cases seen, which is much lower than the figure in other Nigerian teaching hospitals. Dilatation and curettage due to pregnancy events top the list of causes of IUA in this study, while Caesarean section and MVA feature prominently as other causes too. There was a sharp increase in the number of cases of IUA from 2006 to 2008 which may be due to the availability of the hysteroscope that improved the diagnosis.

References

- Ogedengbe OK, Ogunmokun AA. The trend of intrauterine adhesions in Lagos, Nigeria. *Trop J Obstet Gynaecol* 1999;16:57-60.
- Emuveyan EE. Amenorrhoea. In: Kwawukume EY, Emuveyan EE, editors. *Comprehensive Gynaecology in the tropics*. Accra, Ghana: Graphic Packaging Limited; 2005. p. 307.
- Berman JM. Intrauterine adhesions. *Semin Reprod Med* 2008;26:349-55.
- Giwa-Osagie OF, Emuveyan EE. Evaluation of secondary amenorrhoea. *Nig Med Pract* 1968;7:79-83.
- Otubu JA, Olarenwaju RS. Hysteroscopy in infertile Nigerian women. *Afr J Med Med Sci* 1989;18:117-20.
- Ogedengbe OK, Giwa-Osagie OF, Adedeji OF, Oyeyinka O. Intrauterine adhesions in Lagos, Nigeria. *J Obstet Gynaecol* 1991;11:134-6.
- March CM. Intrauterine adhesions. *Obstet Gynecol Clin North Am* 1995;22:491-505.
- Pratt R, Robison V, Navin T, Hlavsa M, Pevzner E. Trends in Tuberculosis incidence-United states. 2006 (disease and disorder overview) *MWMMR Morb Mortl Wkly Rep* 2007;56:245-6.
- Schenker JG. Aetiology and therapeutic approach to synaechia uteri. *Eur J Obstet Gynaecol Reprod Biol* 1996;65:109-13.
- Al-Inany H. Intrauterine adhesions: An update. *Acta Obstet Gynaecol Scand* 2001;80:986-93.
- Tam WH, Lan WC, Cheung LP, Yuen PM, Chung TK-H. Intrauterine adhesions after conservative and surgical management of spontaneous abortions. *J Am Assc Gynaecol Laparosc* 2002;9:182-5.
- Schenker JG, Margalioth EL. Intrauterine adhesions-An updated appraisal. *Fertil Steril* 1982;37:593-610.
- Simpson WR Jr, Beitia LG, Mester J. Hysterosalpingography: A reemerging study. *Radiographics* 2006;26:419-31.
- March CM, Israel R. Intrauterine adhesions secondary to elective abortions: Hysteroscopic diagnosis and management. *Obstet Gynaecol* 1976;48:422-4.
- Canfino E, Friberg J, Giglia RV. Imaging of intrauterine adhesion. *Obstet Gynaecol* 1985;66:596-8.
- Barcelar AC, Wilcock D, Powell M, Worthington BS. The value of MRI in the assessment of traumatic intrauterine adhesions (Asherman's syndrome). *Clin Radiol* 1995;50:80-3.
- Asherman JG. Traumatic intrauterine adhesions. *BJOG* 1950;57:892-6.
- Asherman JG. The myth of tubal and endometrial transplantation. *BJOG* 1960;67:228-33.
- Coccia ME, Becattini C, Bracco GL, Pampaloni F, Bargelli G, Scarselli G. Pressure Lavage under ultrasound guidance: A new approach for outpatient treatment of intrauterine. *Fertil Steril* 2001;75:601-6.
- Protopapas A, Shushan A, Magos A. Myometrial Scoring: A new technique for the management of severe Asherman's syndrome. *Fertil Steril* 1998;69:860-4.
- Orhue AAE, Aziken ME, Igbefoh JO. A comparison of two adjunctive treatments for intrauterine adhesions following lysis. *Int J Gynaecol Obstet* 2003;82:49-56.
- Amer MI, ABD-EL Maeboud KH. Amnion graft following hysteroscopic lysis of intrauterine adhesions. *J Obstet Gynaecol Res* 2006;32:559-66.
- Abbot J, Thomson A, Vancaillie T. Spray Gel following surgery for Asherman's syndrome may improve pregnancy outcome. *J Obstet Gynaecol* 2004;24:710-1.
- Fumino T, Teranishi A, Wakimoto E, Hamai H, Kuwata A, Shigeta M. Early second-look flexible hysteroscopy is effective for the treatment of Asherman's syndrome. *Ferti Steril* 2007;88(Suppl 1):S224.
- Colacurci N, Fortunato N, Nasto R, Male D, Errico D, De Francis P, et al. Reproductive outcome of hysteroscopic lysis of intrauterine adhesions. *Ital Minerva Gynaecol* 1997;49:325-7.

Cite this article as: Gaya SA, Adamu IS, Yakasai IA, Abubakar S. Review of intrauterine adhesiolysis at the Aminu Kano Teaching Hospital, Kano, Nigeria. *Ann Afr Med* 2012;11:65-9.
Source of Support: Nil, **Conflict of Interest:** None declared.