"AN ANALYSIS OF IUCD REMOVAL UNDER ANAESTHESIA IN A TERTIARY CARE CENTRE – A COMBINED RETROSPECTIVE AND PROSPECTIVE STUDY"

This dissertation submitted to

The Tamil Nadu Dr. M.G.R Medical University in

partial fulfilment of the requirement for the award of

MS BRANCH II

OBSTETRICS AND GYNAECOLOGY

REGISTER NO.: 221916869

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

MADRAS MEDICAL COLLEGE

CHENNAI - 600003

MAY 2022

CERTIFICATE

This is to certify that this dissertation titled **— "AN ANALYSIS OF IUCD REMOVAL UNDER ANAESTHESIA IN A TERTIARY CARE CENTRE – A COMBINED RETROSPECTIVE AND PROSPECTIVE STUDY"** is a bonafide work of DR.K.KAVITHA, and has been prepared under my guidance, in partial fulfillment of regulations of The Tamilnadu Dr. M.G.R. Medical University, for the award of M.S. Degree in Obstetrics and Gynecology during the year 2019 - 2022.

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PLACE: **DATE:**

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation / thesis entitled **— "AN ANALYSIS OF IUCD REMOVAL UNDER ANAESTHESIA IN A TERTIARY CARE CENTRE – A COMBINED RETROSPECTIVE AND PROSPECTIVE STUDY"** is a bonafide and genuine research work carried out by me under the guidance of **ASSOCIATE PROFESSOR DR.J.SRIMATHI MD ,DGO .,**Department of Obstetrics and Gynecology, MADRAS MEDICAL COLLEGE, Chennai.

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ACKNOWLEDGEMENT

On completion of this contribution of scientific document it gives me deep pleasure to acknowledge the guidance provided by my distinguished mentors.

With privilege and respect I like to express my gratitude to my guide, **ASSOCIATE PROFESSOR DR.J.SRIMATHI, MD., D.G.O.,** Professor, Department of Obstetrics & Gynaecology, **Institute of Obstetrics and Gynaecology, Madras Medical College & Government General Hospital, Chennai** for her constant support & guidance in doing this study.

I am forever grateful to my **DIRECTOR AND PROFESSOR Dr. S.VIJAYA, M.D., D.G.O ,** Director, Institute of Obstetrics and Gynaecology, Madras Medical College, Egmore, Chennai for her valuable support & guidance in doing this study.

I thank all my Unit Chiefs, Assistant Professors and all faculty members in Department of Obstetrics & Gynaecology for their timely advice and support.

I am thankful to **Prof. Dr.E.Theranirajan,** MD.,DCH.,MRCPCH(UK).,FRCPCH(UK) **Dean**, Madras Medical College for permitting me to conduct this study in this esteemed Hospital and Institution.

I express my gratefulness and my gratitude to my **CO-POSTGRADUATES** who helped me immensely during the course of my study.

Last but not the least, I convey my heartfelt gratitude to all the patients participated in this study

Dr. K.KAVITHA

MS OBSTETRICS AND GYNAECOLOGY ,

IOG , EGMORE.

TABLE OF CONTENTS

INTRODUCTION

Since the advent of intrauterine devices, it is widely employed as a long term method of contraception. It is a popular method of contraception and a study in 1995 showed that around 106 million subjects used IUD[1]. The first modern devices were marketed in 1960s. They were Lippes loop and Margulies. It was synthetic and did not have any biologic interaction with the tissues. The efficacy of the device was enhanced by the use of elemental copper. This helped in reducing the overall size of the device. One major advantage of incorporation of copper was that the side effects associated with synthetic device was minimal especially bleeding and pain. However, the birth control effects were unaffected. The first generation IUDs were TCu-200, Cu-7. This device has the drawback of requiring replacement once in few years. The resultant effect was the discovery of devices like;

1. TCu-380A
2. TCu-220C
3. Nova-T
4. Multiload 375

In 1970s, IUDs that release hormones were developed[2].

IUDs have the following benefits:

- The IUDs have very low failure rates compared to other techniques of reversible contraception methods.
- It is safe
- Have low risk of STI acquisition

The most commonly used is the TCu380A. It has the following features;

a) Approved by FDA in 1994
b) It has a life of 10-years

Studies show that IUDs have a low conception rate of 2.1% in a 10-year study[3].

In spite of the success of IUD, the continuity of using this device has been under study. WHO reported that the continued use of TCu-380A in a 7-year period was 44%[2]. The rate of continued use was however similar to or better than other methods of contraception[4,5].

This study aimed to explore the baseline demographic characteristics, reasons for IUCD removal in patients, the best period for IUCD insertion and the most suited patients for IUCD insertion.

AIMS AND OBJECTIVES

Following are the aim and objectives of the study:

Aim

To analyse the following;

a) Baseline demographic characteristics
b) Reasons for IUCD removal in patients
c) The best period for IUCD insertion
d) The most suited patients for IUCD insertion.

Objective

To analyse the patients who came for IUCD removal under anaesthesia in the past one year

REVIEW OF LITERATURE

History[6]

Intrauterine contraceptive devices (IUCDs) are an effective, reversible and long-term method of contraception which does not require replacement for long periods and does not interfere with sexual activity. IUCDs are commonly made of polyethylene and impregnated with barium sulphate to render them radio opaque so as to render them easily detected by radiograph or ultrasound. Medicated devices which contain copper, progesterone hormone and other pharmacologic agents have also been introduced.

The history of intrauterine devices back to early 1900s. The first IUCD was developed by a German physician, Richard Ritcher of Waldenburg. Another German physician, Ernst Grafenberg created the first Ring IUCD made of silver filaments. A Japanese doctor named Tenrei Ota also developed a silver or gold IUD called the Precea or pressure ring.

Jack Lippes helped begin the increase of IUCD use in the United States in the late 1950s. During this time, thermoplastics which can be bent for insertion and retain their original shape became the material used for first generation IUCDs.

Embryology and genetics[7-12]

The sex of a child is determined by the chromosome. There is a 23rd pair of chromosome that is inherited and the gender determining chromosome is in the father's sperm. It develops from four parts;

a) Mesoderm

b) Primordial germ cells

c) Coelomic epithelium

d) Mesenchyme

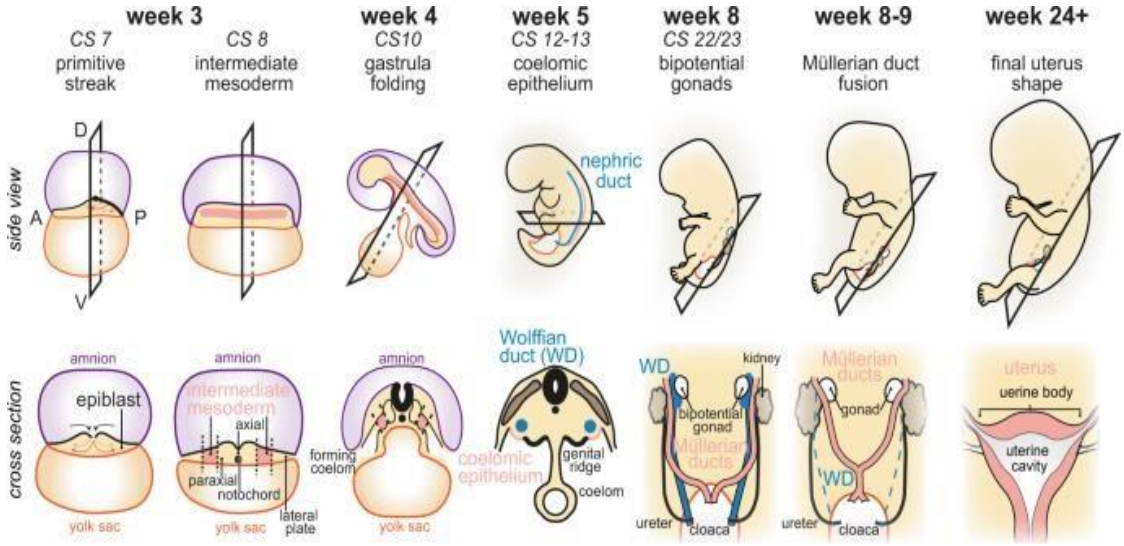


Image 1: Embryology of uterus

It is essential for a gynaecologist to understand the organogenesis of uterus. Uterus is formed from the Mullerian organogenesis along with the cervix, fallopian tubes and vagina.

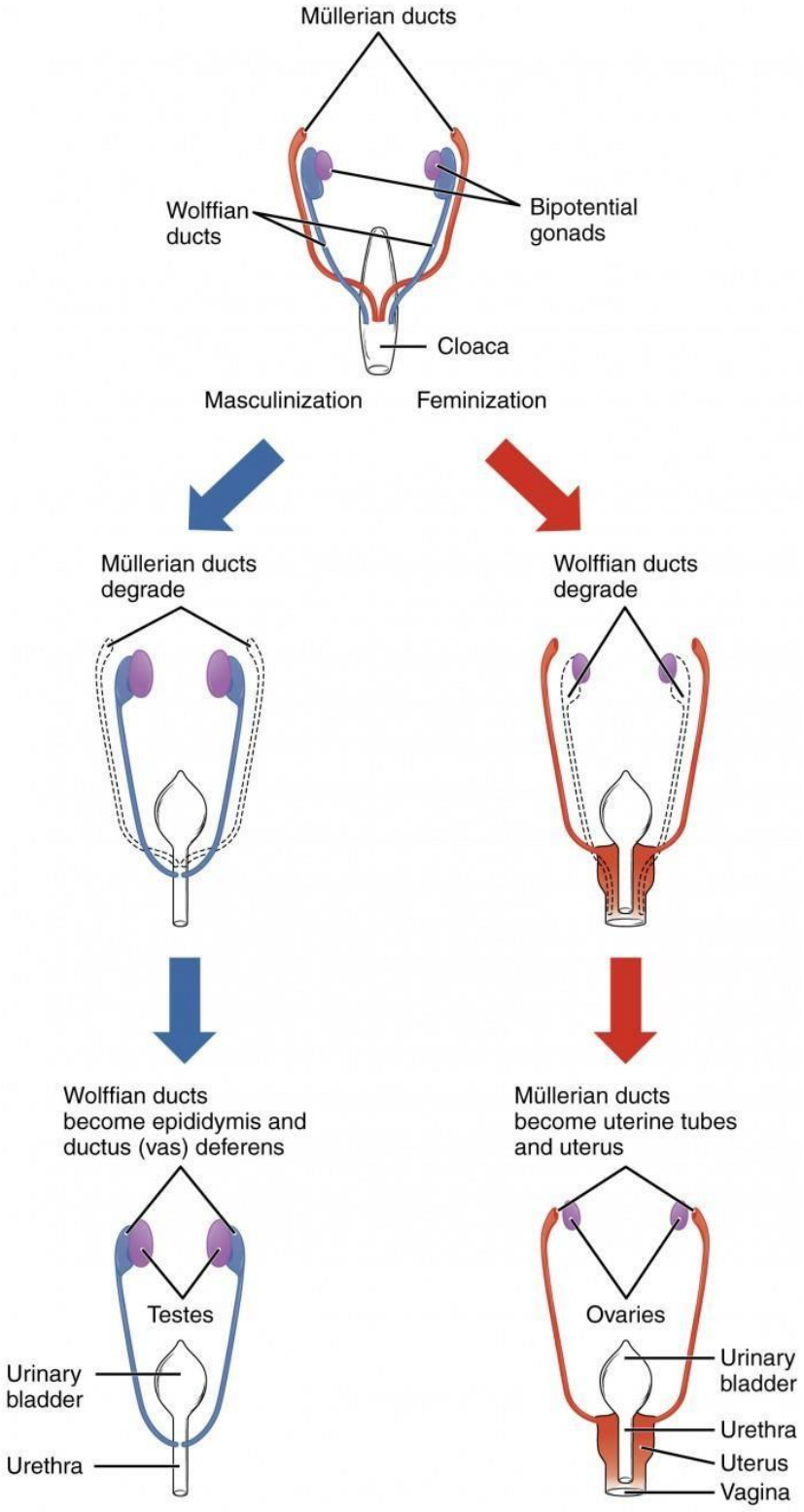


Image 2: Role of Mullerian and Wolffian ducts

Congenital anomalies of the uterus

One of the challenges in IUD insertion is while certain aberrations from the normal anatomy.

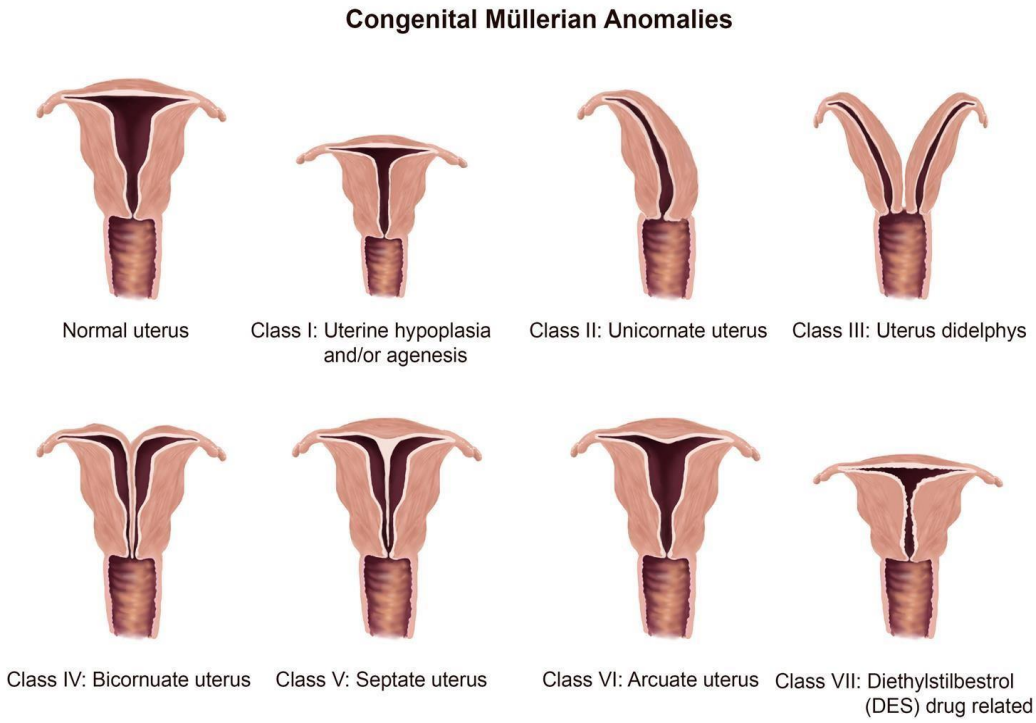


Image 3: Congenital anomalies of the uterus

The congenital anomalies of the uterus are classified into the following types given by the American fertility association:

a) Class I: Hypoplasia/uterine hypoplasia. (Mayer Rokitansky Kuster Hauser syndrome)
b) Class II: Unicornuate uterus
c) Class III: Uterus didelphys.
d) Class IV: Bicornuate uterus

e) Class V: Septate uterus

f) Class VI: Arcuate uterus

g) Class VII: T-shaped uterus resulting from the exposure to Diethylstilbestrol in fetal life

It is therefore essential to test the anatomy of the uterus using an ultrasound to assess the presence of any anomalies. Better sensitivity and specificity is seen with MRI.

Gross anatomy of uterus

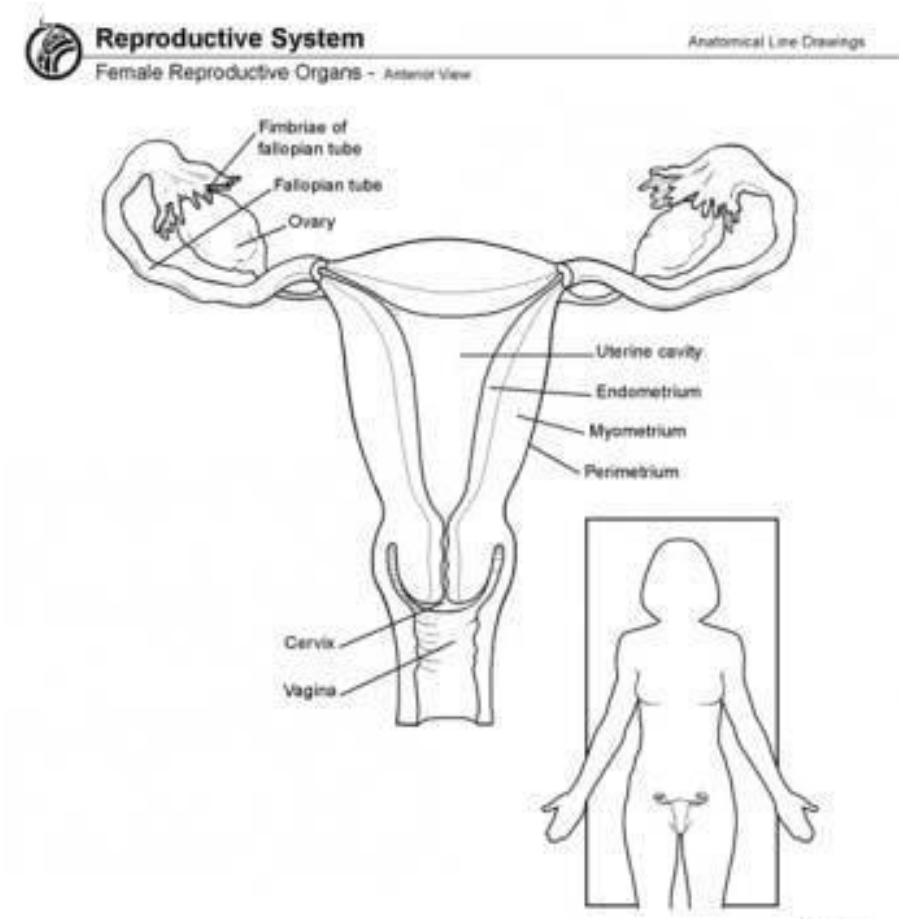


Image 4: Gross anatomy of uterus

There are the following parts in the uterus;

- Uterine cavity
- Fallopian tubes
- Ovary

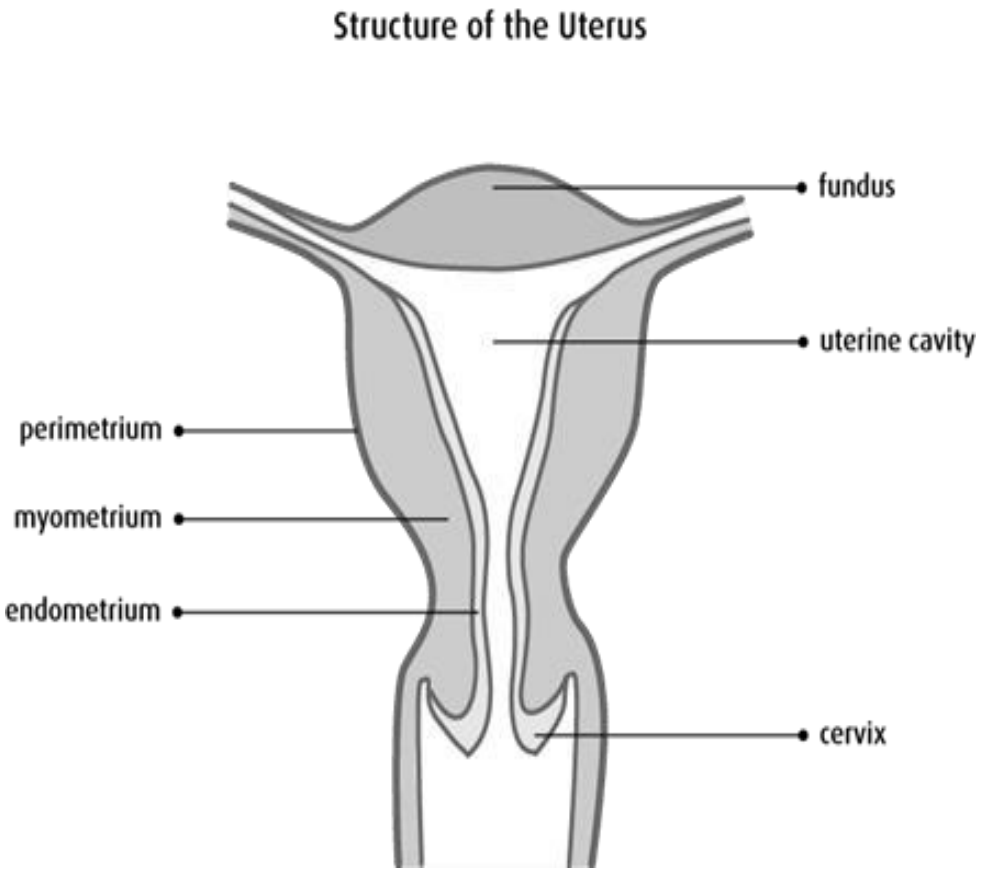


Image 5: Layers of the uterine wall

The uterine wall has the following layers;

- Endometrium
- Myometrium
- Perimetrium

The cells present in the endometrium and myometrium are different.

In the myometrium, there are smooth muscle fibres that help in contraction.

Endometrial glands are columnar.

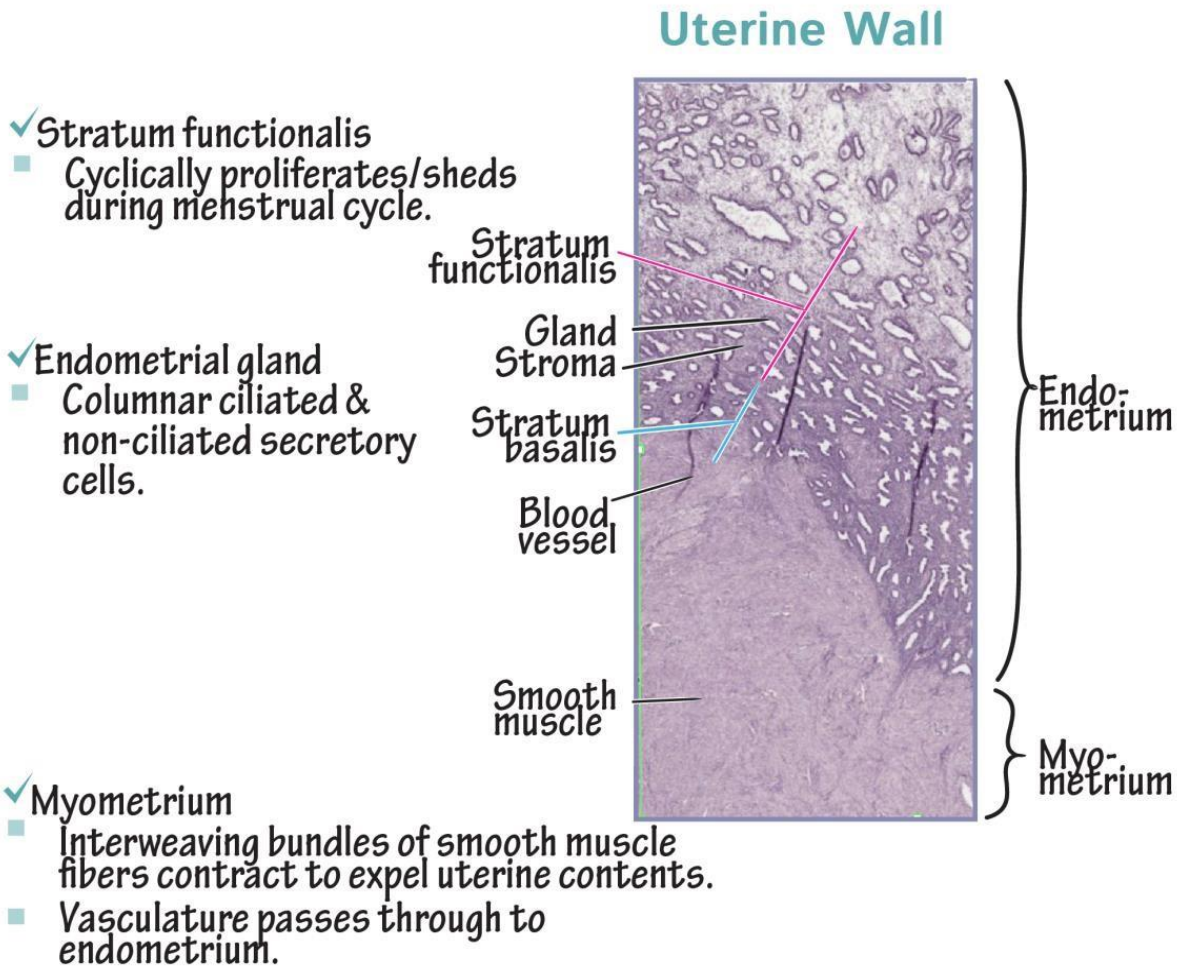


Image 6: Uterine wall

Blood supply of the uterus

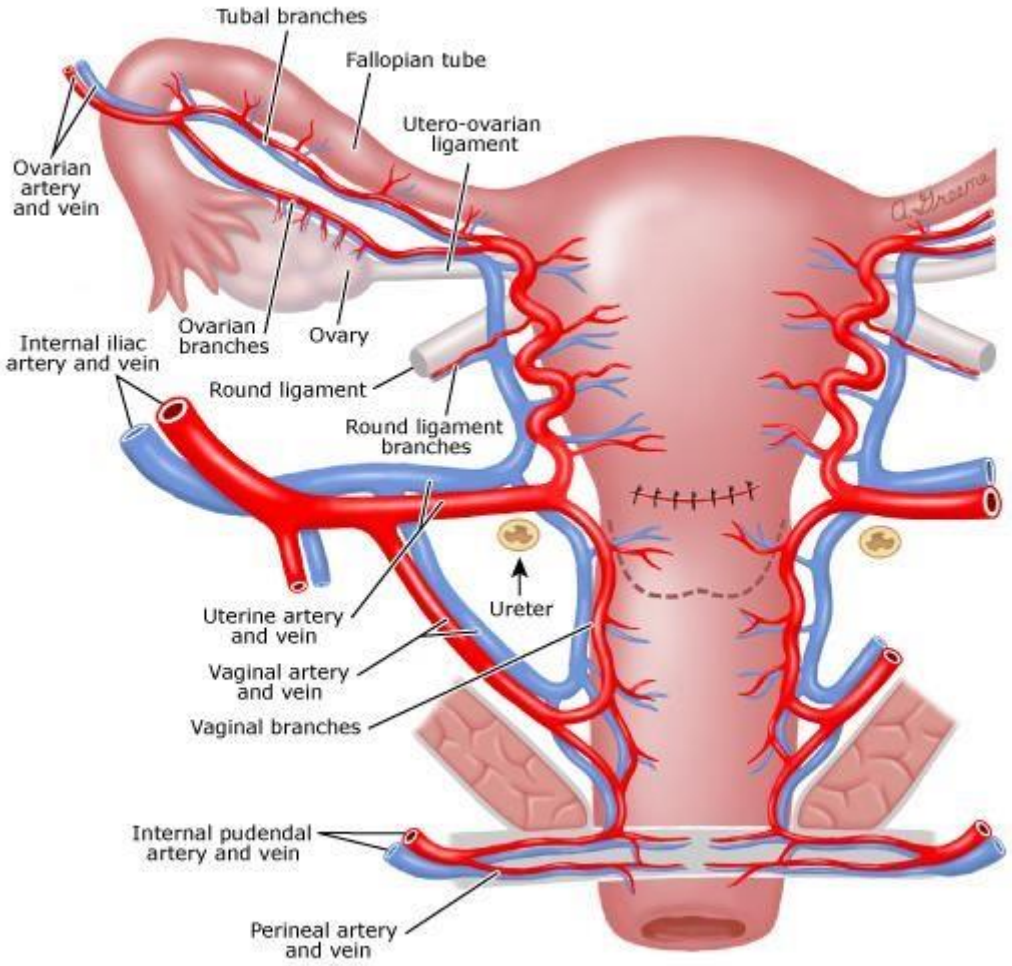


Image 7: Blood supply of the uterus

Uterus is supplied by the uterine artery and drained by corresponding veins.

Lymphatic drainage of the uterus

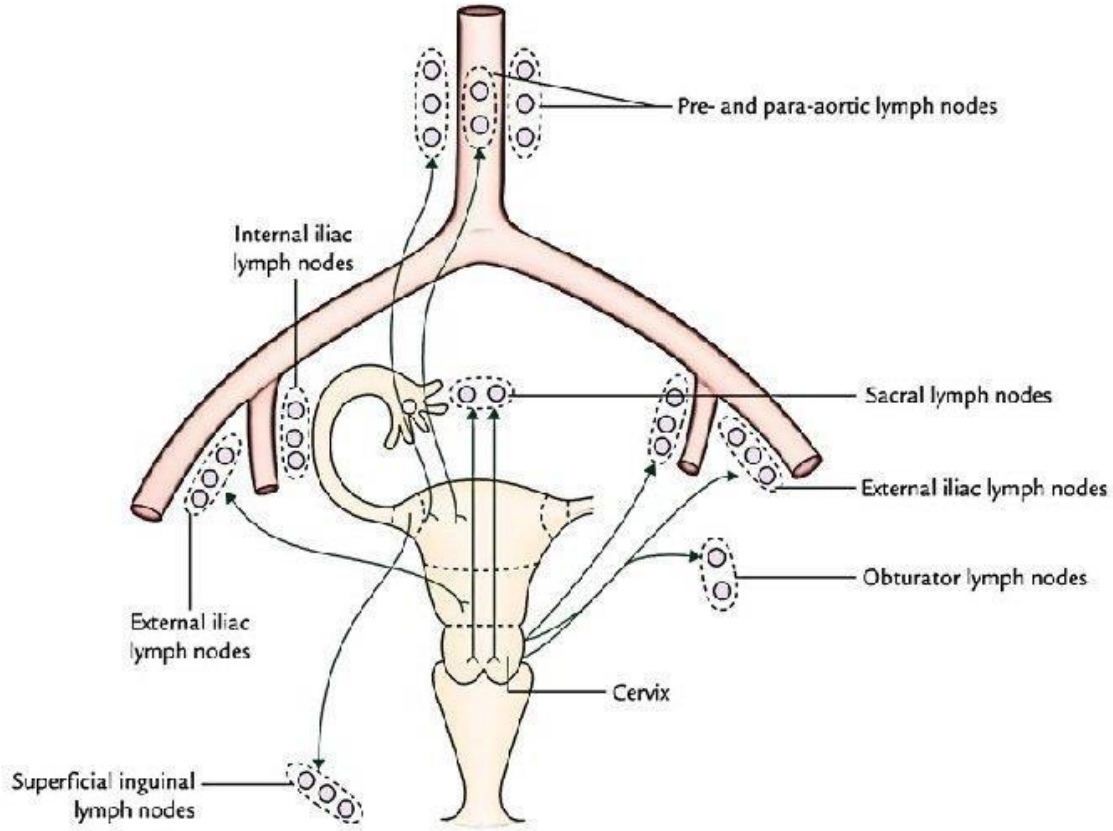


Image 8: Lymphatic drainage of the uterus

The uterus is drained by the following lymph nodes;

a) External iliac lymph nodes

b) Internal iliac lymph nodes

c) Superficial inguinal lymph nodes

d) Obturator lymph node

Nerve supply of the uterus

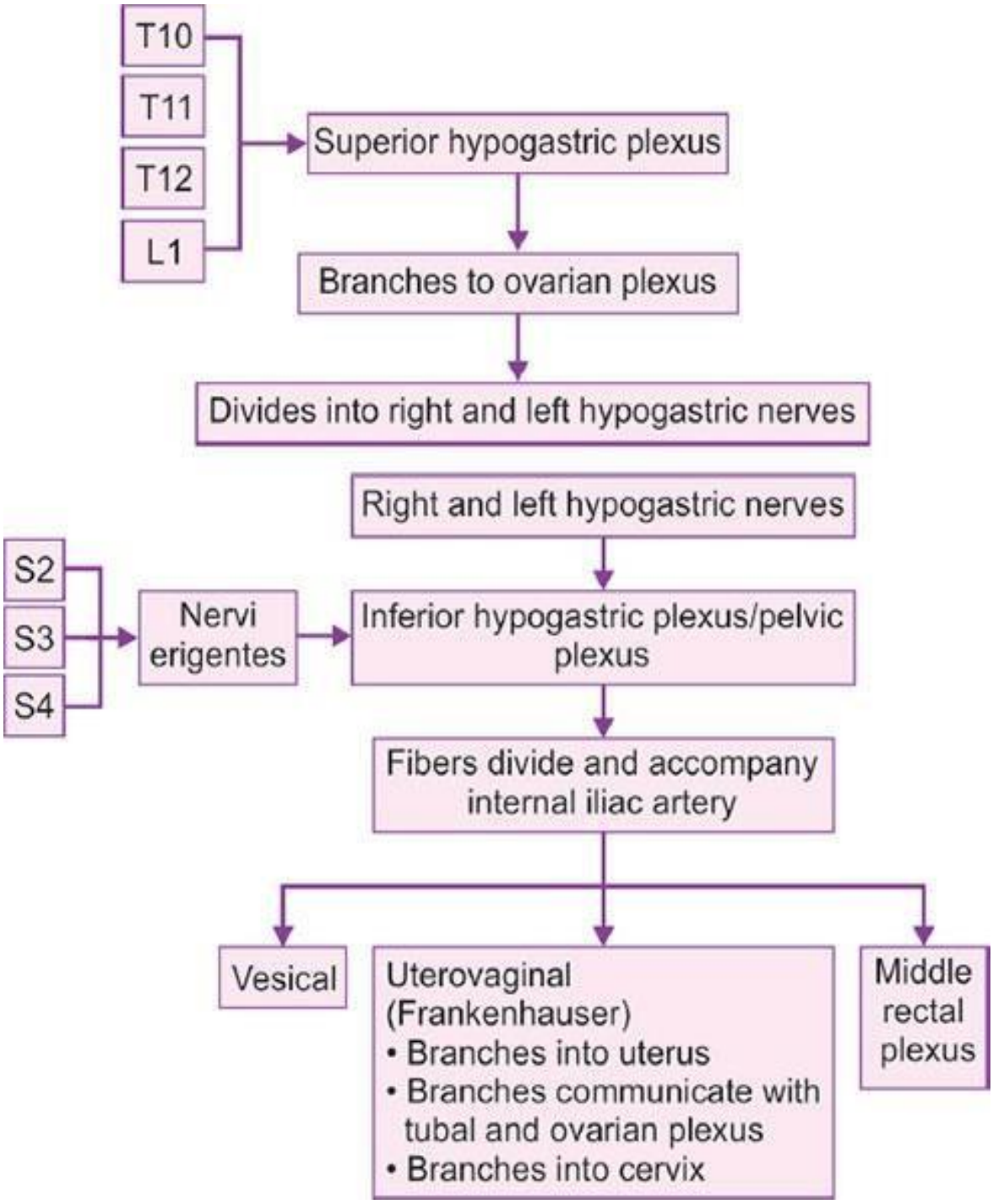


Image 9: Nerve supply of the uterus

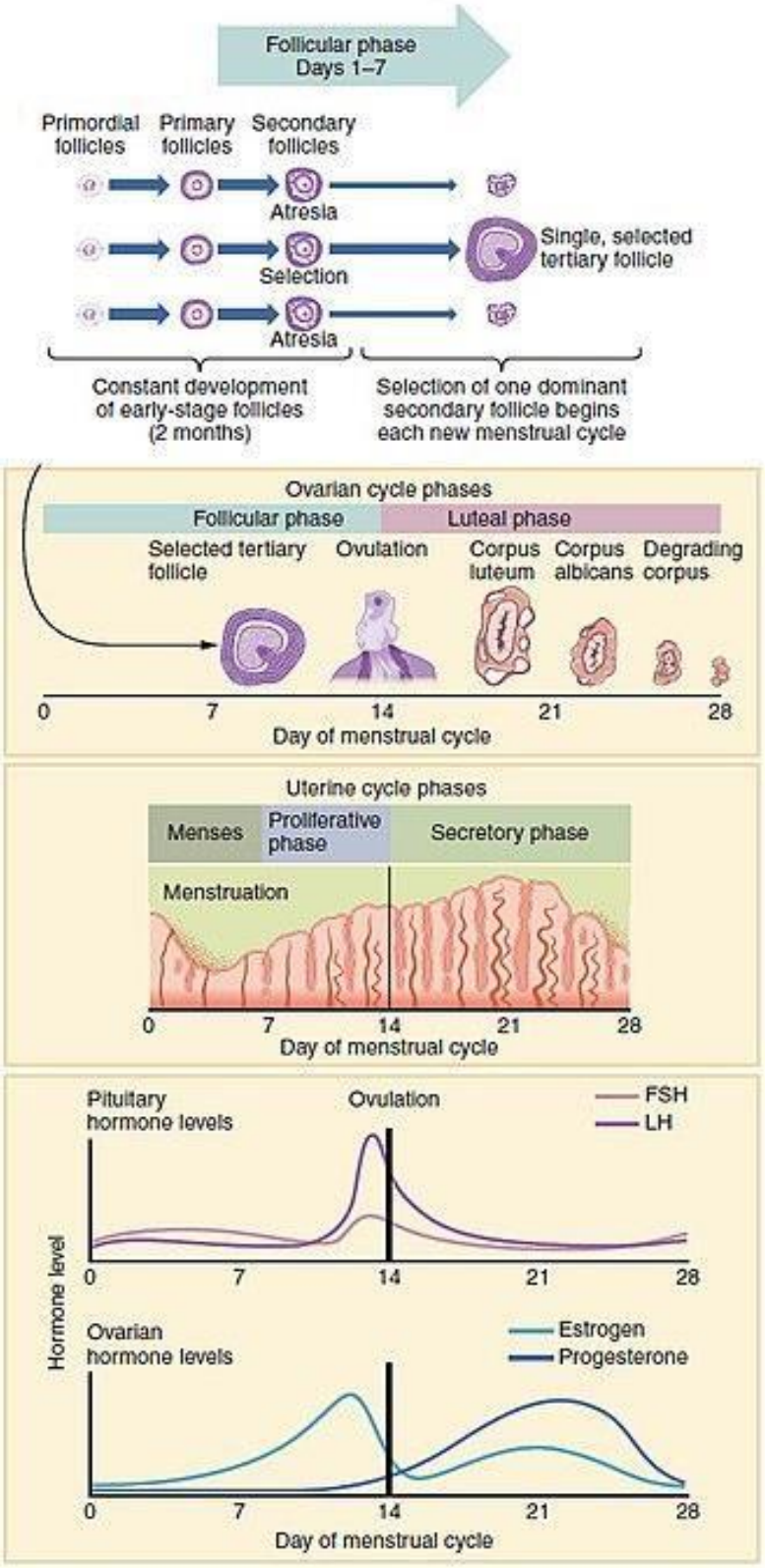


Image 10: Normal menstrual cycle

TYPES OF IUCDs:

There are four types of IUD used

- First generation
- Second generation
- Third generation
- Fourth generation

"Intrauterine devices and the contraceptive implant should be offered routinely as safe and effective contraceptive options for nulliparous women and adolescents."
" The American Academy of Pediatrics and The American College of Obstetricians and Gynecologists endorse the use of LARC, including IUDs, for adolescents."

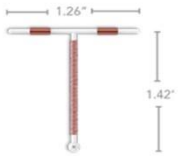
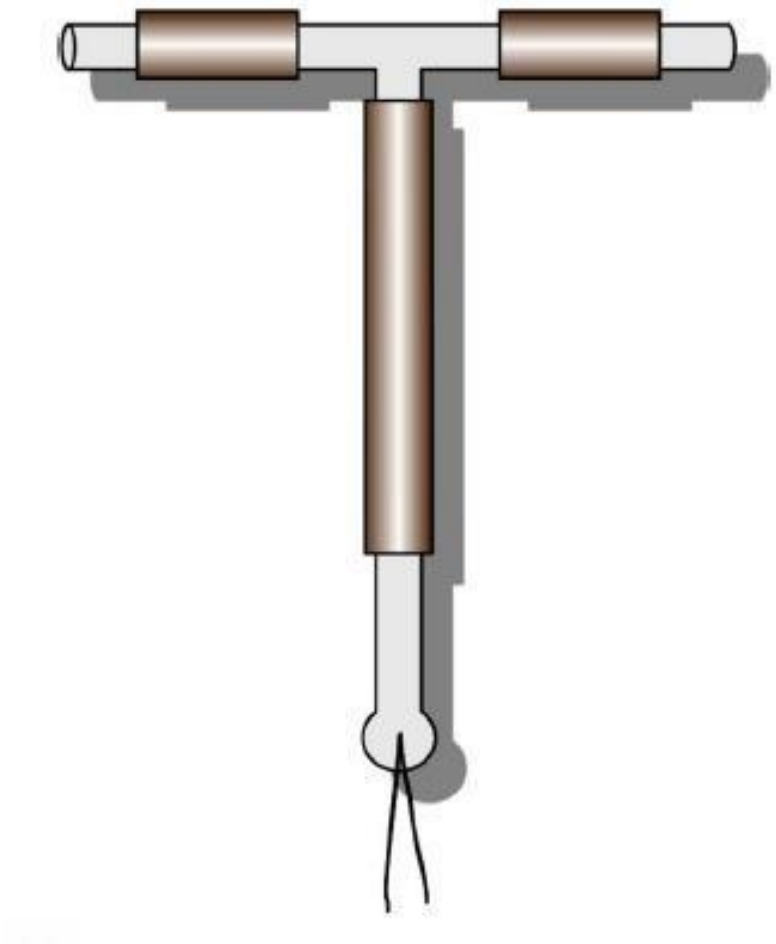
	Intrauterine Devices (IUD)				
	Levonorgestrel IUD				Copper IUD
	Mirena	**Liletta**	**Skyla**	**Kyleena**	**Paragard**
					
FDA Approval Date	2000	2015	2013	2016	1988
Approved for (Acceptable duration of use)	5 years (7 years)	5 years (7 years)	3 years	5 years	10 years (12 years)
Total Hormone	52 mg	52 mg	13.5 mg	19.5 mg	N/A
Changes in menses	Irregular bleeding initially, decreases over time				Heavier period, longer duration, more cramps
Notable characteristics	▪ String color: Brown ▪ FDA-approved for treatment of heavy menstrual bleeding	▪ String color: Blue ▪ Reloadable	▪ String color: Brown ▪ Silver ring visible on ultrasound	▪ String color: Blue ▪ Silver ring visible on ultrasound ▪ Smallest 5-year IUD	▪ String color: White ▪ Can be used as emergency contraceptive
Cumulative efficacy over approved period of use	99.3%	99.27%	99.1%	98.6%	>99%
Quick Resources:	www.bedsider.org https://www.acog.org/-/media/Departments/Government-Relations-and-Outreach/FactsAreImportantEC.pdf				

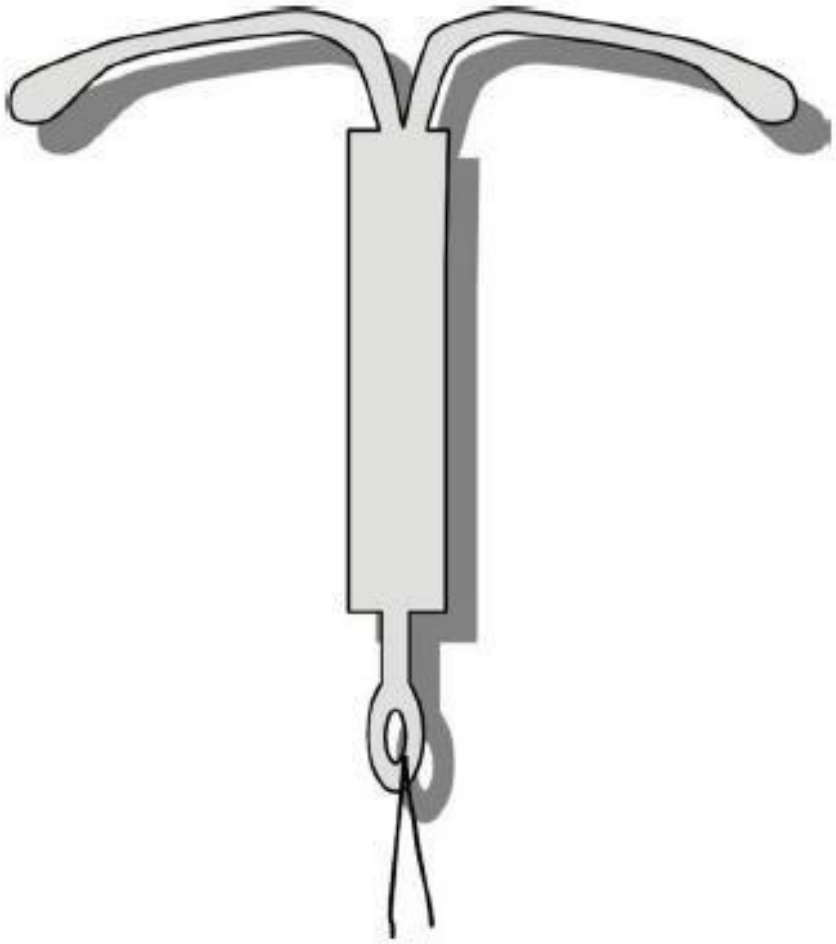
Image 11: IUCD

First generation IUCDs are those which do not release anything drug. Introduced in 1962, they were in the shape of a plastic double loop that closely fit within the uterine cavity, reducing the incidence of expulsion. They were commonly used between 1960s and 1980s.

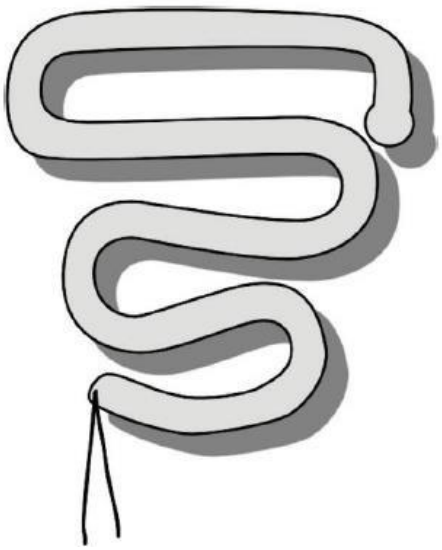


A. T-shaped TCu-380A copper IUD exposes copper on both the stems and the arms.

Second generation IUCDs were introduced in the 1970s and 1980s. They have copper added to the and included NOVA T and Multiload 250.

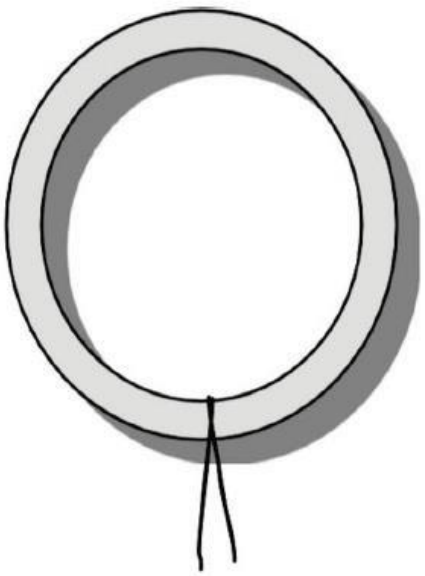


B. Levonorgestrel-releasing IUD is also T-shaped.



C. Double "S"- shaped Lippes loop IUD was commonly used in the 1960s to 1980s.

Third generation IUCDs are commonly in use at present and include copper T 380 A, copper T 380s , Copper T 380Ag , Copper safe 300 and levonorgestrel releasing IUCD. The levonorgestrel containing IUCD is known as MIRENA which releases levonorgestrel at the rate of 20 micrograms/day.



D. Stainless steel ring was used primarily in China before 1993.

Tools needed for insertion of IUD

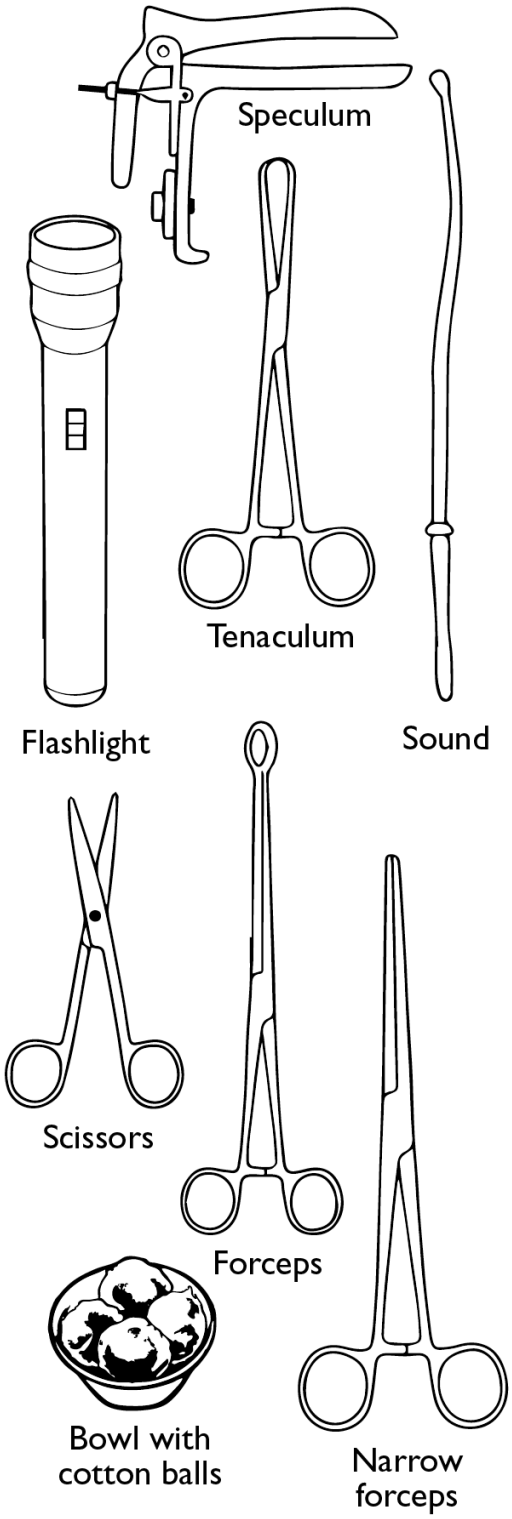


Image 12: Tools needed for IUD insertion

Steps of inserting an IUD

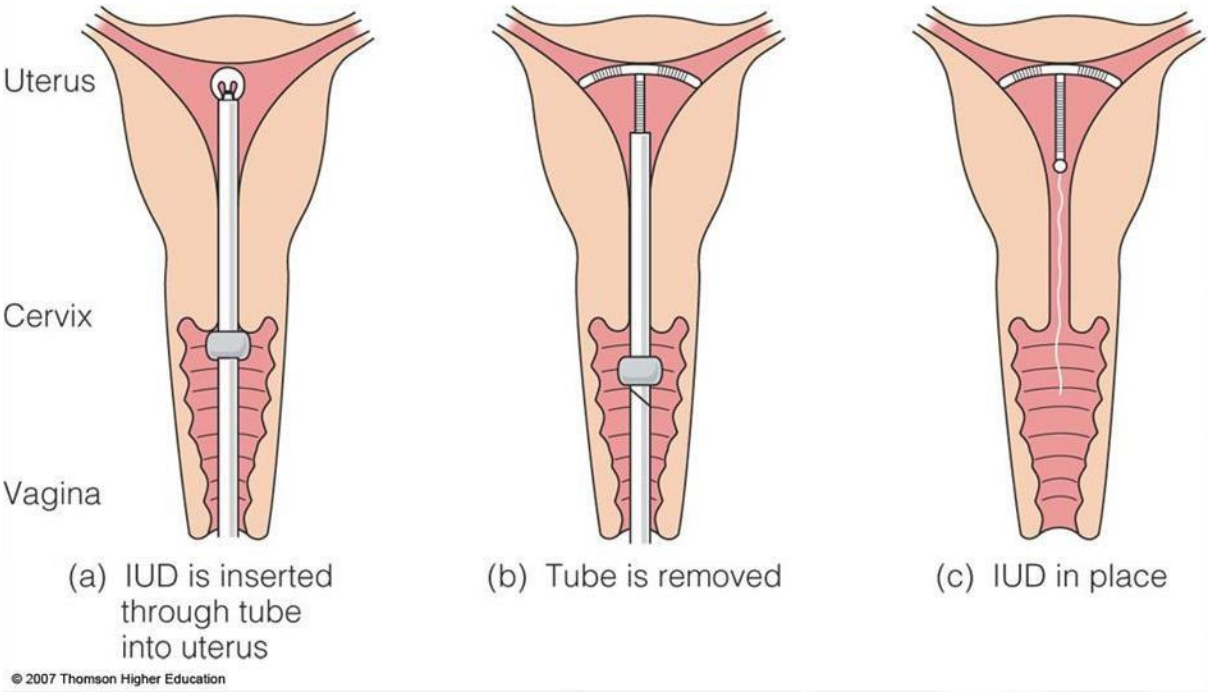


Image 13: Steps of inserting an IUD

Normal positioning of IUD

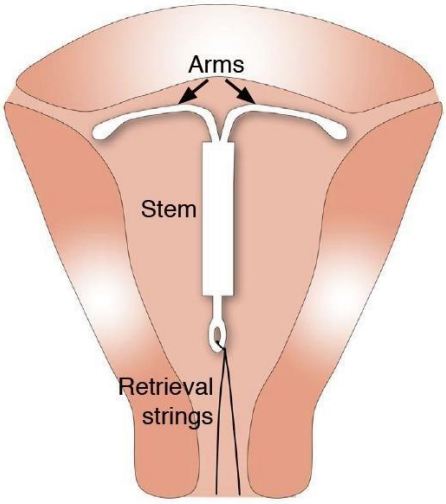


Image 14: Normal positioning of IUD

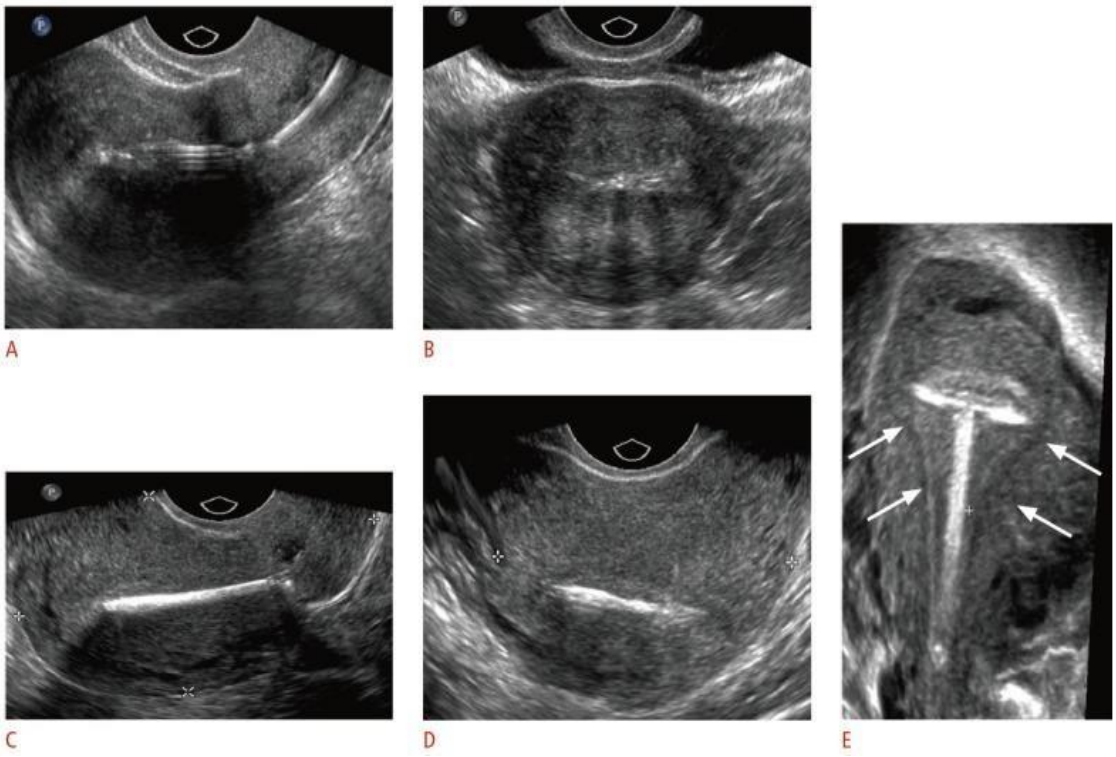


Image 15: **Transvaginal ultrasonographic appearance of T-shaped intrauterine devices (IUDs).**

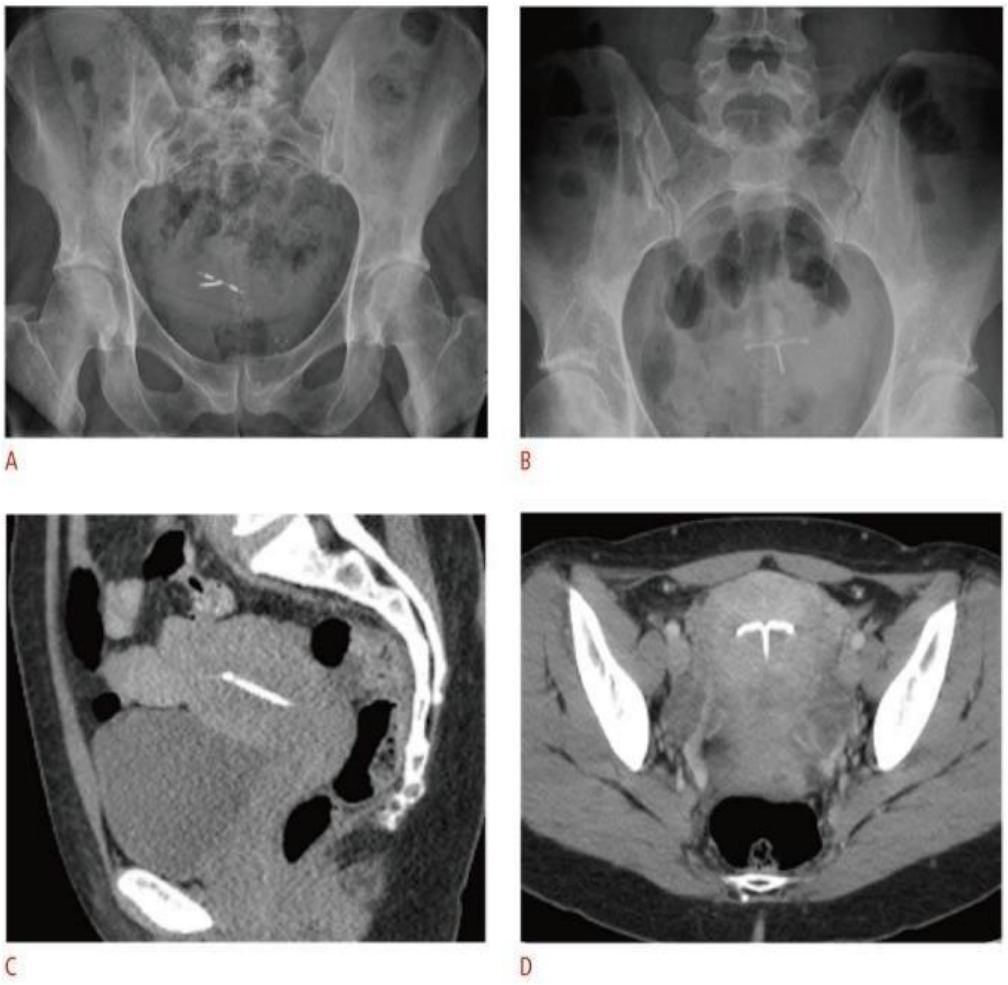


Image 16: **Radiographic and computed tomographic (CT) appearance of the T-shaped intrauterine device (IUD).**

Fig. 1: The factors affecting the severity of pain during IUD insertion.

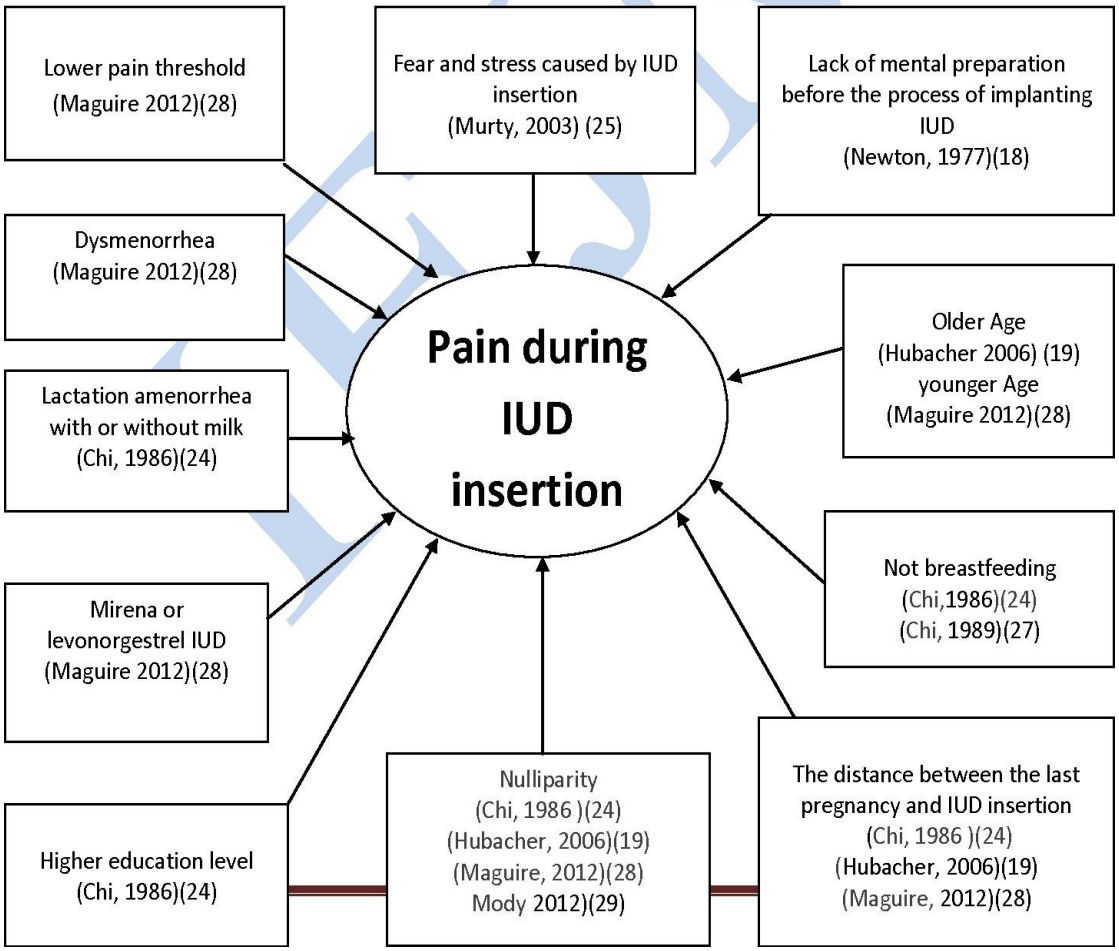


Image 17: Pain during IUD insertion

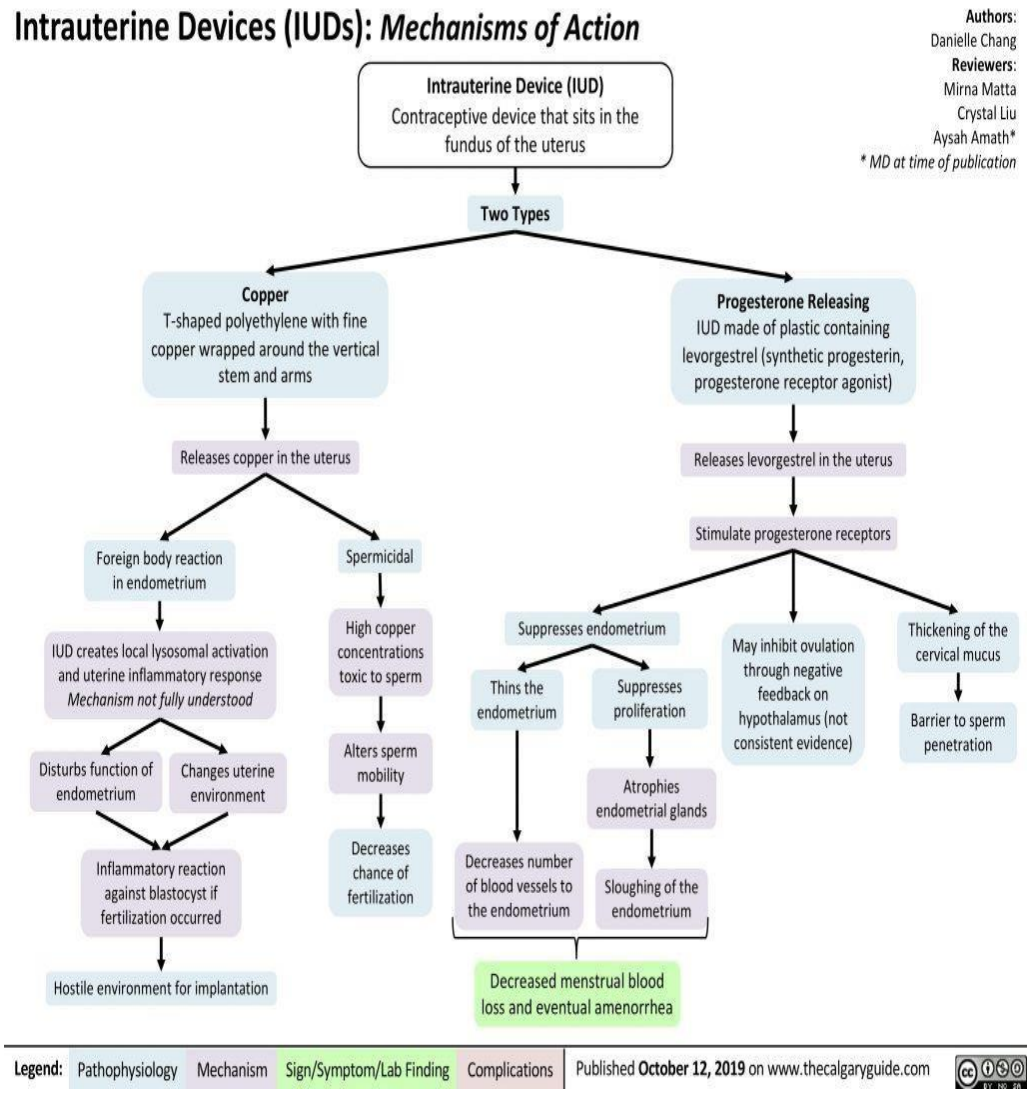


Image 18: Mechanism of action of IUD

Malpositioned IUD

Types of malpositioned intrauterine devices

Malposition	Definition
Expulsion	Passage either partially or completely through the external cervical os
Displacement	Rotation or inferior positioning in the lower uterine segment or cervix
Embedment	Penetration of the myometrium without extension through the serosa
Perforation	Penetration through both the myometrium and the serosa, partially or completely

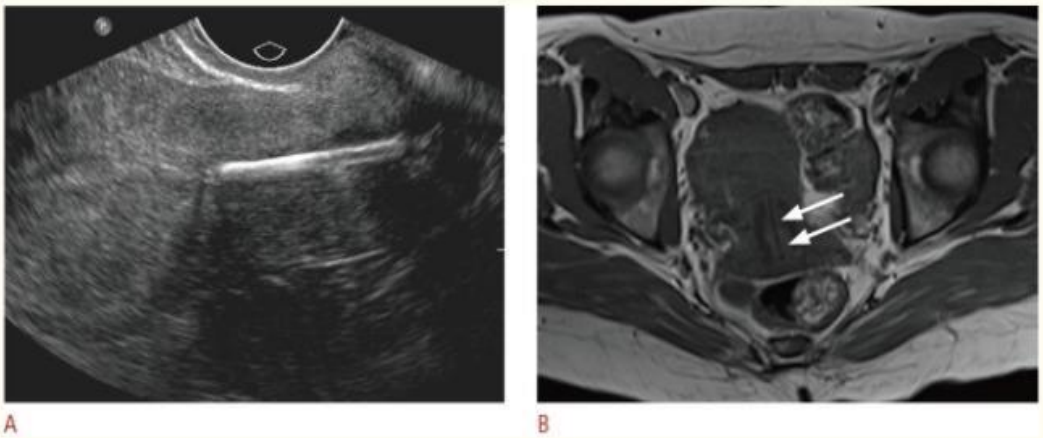


Fig. 5.

Incidentally detected displaced intrauterine device (IUD) in a 38-year-old female.

A. Sagittal transvaginal sonogram demonstrates the echogenic IUD stem within the cervix. B. Axial T1-weighted magnetic resonance image shows the low-signal IUD stem within the cervix (arrows).

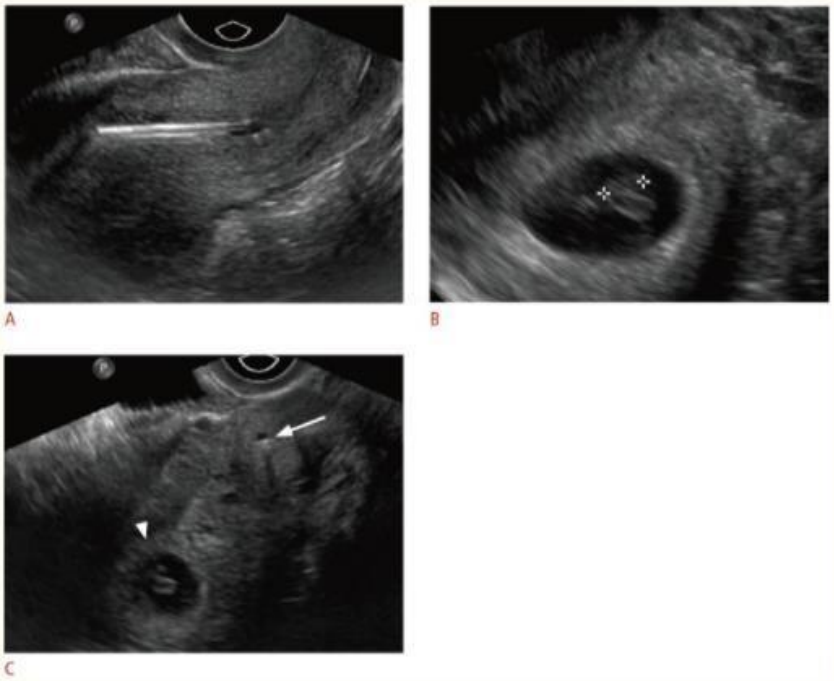


Fig. 6.

Displaced intrauterine device (IUD) in a 23-year-old female with positive pregnancy test despite IUD.

A. Sagittal transvaginal sonogram shows malpositioned IUD within the lower uterine segment and cervix. B. An intrauterine pregnancy is seen within the uterine fundus. C. Transverse transvaginal sonogram shows the relationship between the low-lying IUD within the cervix (arrow) and the gestational sac within the uterine fundus (arrowhead). The IUD was removed without incident. The pregnancy resulted in a normal, full-term delivery without adverse complications.

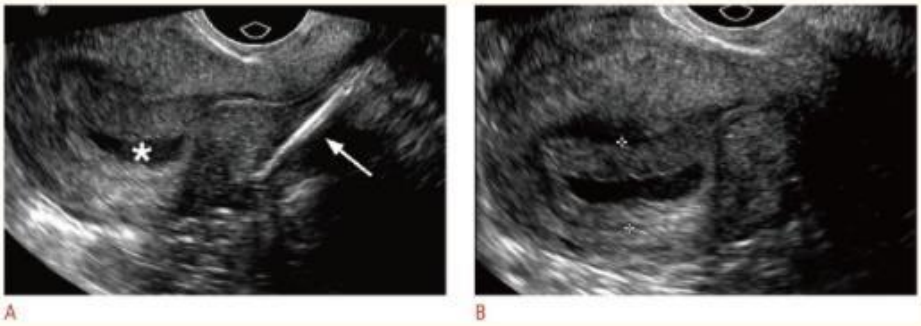


Fig. 7.

Displaced and embedded intrauterine device (IUD) with early pregnancy in a 24-year-old female with acute abdominal pain and positive pregnancy test.

A. Sagittal transvaginal sonogram shows the IUD stem displaced within the lower uterine segment and embedded in the posterior myometrium (arrow) and a gestational sac in the uterine fundus (asterisk). B. Zoomed in transvaginal sonogram of the gestational sac clearly shows a double decidual sac sign (between crosshairs). Rising human chorionic gonadotropin (β-HCG) was consistent with pregnancy, although the outcome of the pregnancy is unknown.

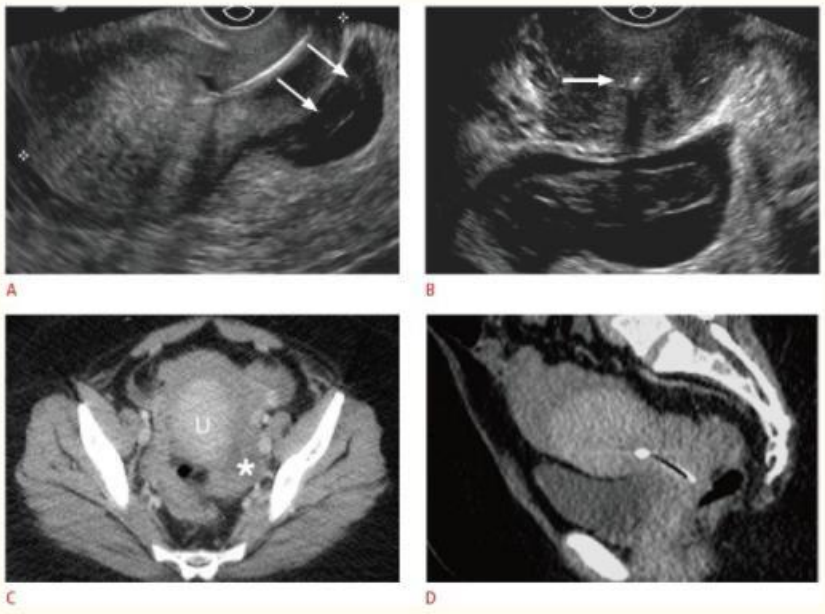


Fig. 8.

Displaced intrauterine device (IUD) with ruptured ectopic pregnancy in a 33-year-old female having acute pelvic pain.

A. Sagittal transvaginal sonogram shows the IUD positioned almost entirely within the cervix with a complex fluid collection posterior to the cervix (arrows). B. Transverse transvaginal sonogram demonstrates internal complexity within the fluid collection, posterior to the IUD positioned within the cervix (arrow). The left ovary was not identified, and computed tomography (CT) was recommended for further evaluation. The pregnancy status was not known at the time. C, D. Axial (C) and (D) sagittal CT show a large amount of hemoperitoneum surrounding the uterus (U) and a complex structure in the left adnexa (asterisk). Human chorionic gonadotropin (β-HCG) level was 595 mIU/mL (normal, <3.0 mIU/mL), and the patient underwent emergent laparoscopy for ruptured tubal ectopic pregnancy.

Despite having many advantages, IUCDs may get impacted necessitating removal of the same. Also, some women might experience intolerable side effects and may seek the doctor for removal. The removal is based on the visibility of string during speculum examination. In cases where the string is not visible, hysteroscopic removal becomes necessary.

Removal of IUD algorithm

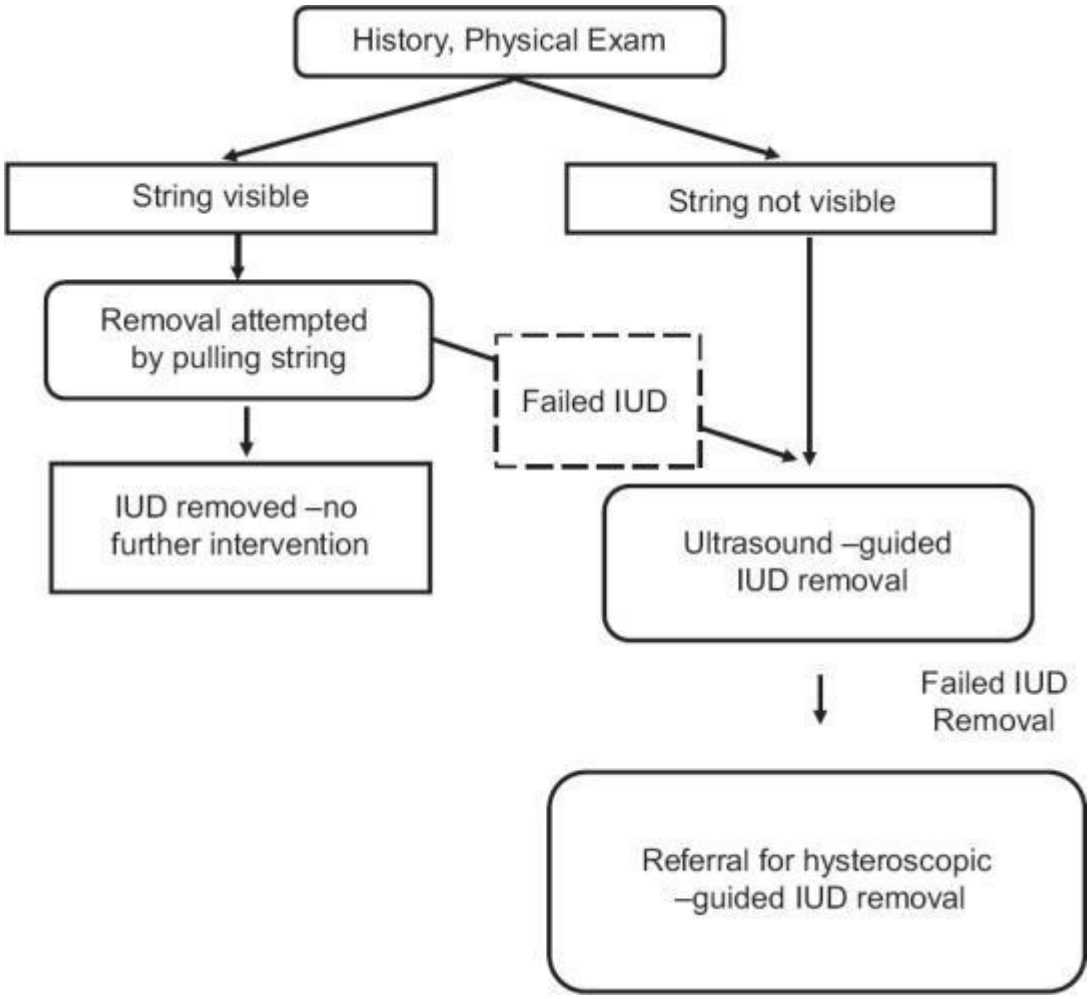


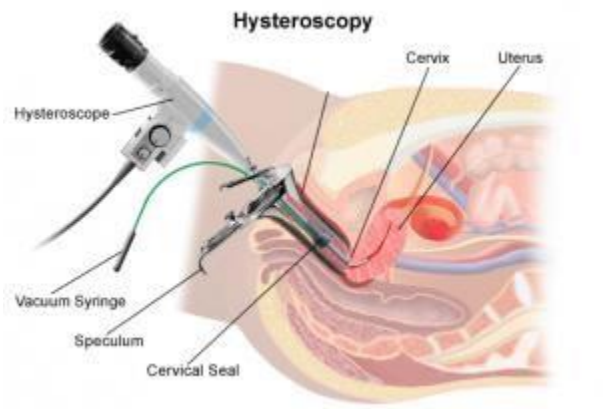
Image 19: IUD removal algorithm

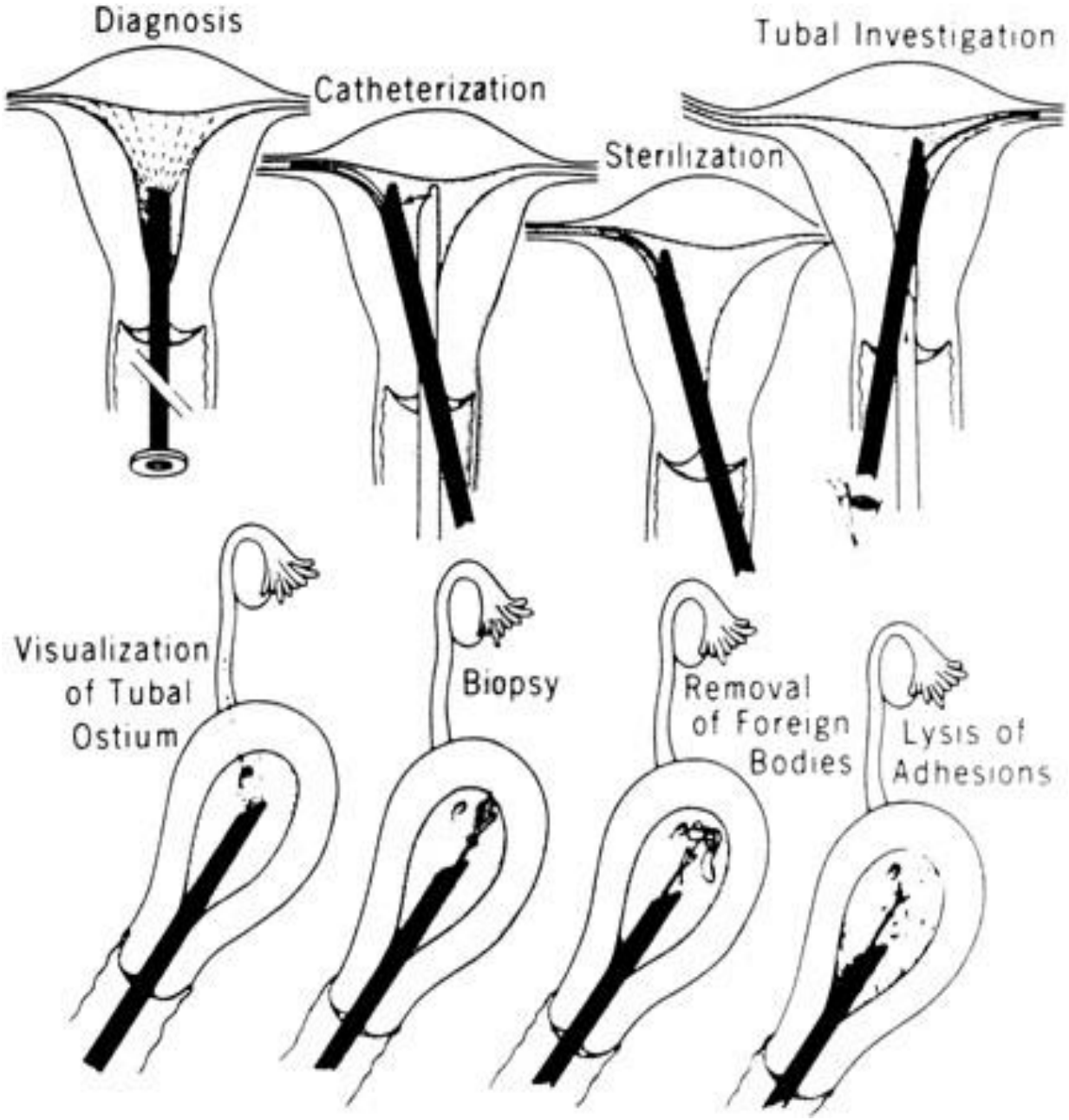
HYSTEROSCOPY:

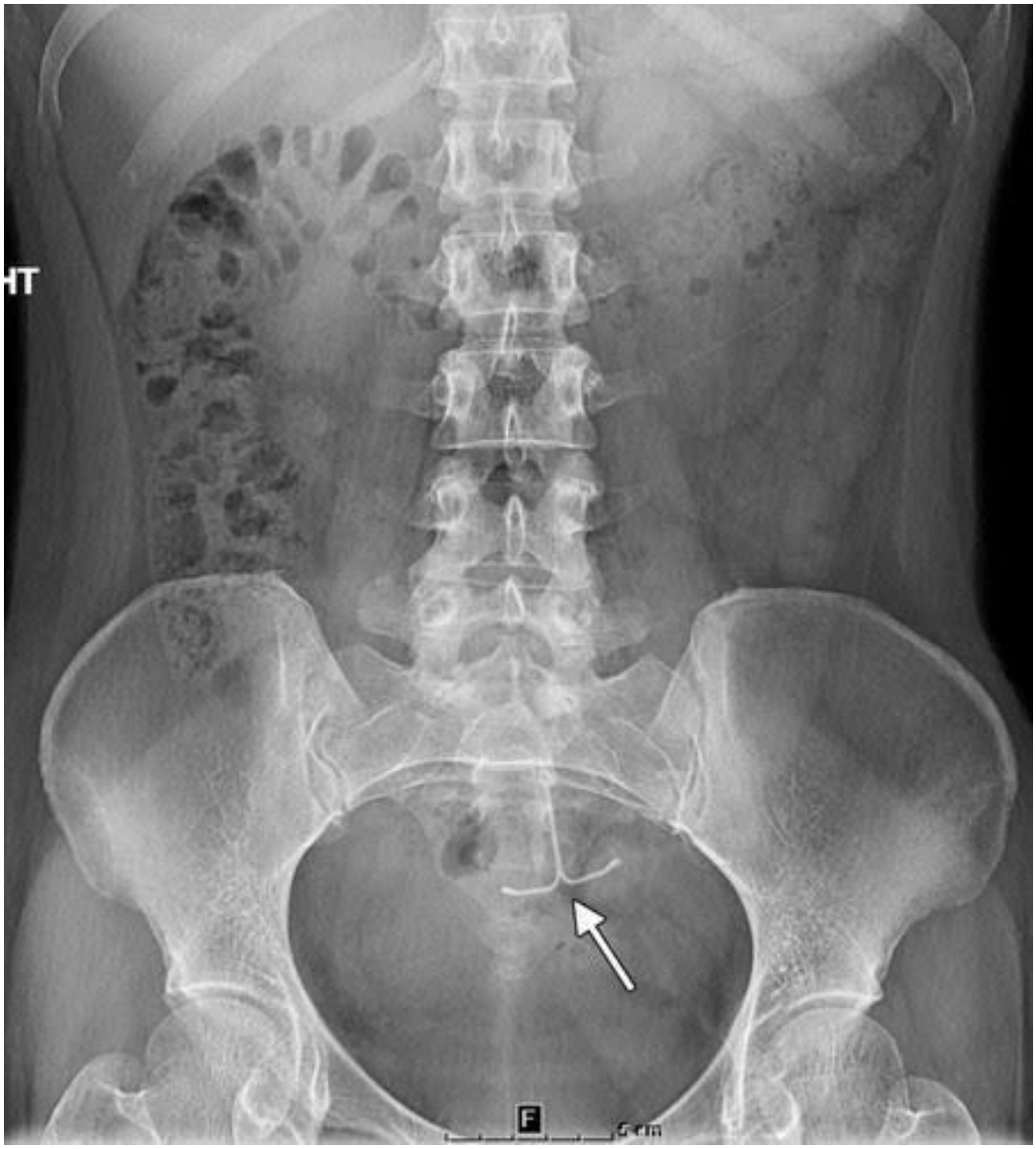
The development of hysteroscopy dates back to 1869. Philipp Bozzini developed the technique to visualize the cavities inside the human body.

A hysteroscopy is a device used to visualize the uterine cavity and endocervical canal, and it comprises an endoscope that carries optical and light channels for insufflation of the uterine cavity which helps to visualize the uterine cavity.

It consists of a sheath, camera, telescope with eyepiece, barrel and an objective lens. The sheaths are of two types – diagnostic sheath and operative sheath. Both of them allow space for telescope and medium except that the operative sheath will have bigger diameter than the diagnostic one thereby allowing space for inserting operative devices. Operative devices are resectoscope, alligator grasping forceps, biopsy forceps, scissors, morcellator, monopolar and bipolar electrodes.




Diagnosis
Catheterization
Sterilization
Tubal Investigation
Visualization of Tubal Ostium
Biopsy
Removal of Foreign Bodies
Lysis of Adhesions



Relevant literature

There are not many studies in India that have explored the reasons specifically from the clinical perspective. There are epidemiological

studies that have documented the removal with no specific insight into the mean duration of use of the device or the reason for removal.

There is a study from Turkey by Tugrul et al in 2004 that has similar objectives as the present study.

The findings from the study are graphically presented below.

Method of IUD removal

Method	$n=321$	%
With ring forceps	263	81.9
IUD string in the cervical canal[a]	7	2.2
IUD string broken	7	2.2
With alligator forceps[b]	44	13.7

[a] String not visualized but found in the cervical canal.
[b] Use of alligator forceps due to no string.

Reasons for IUD removal

Reason	$n=321$	%
No visible strings	33	10.3
No identifiable cause	41	12.8
IUD+pregnancy	16	5.0
IUD related complaints	50	15.6
Expired date of use	55	17.1
Dislocation	31	9.7
Desire for conception	51	15.9
Absence of need for contraception	44	13.7

Removed IUD types

IUD types	$n=321$	%
Nova-T	4	1.2
Multiload	10	3.1
Medusa	11	3.4
Lippes loop	19	5.9
TCu-380A	277	86.3

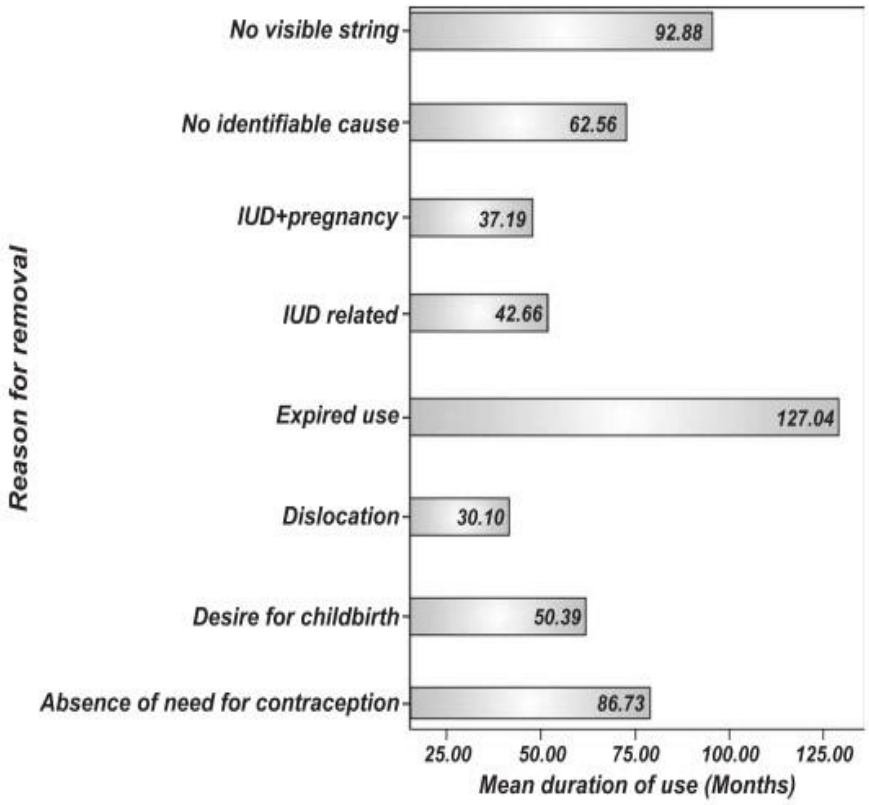


Fig. 1. Reason for removal vs. mean duration of use.

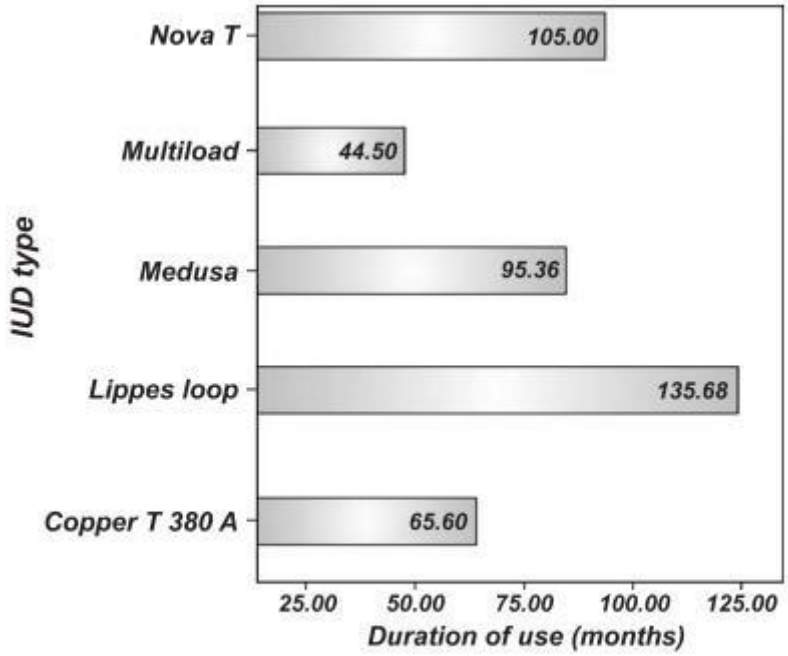


Fig. 2. IUD type vs. mean duration of use.

MATERIAL AND METHODS

STUDY PARTICIPANTS:

Patients planned for IUCD removal under anaesthesia.

INCLUSION CRITERIA:

Patients with history of IUCD insertion who has now come for removal

- without visible threads and
- those with visible threads where other methods of retrieval has been failed
- With confirmed evidence of IUCD by either ultrasound / x ray.

EXCLUSION CRITERIA:

Patients with history of IUCD insertion with ultrasound / x ray confirmed evidence of expulsion.

NUMBER OF GROUPS STUDIED:

Single group

SAMPLING:

Convenience sampling

POPULATION:

Patients with history of IUCD insertion who has now come for removal

- without visible threads and
- those with visible threads where other methods of retrieval has been failed

SAMPLE SIZE: 62

METHOD OF STUDY:

This study focuses on the need for removal of IUCD under anaesthesia and analyse them on the basis of

- The chief complaints of patients requiring IUCD removal
- Baseline demographic characters which includes age , parity , BMI, duration of IUCD use , type of delivery – labor natural / LSCS (elective or emergency) , time of insertion of IUCD
- The type of surgical method used – removal using hook or hysteroscopic or laparotomy or other method.
- To calculate the total operative time , type of IUCD removed , operative findings , any other associated complications , problems involved in removal

DATA COLLECTION, ANALYSIS AND INTERPRETATION

1) All data was collected in semi structured questionnaires
2) They were cleaned and managed in Microsoft excel
3) Missing values were not imputed
4) All data was consolidated
5) Data was analysed using IBM SPSS v16
6) Frequency and percentage analyses were done

OBSERVATION AND RESULTS

The mean age of the participants in 29 years (S.D=4.3 years) ranging between 22 and 46 years.

The mean BMI of the participants is 24.5 (S.D=2.6) ranging between 20 and 32.

Majority of them (n=30, 48.4%) were P1L1. Majority of them had pain (n=30, 48.4%) as the chief complaint followed by AUB/Spotting P/V (n=17, 27.4%).

Majority of them were previous LSCS/LCB 3 years (n=13, 21%) followed by previous LSCS/LCB 4 years (n=10, 16.1%). Out of 62 patients, only one of them had type-2 diabetes mellitus.

Examination findings showed that per abdomen was soft in all cases, cut thread not visible in per speculum examination and cut thread not felt in per vaginum examination in all cases.

Type of anaesthesia given is spinal in 61.3% (n=38) of the cases and intravenous sedation in 38.7% (n=24) of the cases.

Hook was used for removal of IUD in 79% (n=49) of the cases while hysteroscopy was used in 21% (n=13) of the cases.

The mean duration of IUD use was 3.9 years (S.D=2.1 years).

The minimum duration was one year while the maximum duration was 10 years. The median duration was 3 years.

Out of 49 subjects on whom hook was used, 27 of them had spinal anesthesia and the rest had intravenous sedation.

The mean duration of IUD use with reason of removal showed that in patients with abnormal uterine bleeding, it is 4.18 years (S.D=2.6 years).

The mean duration of IUD use with reason of removal showed that in patients with pain, it is 4.3 years (S.D=2.1 years).

The mean duration of IUD use with reason of removal showed that in patients who wanted/wants to conceive, it is 2.8 years (S.D=1 year).

Age distribution of the participants

The mean age of the participants in 29 years (S.D=4.3 years) ranging between 22 and 46 years.

Parameter	Age (In Years)
Mean	29.000
Median	28.000
Std. Deviation	4.2619
Minimum	22.0
Maximum	46.0

Table 1: Age distribution of the participants

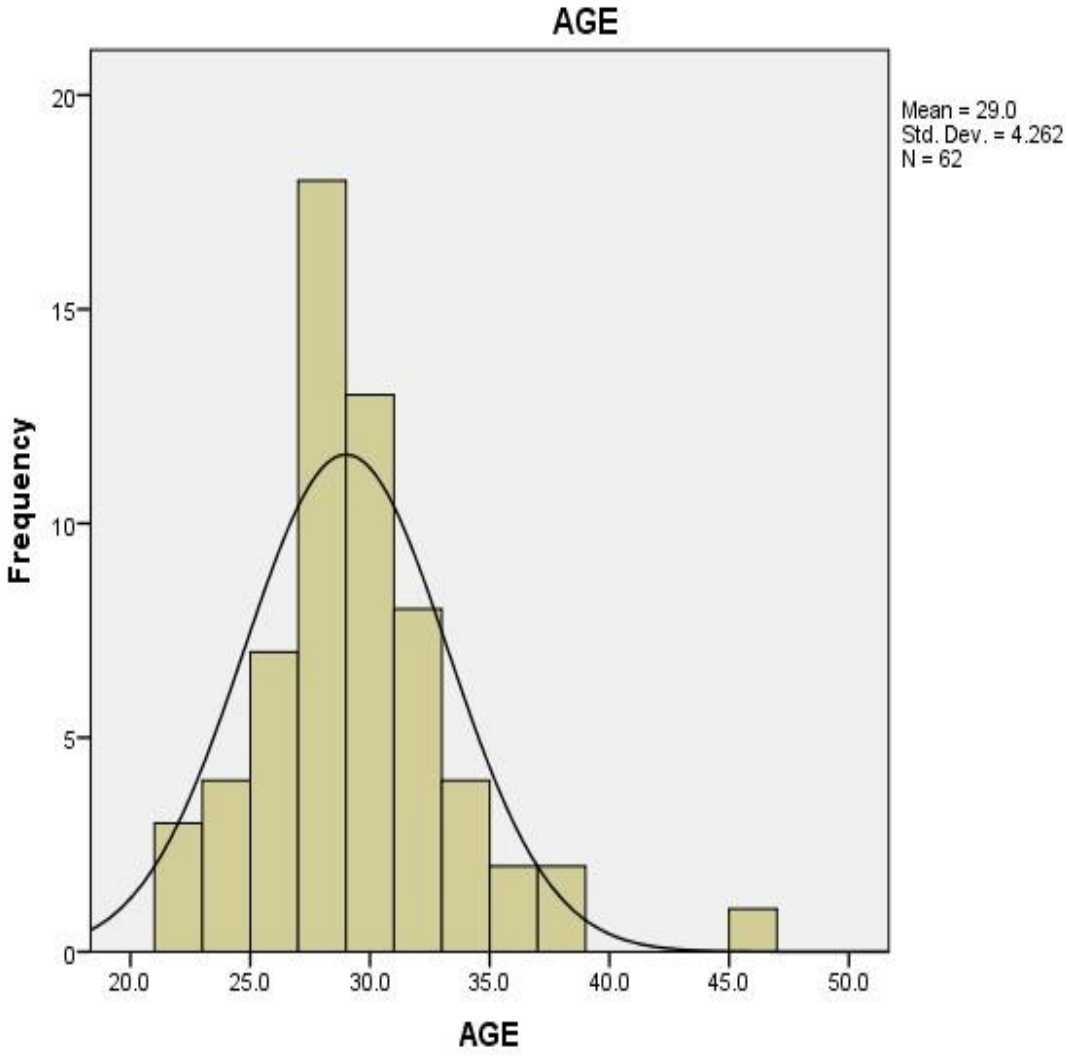


Figure 1: Age distribution of the participants

BMI distribution of the participants

The mean BMI of the participants is 24.5 (S.D=2.6) ranging between 20 and 32.

Parameter	BMI
Mean	24.565
Median	24.000
Std. Deviation	2.5663
Minimum	20.0
Maximum	32.0

Table 2: BMI distribution of the participants

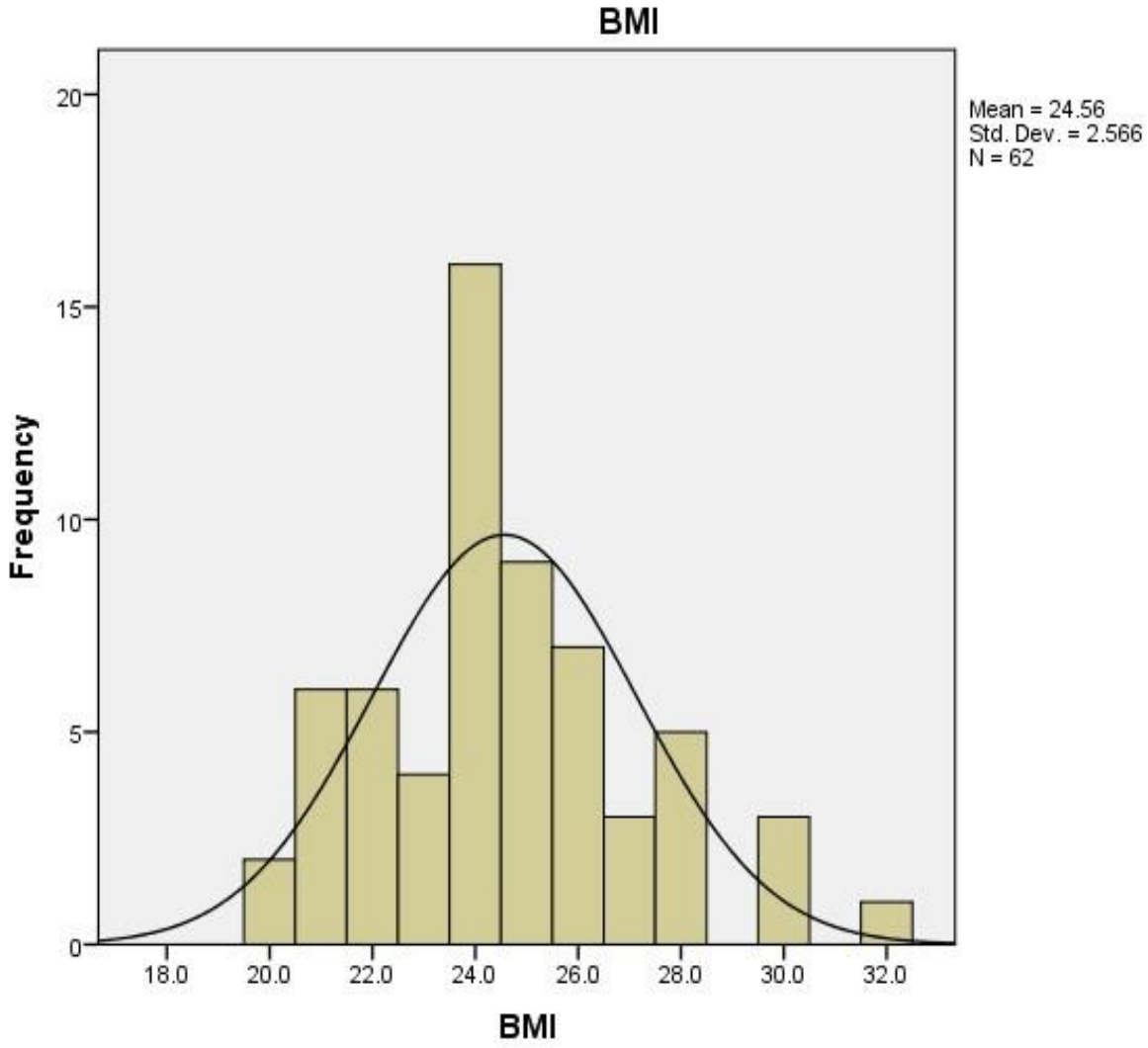


Figure 2: BMI distribution of the participants **Obstetric Score of the participants**

The following table shows the obstetric score of the participants. Majority of them (n=30, 48.4%) were P1L1.

OBSTETRIC SCORE		Frequency	Percent
	P1L1	30	48.4

P1L1A1	7	11.3
P2L2	21	33.9
P2L2A1	3	4.8
P3l2	1	1.6
Total	62	100.0

Table 3: Obstetric Score of the participants

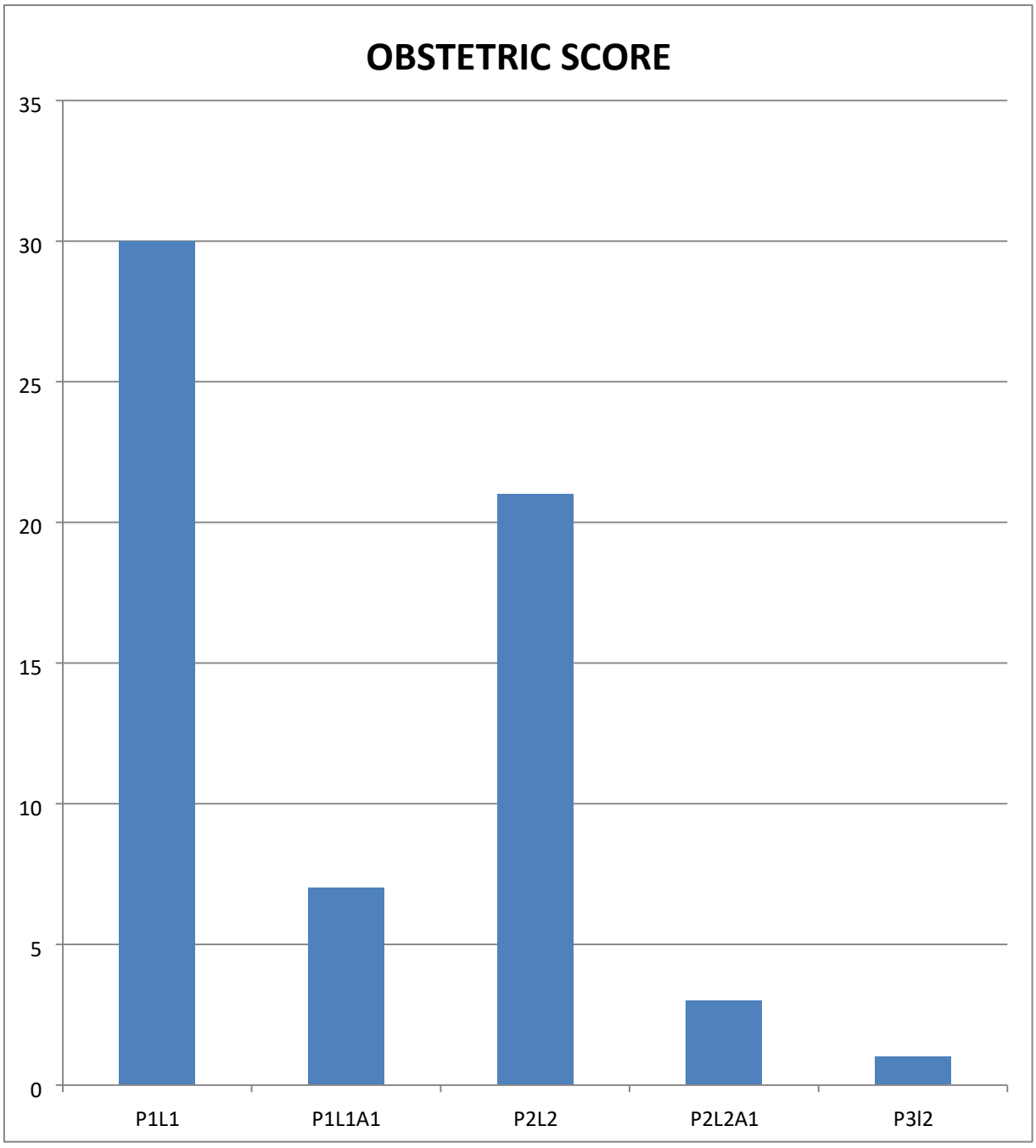


Figure 3: Obstetric Score of the participants **Reasons for removal**

Majority of them had pain (n=30, 48.4%) as the chief complaint followed by AUB/Spotting P/V (n=17, 27.4%).

Reasons for removal		Frequency	Percent
	Abnormal Uterine Bleeding/ Spotting per vaginum	17	27.4
	Pain	30	48.4
	Wants/ Wanted To Conceive	15	24.2
	Total	62	100.0

Table 4: Reasons for removal

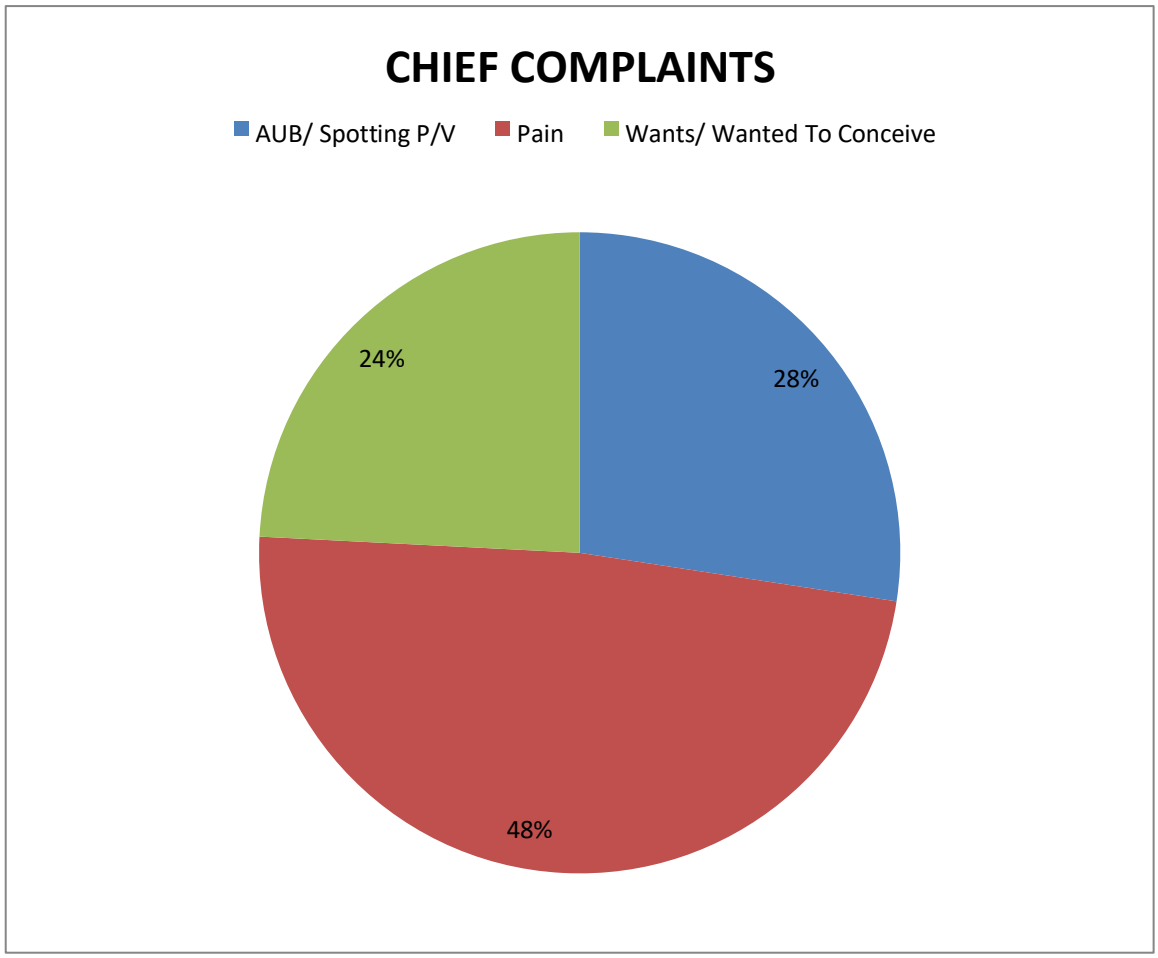


Figure 4: Reasons for removal **Obstetric history of the participants**

Majority of them were previous LSCS/LCB 3 years (n=13, 21%) followed by previous LSCS/LCB 4 years (n=10, 16.1%).

OBSTETRIC HISTORY		Frequency	Percent
	Previous 2lscs /Lcb 5yrs	3	4.8
	Previous Lscs /Lcb 1yr	3	4.8
	Previous Lscs /Lcb 2yrs	2	3.2
	Previous Lscs /Lcb 3yrs	13	21.0
	Previous Lscs /Lcb 4yrs	10	16.1
	Previous Lscs /Lcb 5yrs	5	8.1
	Previous Lscs /Lcb 8yrs	7	11.3
	Previous Lscs/ Lcb 8yrs	1	1.6
	Previous Lscs/LCB 2and Half	3	4.8
	Yrs		
	Previous Lscs/LCB 2yrs	8	12.9
	Previous Lscs/Lcb 3yrs	2	3.2

	Previous Lscs/Lcb 4yrs	1	1.6
	Previous Normal Delivery/LCB 5yrs	1	1.6
	Previous NVD/Lcb 10yrs	1	1.6
	Previous NVD/Lcb 3yrs	1	1.6
	Previous NVD/Lcb 8yrs	1	1.6
	Total	62	100.0

Table 4: Obstetric history of the participants

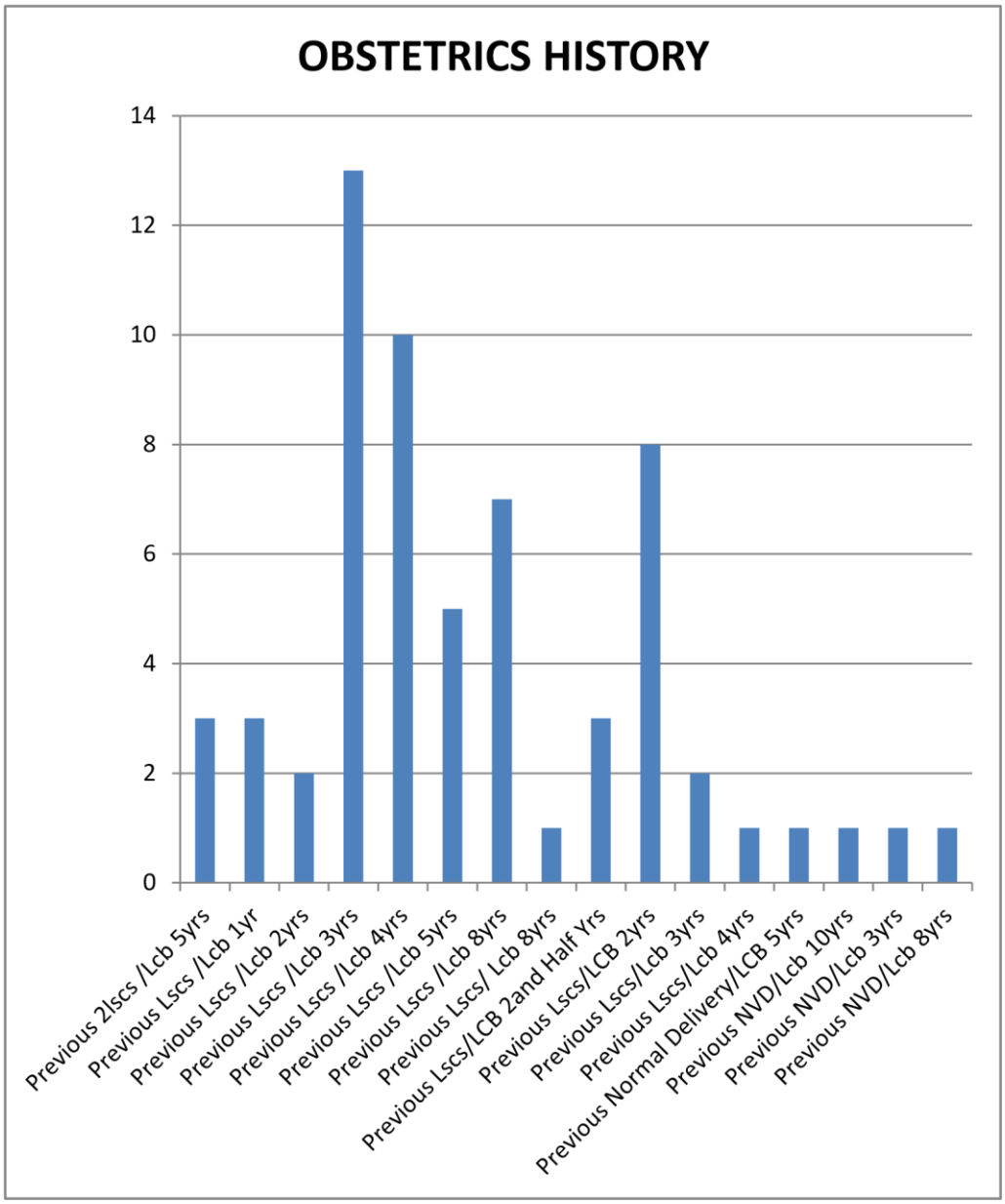


Figure 4: Obstetric history of the participants **Past history of the participants**

Out of 62 patients, only one of them had type-2 diabetes mellitus.

PAST HISTORY		Frequency	Percent
	Nil Significant	61	98.4
	T2DM	1	1.6
	Total	62	100.0

Table 5: Past history of the participants

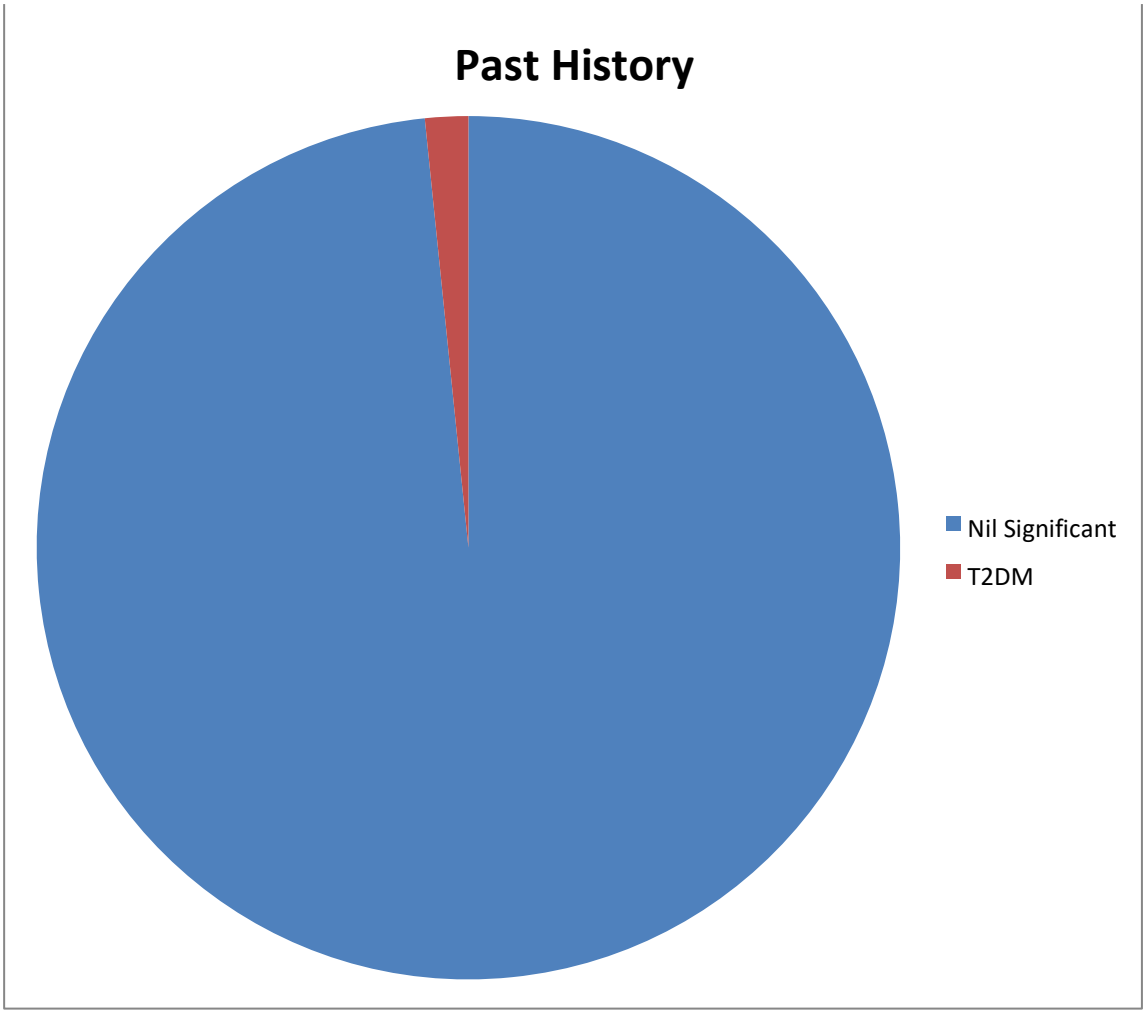


Figure 5: Past history of the participants **Examination findings in the participants**

Examination findings showed that per abdomen was soft in all cases, cut thread not visible in per speculum examination and cut thread not felt in per vaginum examination in all cases.

S.No	Variable	Frequency	Percent

1	Examination Findings-nil significant	62	100
2	Per Abdomen-soft	62	100
3	Per Speculum Examination-Cut thread not visible	62	100
4	Per Vaginal Exam- Cut thread not felt	62	100

Table 6: Examination findings in the participants

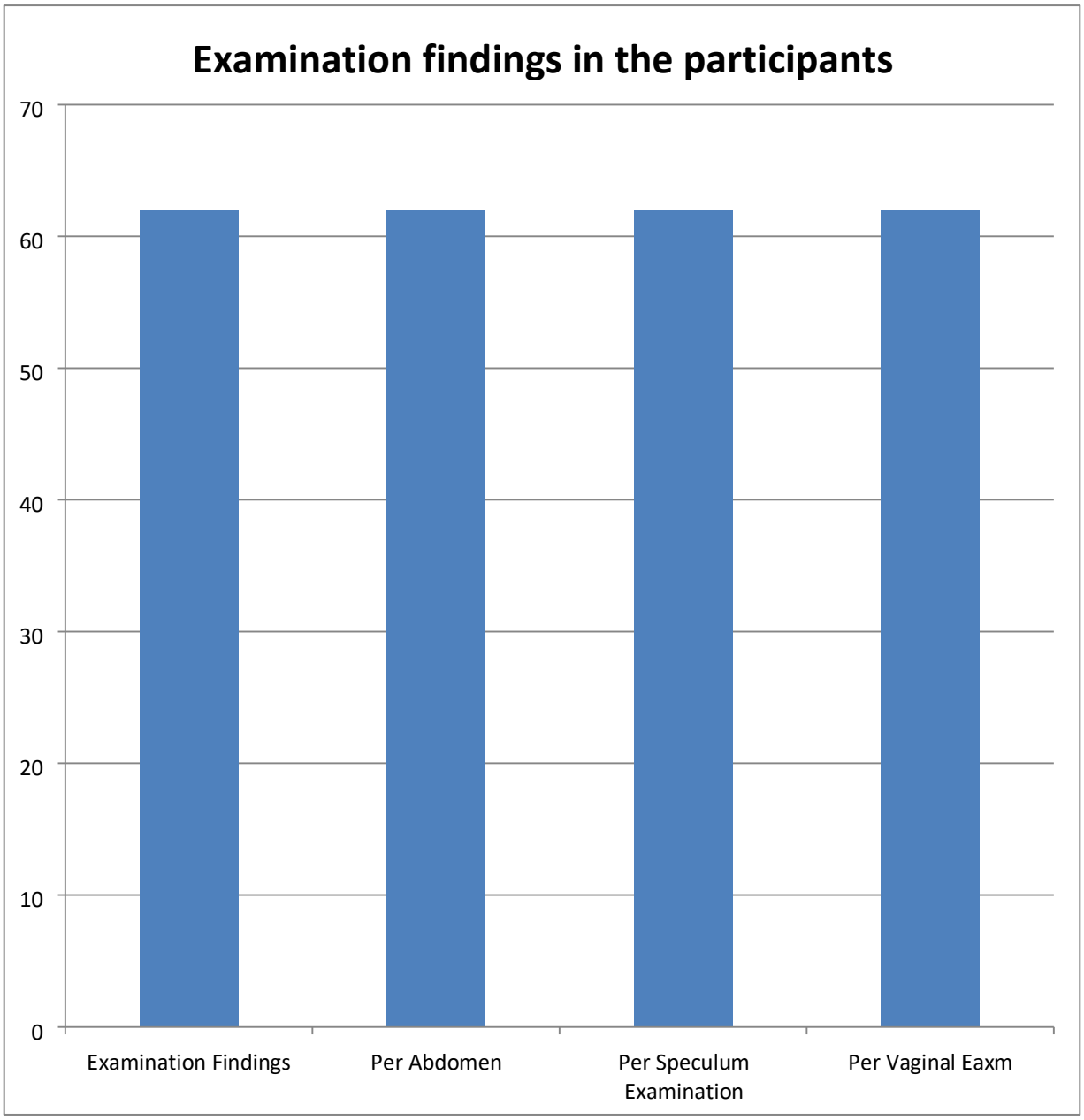


Figure 6: Examination findings in the participants **Type of Anaesthesia - Spinal or Local**

Type of anaesthesia given is spinal in 61.3% (n=38) of the cases and intravenous sedation in 38.7% (n=24) of the cases.

Type Of Anaesthesia – Spinal Or Local		Frequency	Percent
	IV Sedation	24	38.7
	Spinal	38	61.3
	Total	62	100.0

Table 7: Type of anesthesia

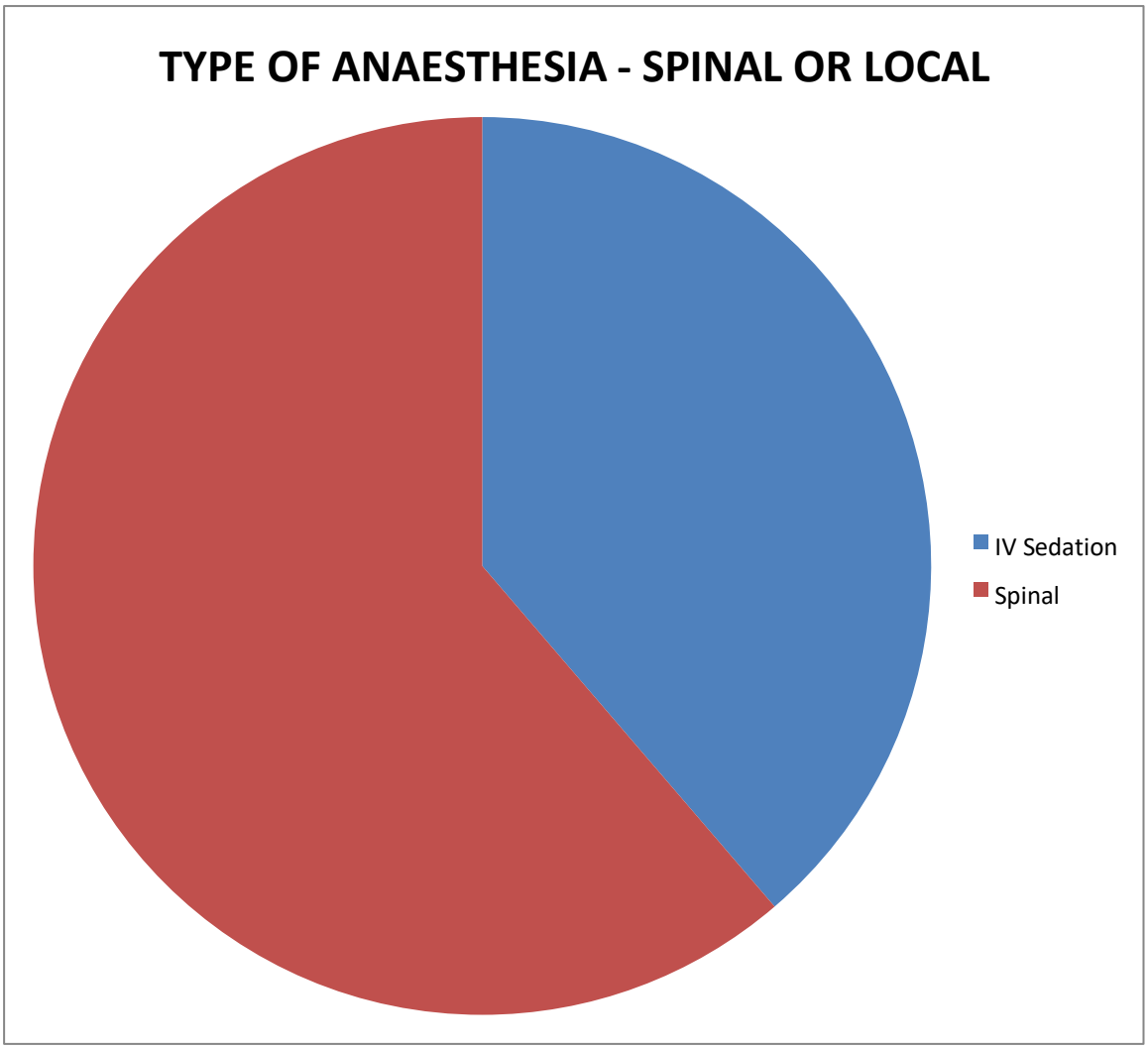


Figure 7: Type of anesthesia **Removal Method**

Hook was used for removal of IUD in 79% (n=49) of the cases while hysteroscopy was used in 21% (n=13) of the cases. Cut 375A was the IUD removed in all cases.

Removal Method		Frequency	Percent
	Hook	49	79.0
	Hysteroscopy	13	21.0
	Total	62	100.0

Table 8: Removal Method

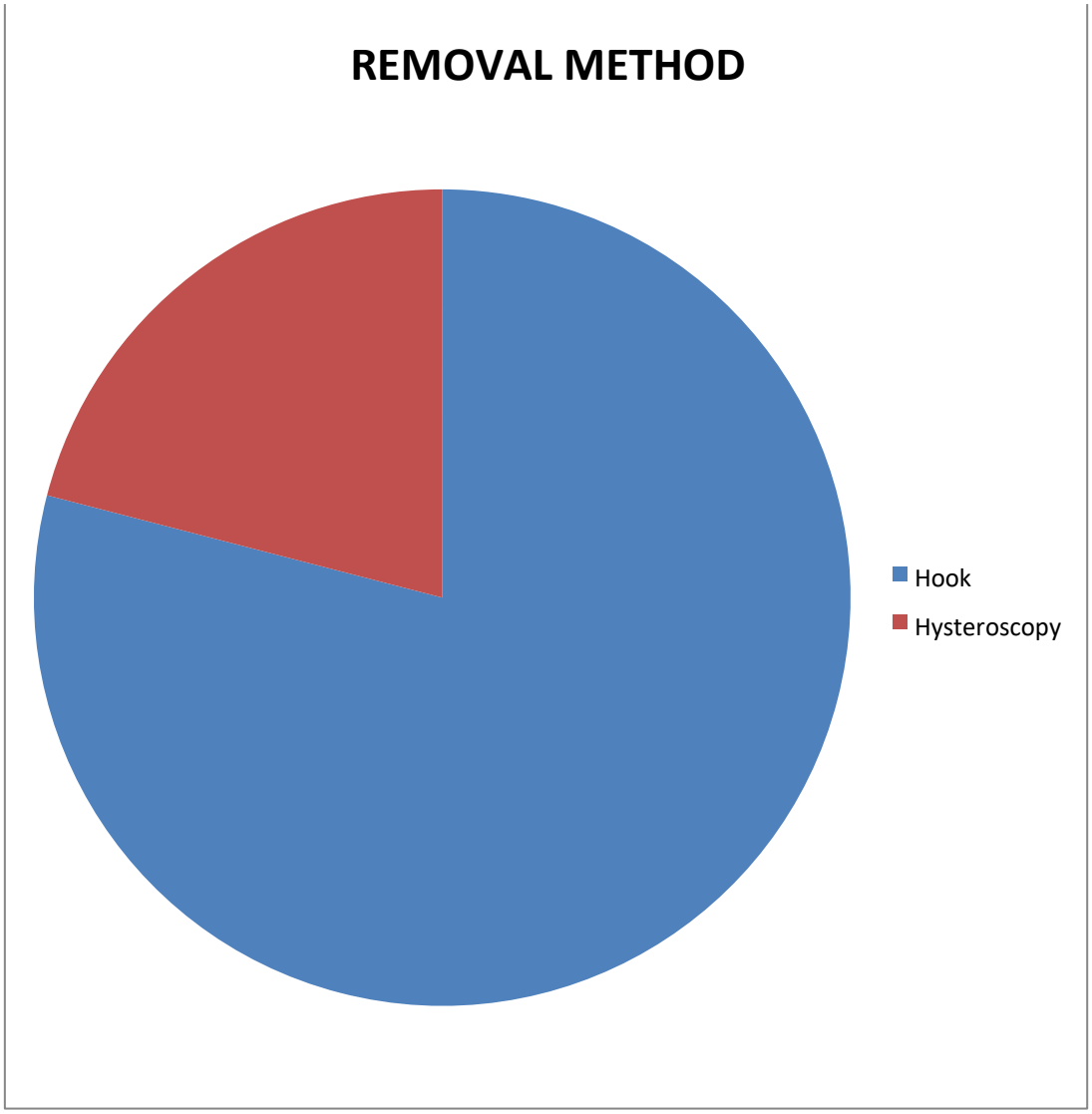


Figure 8: Removal Method

Duration of IUD use

The mean duration of IUD use was 3.9 years (S.D=2.1 years). The minimum duration was one year while the maximum duration was 10 years. The median duration was 3 years.

Duration of IUD use		
N	Valid	62
	Missing	0
Mean		3.960
Median		3.000
Std. Deviation		2.0750
Minimum		1.0
aximum		10.0

Table 9: Duration of IUD use

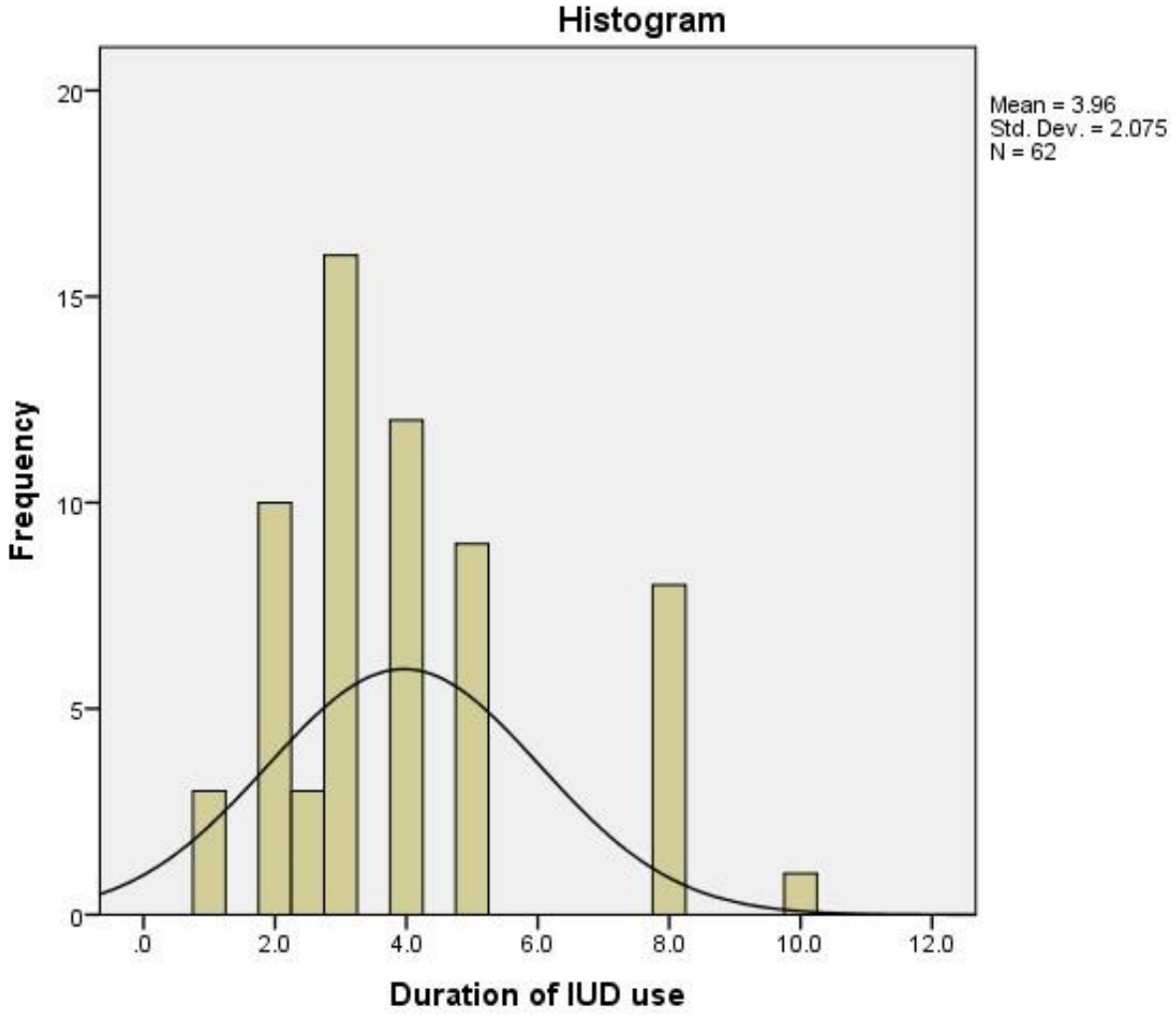


Figure 9: Duration of IUD use

Duration of IUD use	Frequency	Percent
1.0	3	4.8
2.0	10	16.1
2.5	3	4.8
3.0	16	25.8
4.0	12	19.4
5.0	9	14.5
8.0	8	12.9
10.0	1	1.6
Total	62	100.0

Table 10: Duration of IUD use

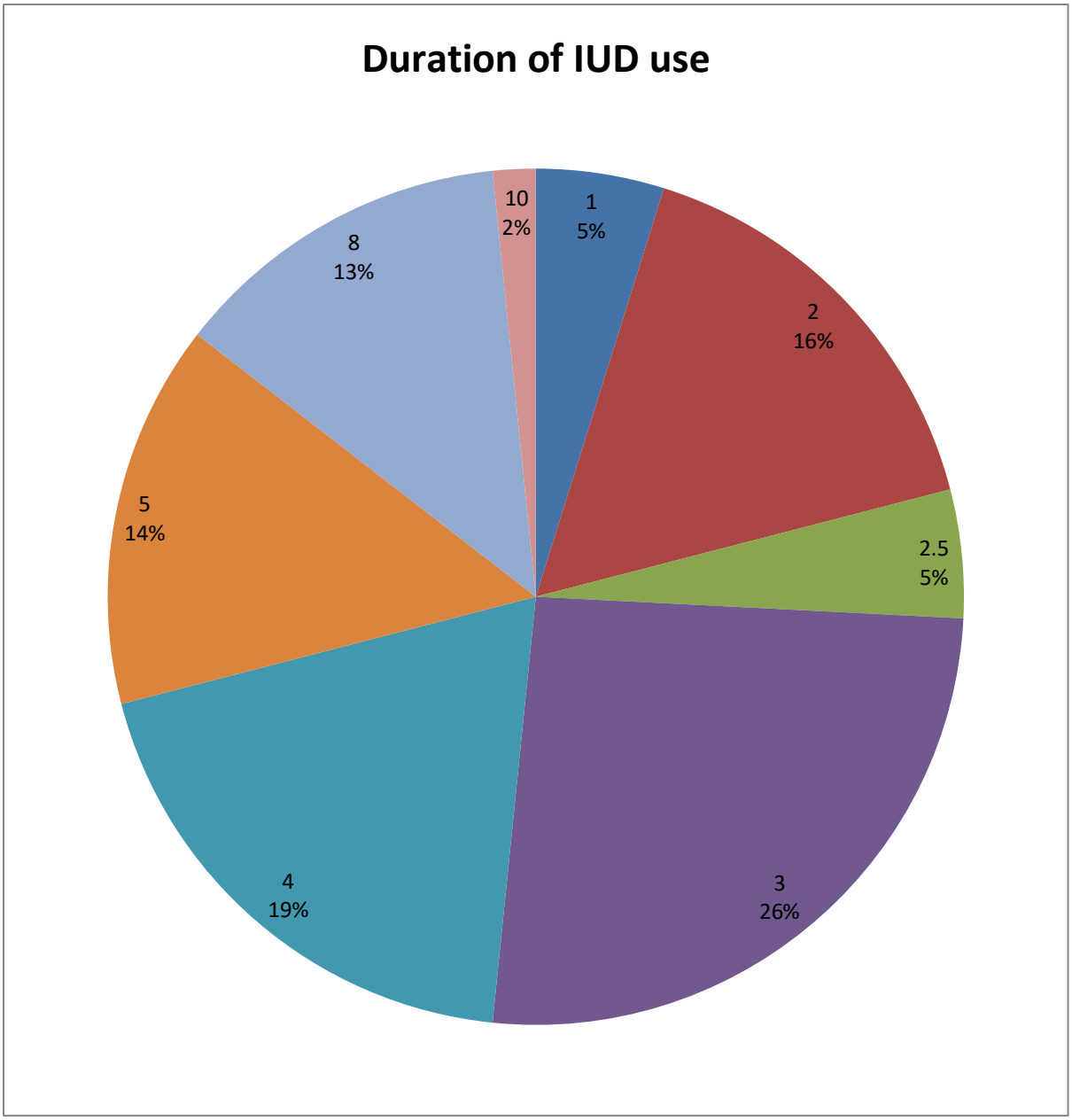


Figure 10: Duration of IUD use

Out of 49 subjects on whom hook was used, 27 of them had spinal anesthesia and the rest had intravenous sedation.

		REMOVAL METHOD		Total
		Hook	Hysteroscopy	
TYPE OF ANAESTHESIA	IVsedation	22	2	24
	spinal	27	11	38
Total		49	13	62

Table 11: Comparison of removal method with type of anesthesia used

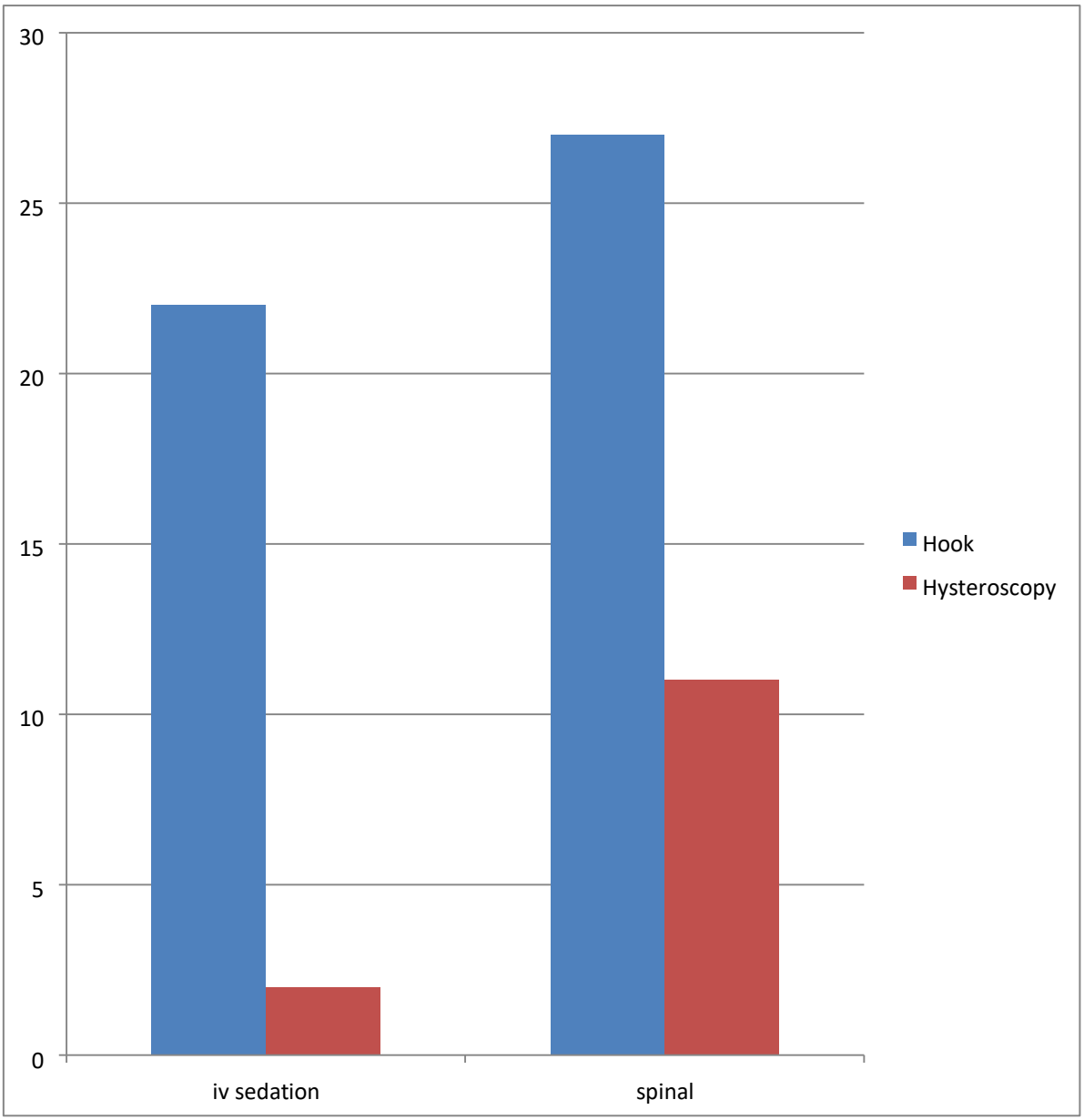


Figure 11: Comparison of removal method with type of anesthesia used

Duration of IUD use in different reasons for removal

The mean duration of IUD use with reason of removal showed that in patients with abnormal uterine bleeding, it is 4.18 years (S.D=2.6 years).

The mean duration of IUD use with reason of removal showed that in

patients with pain, it is 4.3 years (S.D=2.1 years).

The mean duration of IUD use with reason of removal showed that in patients who wanted/wants to conceive, it is 2.8 years (S.D=1 year).

Duration of IUD use in different reasons for removal			
Reasons for removal	Mean	N	Std. Deviation
Abnormal Uterine Bleeding	4.179	17	2.65
Pain	4.383	30	2.12
Wanted/wants to conceive	2.833	15	.99
Total	3.960	62	2.07

Table 12: Duration of IUD use in different reasons for removal

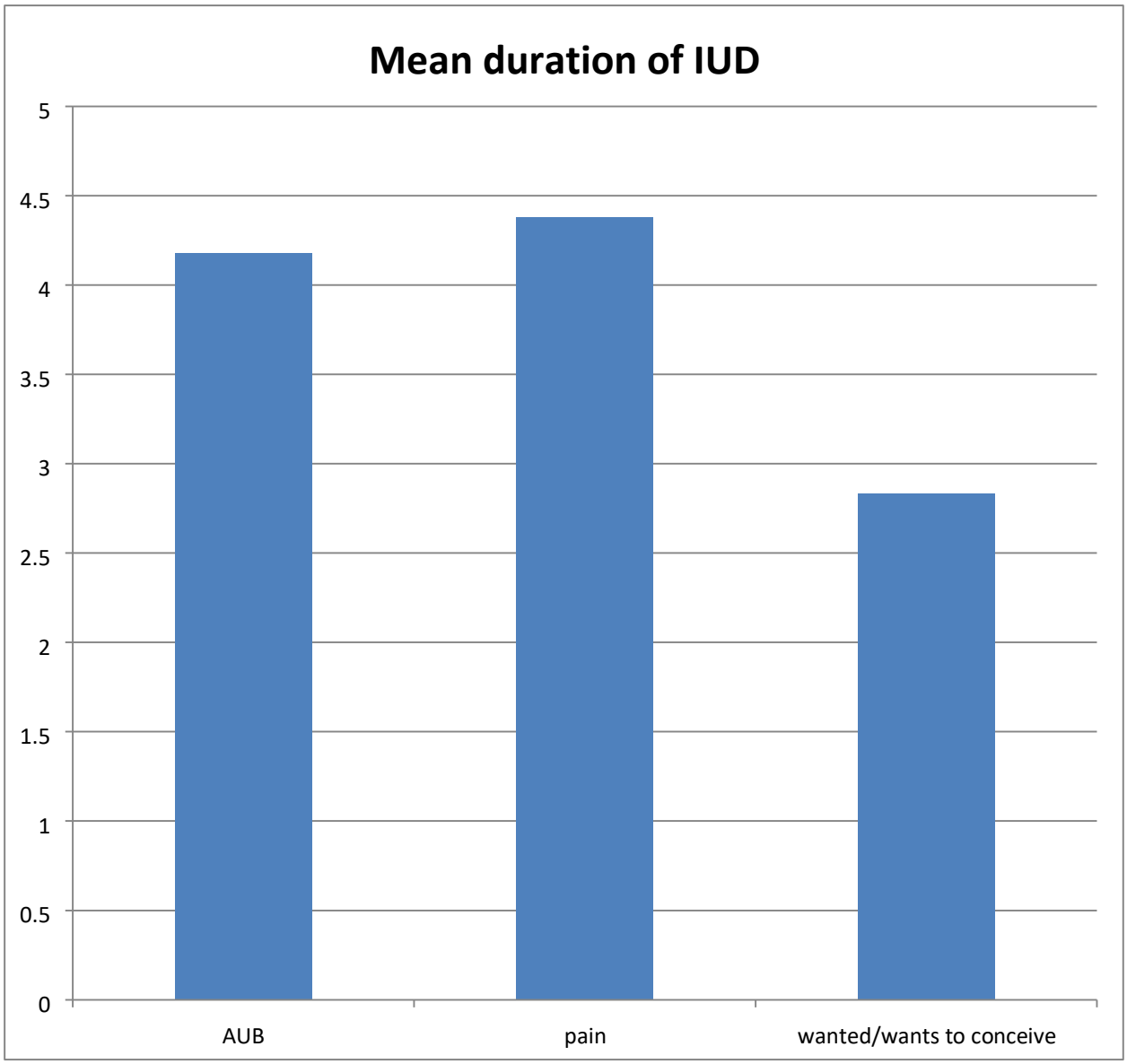


Figure 12: Duration of IUD use in different reasons for removal

DISCUSSION

The mean age of the participants in 29 years (S.D=4.3 years) ranging between 22 and 46 years. This is similar to the study by Tugrul et al in 2005 that had a similar distribution of age.

The mean BMI of the participants is 24.5 (S.D=2.6) ranging between 20 and 32. None of them were extremely obese in this study.

Majority of them (n=30, 48.4%) were P1L1. This shows the reason for removal of IUD as most of them wanted to conceive in this category. However, pain and bleeding was the most common reason in women who had completed their families.

Majority of them had pain (n=30, 48.4%) as the chief complaint followed by AUB/Spotting P/V (n=17, 27.4%). Majority of them were previous LSCS/LCB 3 years (n=13, 21%) followed by previous LSCS/LCB 4 years (n=10, 16.1%). Out of 62 patients, only one of them had type-2 diabetes mellitus.

Examination findings showed that per abdomen was soft in all cases, cut thread not visible in per speculum examination and cut thread not felt in per vaginum examination in all cases. Type of anaesthesia given is spinal in 61.3% (n=38) of the cases and intravenous sedation in 38.7% (n=24) of the cases.

Hook was used for removal of IUD in 79% (n=49) of the cases while hysteroscopy was used in 21% (n=13) of the cases.

One of the major finding in this study is the mean duration of IUD use. The mean duration of IUD use was 3.9 years (S.D=2.1 years). The minimum duration was one year while the maximum duration was 10 years. The median duration was 3 years. Out of 49 subjects on whom hook was used, 27 of them had spinal anesthesia and the rest had intravenous sedation.

The mean duration of IUD use with reason of removal showed that in patients with abnormal uterine bleeding, it is 4.18 years (S.D=2.6 years).

The mean duration of IUD use with reason of removal showed that in patients with pain, it is 4.3 years (S.D=2.1 years). The mean duration of IUD use with reason of removal showed that in patients who wanted/wants to conceive, it is 2.8 years (S.D=1 year).

All these findings are similar to the study by Tugrul et al (2005) and the study by Cheung in 2009.

SUMMARY AND CONCLUSION

Summary

The mean age of the participants in 29 years (S.D=4.3 years).

Majority of them (n=30, 48.4%) were P1L1

Majority of them had pain (n=30, 48.4%) as the main reason for removal followed AUB/Spotting P/V (n=17, 27.4%).

Hook was used for removal of IUD in 79% (n=49) of the cases while hysteroscopy was used in 21% (n=13) of the cases. Cut 375A was the IUD removed in all cases.

The mean duration of IUD use was 3.9 years (S.D=2.1 years). The minimum duration was one year while the maximum duration was 10 years. The median duration was 3 years.

The mean duration of IUD use with reason of removal showed that in patients with abnormal uterine bleeding, it is 4.18 years (S.D=2.6 years). The mean duration of IUD use with reason of removal showed that in patients with pain, it is 4.3 years (S.D=2.1 years).

The mean duration of IUD use with reason of removal showed that in patients who wanted/wants to conceive, it is 2.8 years (S.D=1 year).

Conclusion

The incidence of removal of IUD is low with only 62 subjects reporting during the study period

The major reason for removal of IUD is pain followed by abnormal uterine bleeding

The mean duration of IUD use was 3.9 yrs

From this study we can observe

That previous caesarian section has got more risk of getting impacted than previous Normal vaginal delivery. The patients with previous caeserian section with IUCD has to be kept in regular follow up for the presence of thread. They have to be followed up in the same institute where they delivered atleast till the postpartum period and for every three months thereafter.

In Institute of obstetrics and gynaecology during the one-year study period a total of 349 cases of IUCD were removed in total out which 287 were removed in OPD and 62 were removed using anaesthesia ,which calculates

to a percentage of 18. This shows that though intrauterine contraception is one of the effective method of contraception , a significant amount of candidates are going for impaction of it and being subjected to anaesthesia which adds to the morbidity .

It should be ensured that thread is directed well into the cervical os especially when LSCS is done in patients not in labour . insertion can be done using hands than using insertors to avoid the risk of IUCD getting impacted.

The final idea is to keep the candidates of IUCD in regular monitoring especially in the same institute where they delivered to avoid the risk of subjecting them to anaesthesia in future.

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PROFORMA

NAME- **AGE-**
OBSTETRIC SCORE-

HIEGHT- **WEIGHT-**
BMI-

DATE OF ADMISSION- **DATE OF SURGERY-**
DATE OF DISCHARGE-

CHIEF COMPLAINTS-

HISTORY OF PRESENTING ILLNESS-

MENSTRUAL HISTORY-

MARITAL HISTORY-

OBSTETRIC HISTORY- **• H/O IUCD insertion - following labour natural or LSCS** **IUCD inserted within 48hours following Labour natural/LSCS or intreval insertion done**

PAST HISTORY- FAMILY

HISTORY- PERSONAL

HISTORY-

GENERAL EXAMINATION-

HIEGHT- **WEIGHT-**
BMI-

VITALS-BP **PR-**
RR-

CARDIOVASCULAR SYSTEM-

RESPIRATORY SYSTEM-

PER ABDOMEN-

PER SPECULUM -

PER VAGINAL-

TYPE OF RETRIEVAL :

TOTAL OPERATIVE TIME:

TYPE OF IUD REMOVED:

OPERATIVE FINDINGS: ANY

COMPLICATIONS:

Curiginal

Document Information

Analyzed document	Fullthesis_finaldraft_Kavitha_23Dec21_5am.docx (D123856664)
Submitted	2022-01-02T11:25:00.0000000
Submitted by	Kavitha
Submitter email	kavithambbs12@gmail.com
Similarity	1%
Analysis address	kavithambbs12.mgrmu@analysis.urkund.com

Sources included in the report

SA	**Jayneel OBGY Plag Check.docx** Document Jayneel OBGY Plag Check.docx (D57050320)	1
W	URL: https://www.aafp.org/afp/2005/0101/p95.html Fetched: 2019-11-26T21:21:50.1230000	1

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI 600 003

EC Reg.No.ECR/270/Inst./TN/2013/RR-16
Telephone No.044 25305301
Fax: 011 25363970

CERTIFICATE OF APPROVAL

To
Dr.K.KAVITHA,
Post Graduate – MS (Obstetrics and Gynaecology),
Madras Medical College,
Chennai-600008.

Dear Dr. K.KAVITHA,

The Institutional Ethics Committee has considered your request and approved your study titled **"AN ANALYSIS OF THE NEED FOR IUCD REMOVAL UNDER ANAESTHESIA AT TERITIARY CARE CENTRE – A COMBINED PROSPECTIVE AND RETROSPECTIVE STUDY"- NO.17112020.** The following members of Ethics Committee were present in the meeting held on **03.11.2020** conducted at Madras Medical College, Chennai 3.

1. Prof.P.V.Jayashankar :Chairperson
2. Prof.N.Gopalakrishnan,MD.,DM., FRCP, Director, Inst.of Nephrology,MMC,Ch : Member Secretary
3. Prof. K.M.Sudha, Prof. Inst. of Pharmacology,MMC,Ch-3 : Member
4. Prof. Alagarsamy Jamila ,MD, Inst. of Patholoy, MMC, Ch-3 : Member
5. Prof.Rema Chandramohan,Prof.of Paediatrics,ICH,Chennai : Member
6. Prof.S.Lakshmi, Prof. of Paediatrics ICH Chennai :Member
7. Tmt.Arnold Saulina, MA.,MSW., :Social Scientist
8. Thiru S.Govindasamy, BA.,BL,High Court,Chennai : Lawyer
9. Thiru K.Ranjith, Ch- 91 : Lay Person

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary – Ethics Committee

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE
CHENNAI-600 003.

PLAGIARISM CERTIFICATE

This is to certify that this dissertation work titled "AN ANALYSIS OF IUCD REMOVAL UNDER ANAESTHESIA IN A TERTIARY CARE CENTRE – A COMBINDED RETROSPECTIVE AND PROSPECTIVE4 STUDY" of the candidate **DR. K. KAVITHA, REG. NO.221916869,** for the award of M.S in the branch of **OBSTETRICS AND GYNAECOLOGY**. I personally **verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded thesis file contains from introduction to conclusion pages and the result shows ONE percentage of plagiarism in the dissertation (D123856664)**

Signature and Seal of the Guide

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Madras Medical College, Chennai – 600 008

SNO	NAME	AGE	OBSTETRICSCORE	BMI	CHIEF COMPLAINTS	OBSTETRICS HISTORY	PAST HISTORY	EXAMINATION FINDINGS	PER ABDOMEN	PER SPECULUM EXAMINATION	PER VAGINAL EAXM	TYPE OF ANAESTHESIA SPINAL OR LOCAL	REMOVAL METHOD
1	mrs.sudha	27	P1L1	28	wanted to conceive	previous lscs/LCB 2yrs	nil significant	nil significant	soft ,	cut threadnot visible	cut thread not felt	iv sedation	hook
2	mrs.velankani	26	P1L1	21	pain	previous lscs /lcb 8yrs	nil	nil	soft	cut threadnot visible	cut thread not felt	iv sedation	hook
3	Mrs.Gomathi	31	P2L2	29.5	AUB	previous lscs /lcb 4yrs	nil	nil	soft	cut thread not visible	cut thread not felt	spinal	hysterosc opic
4	Mrs.Devi	30	P1L1	20	wanted to conceive	previous lscs/LCB 2yrs	nil	nil	soft	cut thread not visible	cut thread not felt	iv sedation	hook
5	Mrs.aadhilaksh mi	30	P2L2	27	pain	previous lscs /lcb 8yrs	nil	nil	soft	cutthread not visible	cut thread not felt	spinal	hysterosc opy
6	Mrs.Nandhini	31	P2L2	26.5	AUB	previous lscs/lcb 4yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
7	Mrs.padma	38	P1L1	24	pain	previous lscs /lcb 8yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook

8	mrs.devika	30	P1L1	27	pain	previous lscs/LCB 2and half yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysteroscopy

9	mrs.kavitha	38	P1L1	28	pain	previous lscs /lcb 4yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
10	mrs.rekha	27	P1L1	24	AUB	previous lscs /lcb 8yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
11	Mrs.govindamal	30	P2L2	25	pain	previous 2lscs /lcb 5yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysteroscopy
12	mrs.hemalatha	32	P1L1	24	AUB	previous lscs /lcb 1yr	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
13	mrs.Hamitha banu	27	P2L2	25	pain	previous lscs /lcb 1yr	nil	nil	soft ,	cutthread not visible	cut thread not felt	iv sedation	hook
14	mrs.sudha	27	P1L1	26	pain	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	iv sedation	hook
15	mrs.velankani	36	P1L1	25	AUB	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysteroscopy
16	mrs.sumithra	22	P2L2	26	pain	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook

17	mrs.Durga	26	P1L1	28	pain	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
18	mrs.revathy	34	P1L1	24	pain	previous lscs /lcb 4yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
19	mrs.saranya	22	P1L1	23	AUB	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
20	mrs.meenatchi	34	P1L1A1	25	pain	previous lscs /lcb 5yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
21	mrs.theboral	32	P1L1	26	pain	previous lscs/lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysterosc ope
22	mrs.suganya	27	P1L1	24	AUB	previous lscs/LCB 2and half yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
23	mrs.kavitha	30	P1L1	24	pain	previous lscs/LCB 2yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
24	mrs.revathy	32	P1L1	24	wanted to	previous lscs /lcb c1yr	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysterosc ope
25	mrs.krishnaveni	28	P1L1	25	wanted to conceive	previous lscs /lcb 4yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook

26	Mrs.kokila	26	P2L2	24	AUB	previous 2lscs /lcb 5yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
27	mrs.devika	34	P1L1A1	22	AUB	previous NVD/lcb 10yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysterosc ope
28	mrs.kanaka	31	P2L2	32	pain	previous lscs /lcb 8yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hysterosc opy
29	mrs.lalitha	25	P2L2	28	*pain*	previous lscs /lcb 5yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook

30	mrs.fathima	30	P1L1	23	AUB	previous lscs /lcb 8yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
31	mrs.indhu	27	P2L2	22	pain	previous lscs /lcb 4yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
32	mrs.seetha	**28**	P1L1	24	wanted to conceive	previous lscs/LCB 2and half yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
33	mrs.rekha	25	P1L1A1	26	wanted to conceive	previous lscs /lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
34	mrs.renuka	29	P2L2	24	AUB	previous lscs /lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook

35	mrs.fathima	34	P2L2A1	25	pain	previous lscs /lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	spinal	hook
36	mrs.Durga	27	P2L2	22	AUB	previous lscs /lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	iv sedation	hysterosc ope
37	mrs.thulasi	26	P1L1	22	wanted to conceive	previous lscs /lcb 3yrs	nil	nil	soft ,	cutthread not visible	cut thread not felt	iv sedation	hook
38	mrs.bhavani	27	P1L1A1	24	wanted to conceive	previous lscs /lcb 3yrs	nil	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
39	Mrs.Gomathi	29	P1L1	23	pain	previous lscs /lcb 3yrs	nil	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
40	mrs.asha	27	P1L1A1	28	AUB	previous lscs /lcb 3yrs	T2DM	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
41	mrs.sheela	23	P2L2	26	pain	previous lscs /lcb 4yrs	nil	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
42	mrs.dhavamani	23	P1L1	24	wanted to conceive	previous lscs/lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
43	mrs.Radha	24	P2L2	25	pain	previous lscs/ lcb 8yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	spinal	hysterosc opy

44	Mrs.shobaselvi	46	P2L2	24	pain	previous NVD/lcb 8yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
45	Mrs.barathi	36	P2L2A1	26	spotting p/v	previous lscs /lcb 4yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
46	mrs.faritha	24	P2L2	30	pain	previous lscs /lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
47	Mrs.jayanthi	31	P2L2	21	pain	previous lscs /lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
48	mrs.malathi	29	P1L1	22	wants to conceive	previous NVD/lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	spinal	hook
49	mrs.kala	27	P2L2	24	spotting p/v	previous lscs /lcb 5yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hysterosc ope
50	mrs.deepa	28	P1L1	26	pain	previous lscs /lcb 5yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
51	mrs.jeyanthi	27	P2L2A1	25	pain	previous lscs /lcb 4yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
52	mrs.banupriya	28	P1L1A1	23	pain	previous lscs /lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	spinal	hysterosc ope

53	mrs.bhavani	29	P2L2	25	spotting p/v	previous lscs /lcb 4yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
54	mrs.geetha	30	P2L2	30	pain	previous lscs /lcb 8yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
55	mrs.desamal	29	P1L1	24	pain	previous lscs /lcb 5yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
56	mrs.ranjani	31	P1L1A1	21	wanted to conceive	previous lscs /lcb 2yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
57	Mrs.govindamal	30	p3l2	24	pain	previous 2lscs /lcb 5yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
58	mrs.sindhuja	22	P2L2	21	AUB	previous lscs /lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
59	mrs.kalaivani	28	P1L1	21	wanted to conceive	previous lscs /lcb 3yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook
60	mrs.rajeshwari	28	P1L1	20	wanted to conceive	previous lscs /lcb 2yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook

61	mrs.sangeetha	25	P1L1	22	wanted to conceive	previous normal delivery/LCB 5yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook

62	mrs.nandhini	28	P1L1	21	wanted to conceive	previous lscs /lcb 4yrs	nil significant	nil	soft	cutthread not visible	cut thread not felt	iv sedation	hook