Endometrial Histopathological Changes in Women with Abnormal Uterine Bleeding in Kirkuk City, a Clinicopathological Study

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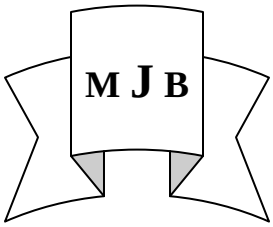

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Abstract

Background: Abnormal uterine bleeding is defined as any excessive, erratic, or irregular bleeding that does not correspond with the amount, duration or frequency of blood flow of a normal menstrual cycle .It is considered one of the most common and challenging problems presenting to the gynecologist regardless of the age the women ; it occurs in 9-14% of women between menarche and menopause, significantly impacting quality of life and imposing financial burden.

Aim: To determine the types and frequencies of various types of histopathological changes of the endometrium in patients with abnormal uterine bleeding in Kirkuk city.

Methods: In this study a total number of 525 endometrial biopsies obtained by dilatation and curettage from patients with abnormal uterine bleeding between 18-68 years old attending to Azadi teaching hospital, Kirkuk general hospital & a private clinic over a period of 26months .

Results: Most of our patients were in the age group 41-50 years and most of our patients were grand multiparous and of normal wieght. The main presenting complaint among our patients was menorrhagia (42.7%). Dysfunctional causes accounted for majority of the cases (61.3%), In which proliferative endometrium was the commonest seen in 159 cases. Organic causes of abnormal uterine bleeding constitutes (38.7%) , the commonest histopathological finding in this category was endometrial hyperplasia which was found in (60.1%) of cases. Age specific comparative analysis of organic causes of abnormal uterine bleeding revealed that endometrial hyperplasia was commonest in perimenopausal women in the age group 41-50 year (48.5%) followed by premenopausal women 31-40 year (36.8%), while all the cases with endometrial carcinoma was found in postmenopausal women in the age groups 51-60 year and >60 year 5 and 9 cases respectively.

Conclusion: In this study Obesity & nulliparity are important risk factors of endometrial hyperplasia and carcinoma, Menorrhagia was the commonest clinical features of abnormal uterine bleeding and dysfunctional causes constituents the majority of cases and endometrial hyperplasia was the commonest histopathological changes in abnormal uterine bleeding however endometrial carcinoma was more common at postmenopausal age groups.

دراسة سريرية مرضية التغيرات النسيجية المرضية في بطانة الرحم للنساء اللواتي يعانين من النزف الرحمي الغير طبيعي في مدينة كركوك

الخلاصة

خلفية البحث: يعرّف النزف الرحمي الغير طبيعي بأنه اي نزف مفرط، تائه وغير منتظم الذي لاينسجم مع كمية، أمد اوتكرار جريان الدم في الدورة الشهرية الطبيعية ويعتبر من المشاكل الاكثر شيوعا التي تواجه الاختصاصين في امراض النساء بغض النظر عن عمر المريضة؛ ويحدث في(٩-١٤%) من النساء بين بدء الاحاضة وسن اليأس، ويؤثر بصورة مهمة على نوعية الحياة ويفرض عبأ اقتصاديا.

الهدف من الدراسة: لتحديد انواع التغيرات النسيجية المرضية وتكرار حدوثها في مريضات يعانين من النزف الرحمي الغير طبيعي في مدينة كركوك.

المرضى والمواد وطريقة العمل:في هذه الدراسة تم اخذ ٥٢٥ خزعة من بطانة الرحم عن طريق توسيع وجرف الرحم من مريضات يعانين من النزف الرحمي الغير طبيعي ما بين (١٨-٦٨) سنة من العمر راجعوا مستشفى ازادي التعليمي ومستشفى كركوك العام او العيادات الخاصة على مدى ٢٦ شهرا.

النتائج: اكثر المريضات كن في الفئة العمرية (٤١-٥٠) سنة واكثرهن كن متعددات الولادة وطبيعيات الوزن. الشكوى الرئيسية بين المريضات كانت غزارة الطمث (٤٢,٧%). اسباب عسر الوظيفة تمثلت غالبية الحالات (٦١,٣%) ومن بينها بطانة الرحم التكاثري كانت الاكثر حدوثا ١٥٩ حالة. الاسباب العضوية لنزف الرحم الغير طبيعي تمثلت (٣٨,٧%) واكثر النتائج النسيجية المرضية في هذه الفئة كانت فرط الاستنساج والتي وجدت في (٦١,٩%) من الحالات.التحليل النسبي العمري للاسباب العضوية اضهر بأن فرط الاستنساج كان الاكثر شيوعا في النساء حول سن اليأس في الفئة العمرية (٤١-٥٠) عاما (٤٨,٥%) تليها النساء ما قبل سن اليأس (٣١-٤٠) عاما (٣٦,٨%) بينما كل الحالات السرطانية وجدت في النساء بعد سن اليأس { الفئات العمرية (٥١-٦٠)عاما و (اكثر من ٦٠)عاما} حيث وجدت ٥ و ٩ حالات بالتوالي.

الاستنتاجات: كانت السمنة وعدم الانجاب من اهم عوامل الخطورة لفرط الاستنساج وسرطان بطانة الرحم وكانت غزارة الطمث من اكثر المشاكل شيوعا وهي كانت ناتجة عن عسر الوظيفة التي تمثلت في غالبية الحالات وكان فرط الاستنساج من اكثر التغيرات النسيجية المرضية شيوعا بينما كان سرطان بطانة الرحم الاكثر شيوعا في الفئات العمرية بعد سن اليأس.

Introduction

Menstruation is defined as a periodic and cyclical shedding of endometrium accompanied by loss of blood during the reproductive age between the menarche and menopause. The normal menstrual cycle takes place at approximately 28 day intervals with arrange of 21-35 days, the flow lasts 5±2 days, and the average blood loss 40± 20 ml[1,2]. The etiologies and treatments for abnormal uterine bleeding over the reproductive years are best understood in the context of normal menstrual physiology. A normal cycle starts when pituitary follicular stimulating hormone induces ovarian follicles to produce estrogen. Estrogen stimulates proliferation of the endometrium. A luteinizing hormone surge prompts ovulation; the resultant corpus luteum produces progesterone, inducing a secretory endometrium and preparing the endometrium for implantation of the fertilized ovum. In the failure of fertilization of the oocyte or failure of implantation, the corpus luteum will regress and estrogen and progesterone levels will decline, followed by shedding of the endometrium and withdrawal bleeding occurs 13-15 days post ovulation [3] .Abnormal uterine bleeding (AUB) is defined as any excessive, erratic, or irregular bleeding that does not correspond with the frequency, duration or amount of blood flow of a normal menstrual cycle [1,2,4,5,6]. It is considered one of the most common and challenging problems presenting to the gynecologist regardless of the age the women [7]; it occurs in 9-14% of women between menarche and menopause, significantly impacting quality of life and imposing financial burden [5].There has been various terminologies used for description of abnormalities of menstrual blood loss and the following table summarizes the commonest terminologies used [6].

Terminology Used to Describe Abnormal Uterine Bleeding [6].

Term	Definition
Menorrhagia	Prolonged or excessive bleeding at regular intervals of greater than 80ml/period
Metrorrhagia:	Irregular, frequent bleeding of varying amount but not excessive
Menometrorrhagia:	Prolonged or excessive bleeding at irregular intervals
Polymenorrhea:	Regular bleeding at intervals of less than 21 days
Polymenorrhgia:	Is cyclical bleeding which is both excessive and frequent.
Oligomenorrhea:	Bleeding at intervals greater than every 35 days
Intermenstrual:	Uterine bleeding between regular cycles
Postcoital bleeding:	Bleeding after intercourse
Postmenopausal bleeding:	Bleeding recurring in a menopausal woman at least one year after cessation of cycles.

Disruption of normal physiology (Hypothalamo-pituitary-ovarian axis), anatomic changes in the endometrium or endometrial cancer may result in abnormal uterine bleeding [1].

The causes of Abnormal Uterine Bleeding can be categorized into two broad categories:

I-Organic causes: such as genital tract infections, tumors (benign or malignant), adenomyosis

, conception, systemic disorders and iatrogenic.[1]

II-Dysfunctional uterine bleeding (DUB):is the most common cause of menorrhagia. Anovulatory DUB is the most common variant. Ovulatory DUB is also well recognized.DUB should only be considered after pregnancy, organic reproductive tract pathology, systemic illness, and coagulopathy are ruled out; it is the diagnosis of exclusion[8]. DUB is very common in the post-menarche period due to immaturity of the hypothalamic-pituitary-ovarian axis and in perimenopause secondary to declining estrogen levels (and hence failure of the LH surge) and is commonly anovulatory in nature[9].

The causes of abnormal uterine bleeding newly categorized by The International Fedration of Gynecology and Obstetrics (FIGO) into a new classification system (PALM-COEIN) , of the nine categories in , the first four are defined as visually objective structural criteria (PALM: polyp , adenomyosis, leiomyoma, and malignancy and hyperplasia).The second four are unrelated to structural abnormalities (COEI: coagulopathy, ovulatory dysfunction, local endometrial “hemostasis”, and iatrogenic), and the final category is for entities that are not yet classified (N) (Figure 1)[10-12].

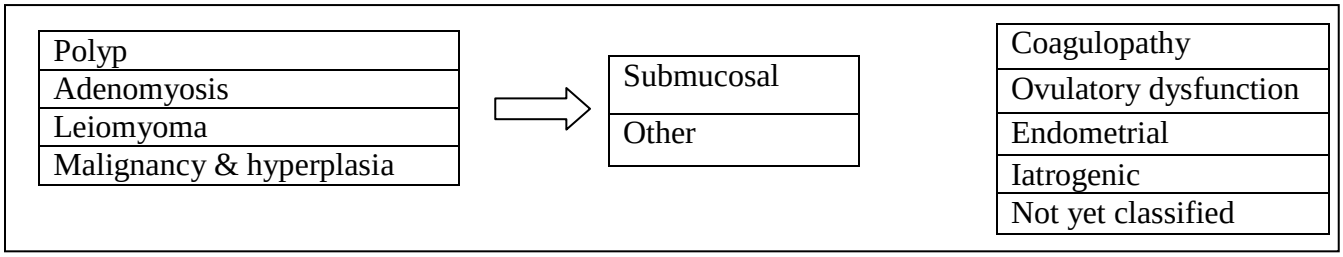

Figure 1 FIGO classification system for causes of AUB[13]

The most common methods of endometrial sampling in current clinical use are[1, 14]

1-Diagnostic dilatation and curettage (D&C).

2-Outpatient (Pipelle) endometrial biopsy .

3-Hysteroscopy.

Histological characteristics of endometrial biopsy, taken by dilatation and curettage and assessed by light microscopy, remain the diagnostic standard for the clinical diagnosis of endometrial pathology[15,16] and should be considered in all women with abnormal uterine bleeding particularly in those above the age of (40) years, and in women who are at increased risk of endometrial cancer[14].

Indeed, the initial diagnosis is made by endometrial biopsy taken by curettage, which in itself may be therapeutic, useful and cost effective for detecting intrauterine pathologies and very few lesions escape detection[16,17], however associated risks of general anesthesia, uterine perforation, infection, and considering such number of gynecological referrals for abnormal uterine bleeding, that needs evaluation by endometrial biopsy to exclude endometrial carcinoma, it is reasonable to assume that it puts a considerable economic burden on society, this has led to the advent of new and simple methods for endometrial sampling.

Conversely, the outpatient endometrial biopsy or the curettage may not sample the entire endometrium, and the areas of greatest histological or cytological severity may thus escape histological Identification [16].

Aims and Objectives

To determine the types and frequencies of various types of endometrial pathologies in patients with abnormal uterine bleeding in Kirkuk city.

Materials and Methods

A prospective cross sectional study had done on 525 endometrial biopsies obtained by dilatation and curettage from patients with abnormal uterine bleeding between 18-68 years old attending to Azadi teaching hospital, Kirkuk general hospital & a private clinic over a period of 26 months extended from the 1st of Janiuary 2011 till the 1st of March 2013.

A full information was collected from every patient included name, age, address, parity, smoking habit, with a detailed history including the previous menstrual history, the recent bleeding pattern and date of last period, sexual activity, contraceptive history[oral, parenteral, intrauterine contraceptive device (IUCD) or tubal ligation] , systematic review to rule out infection or systemic diseases, drug history including current medications especially

corticosteroids, anticoagulants, hormonal supplements and previous medical history (especially history of Tuberculosis, diabetes and\or hypertension & chronic liver diseases).

Physical examination both systemic [including body mass index (BMI)] & pelvic examination including an inspection of the lower genital tract (vulva &vagina), cervix (for redness, hypertrophy, ectropion & polyp) with bimanual examination for uterus (size, position & consistency) and for any adnexal masses.

A pregnancy test was done with baseline investigations including full blood count, coagulation screen (bleeding time & clotting time), Random blood sugar, liver function test and thyroid function test if there was clinical suspicion of thyroid and liver diseases, cervical pap smear and transvaginal ultrasonography for the uterus (size, endometrial thickness, presence of endometrial polyp or fibroid) and ovaries (for any cyst/mass & its consistency).

Women with bleeding due to pregnancy related complications such as abortions, gestational trophoblastic disease or ectopic pregnancy as well as bleeding due to previously diagnosed gynecological malignancy, with IUCD in situ, leiomyoma, bleeding disorders, history / evidence suggestive of acute pelvic infection & on hormonal treatment for abnormal uterine bleeding were excluded from the study.

Diagnostic curettage was done for patients with abnormal uterine bleeding of any pattern at age over 40 years or less than 40 years with failure to response to medical treatment or with risk factors for endometrial carcinoma such as obesity, polycystic ovarian disease, tamoxifen therapy and family history of endometrial carcinoma.

The tissues obtained by curettage were examined in the laboratories of Azadi teaching Hospital and a private laboratory, where it was first fixed in (10%) neutral formalin. The specimens were routinely processed and 4-5microne thick sections were cut from paraffin blocks and stained with routine haematoxylin and eosin stains and the patterns of uterine histopathological changes identified and classified according to age groups.

Data was analyzed by using Statistical Package for Social Sciences (SPSS) version 19 for windows.

Results

A total of (525) patients fulfilled the inclusion criteria and were analyzed in this study. The mean age of patients was (40.28) years and the median was (41) year. The minimum age was (18) years and the maximum was (68) years.

The age of the patients studied were categorized into six groups, (≤ 20yrs), (21-30yrs), (31-40yrs), (41-50yrs), (51-60yrs) and (>60yrs) (Figure 2) which shows the age distribution of the patients included in the study.

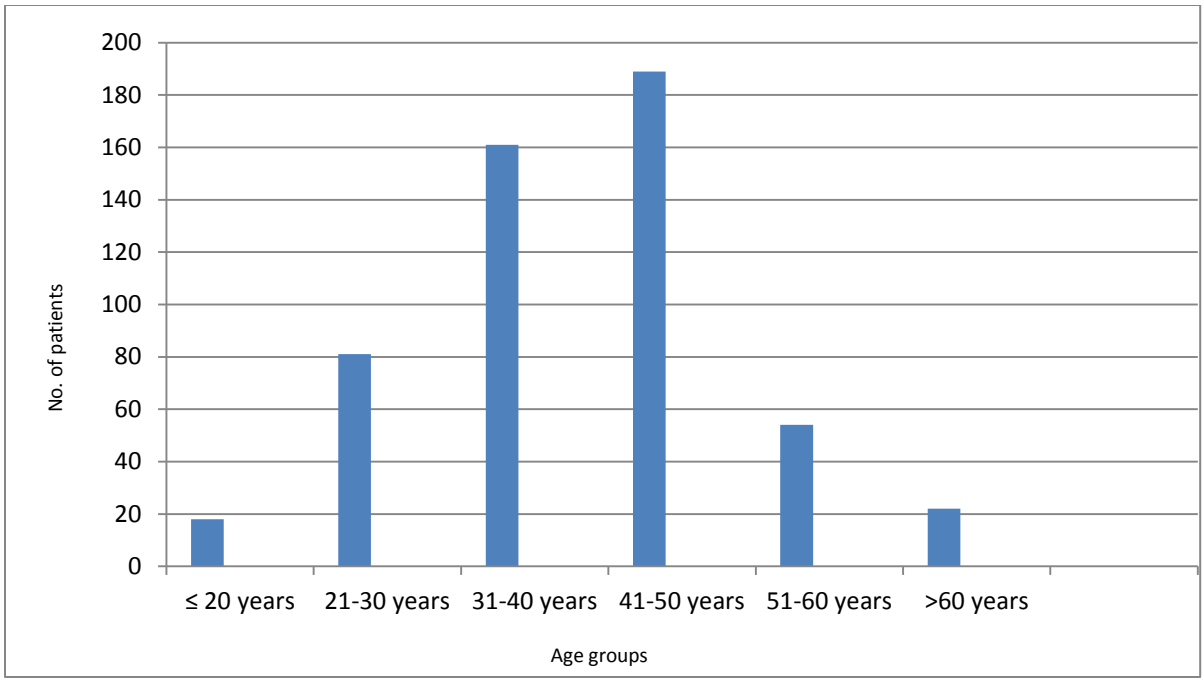

Figure 2 Age groups of patients with abnormal uterine bleeding

Of these (38.4%) of patients were grand multiparous, (35.6%) were multiparous, (18.7%) were of low parity, and (7.3 %) were nulliparous (Table 1).

Table 1 Parity of patients presenting with abnormal uterine bleeding

Parity	No.(%)
Nulliparous	38(7.3%)
Low parity (P1-P2)	99(18.7%)
Multiparous (P3-P4)	186(35.6%)
Grandmultiparous (> P5)	202(38.4%)
total	525

Eleven percent (11%)of the patients were obese, (30%) were overweight, and (59%) were in normal weight group (Table 2).

Table 2 Body mass index of patients with abnormal uterine bleeding

BMI (kg/m2)	No. (%)
Normal weight (19-25)	310(59%)
Over weight (25-29)	157(30%)
Obese (≥30)	58(11%)
Total	525

Endometrial carcinoma had a statistically significant association with parity and obesity (p value < 0.0005) (Table 3) .

Table 3 Parity of patients with endometrial carcinoma.

Parity & Obesity	Carcinoma	
	Negative	Positive
Nulliparous	28	10
Multiparous	483	4
Obese	45	13
Not obese	466	1

Chi-Squared test (P value < 0.0005)

The history of contraception in the form of intrauterine contraceptive device (IUCD) was positive in 53 (10%) patients .However, 42 (8%) patients used oral contraceptive pills, 32 (6%) patients used coitus interruptous, 21(4%) patients used injectable progesterone, 16 (3%) patients used condom while only 5 (1%) patients operative contraception in the form of tubal ligation.

The main presenting complaint among our patients was menorrhagia(42.7%), followed by menometrorrhagia (18.9 %), post-menopausal bleeding (16.3%) ,continuous vaginal bleeding (8.8%),polymenorrhagia (7.6%), metrorrhagia (4.2%) and polymeno-rrhoea (1.5%) (Table 4).

An age specific comparative analysis of the clinical presentation (Table 4) revealed that menorrhagia was the commonest complaint in the 41-50 years and 31-40 years age group accounting for (47.3%), (40.7%) of the cases presenting with the complaint respectively .Among the other clinical presentation those with continous vaginal bleeding was more common in the 21-30 year age group whilst menometrorrhagia was the second common presentation in pre and perimenopausal age group.

Table 4 Pattern of bleeding in patients with abnormal uterine bleeding according to age groups

Pattern of bleeding	≤20yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	>60 yrs	Total(%)
Menorrhagia	4(1.7%)	23(10.3%)	91(40.7%)	106(47.3%)	-	-	224(42.7%)
Menometrorrhagia	2(2.0%)	16(16.1%)	37(37.4%)	44(44.5%)	-	-	99(18.9%)
Postmenopausal bleeding	-	-	-	10(11.6%)	54(62.8%)	22(25.6%)	86(16.3%)
Continuous vaginal bleeding	8(17.4%)	29(63%)	5(10.9%)	4(8.7%)	-	-	46(8.8)
Polymenorrhagia	2(5%)	9(22.5%)	21(52.5%)	8(20%)	-	-	40(7.6%)
Metrorrhagia	1(4.5%)	3(13.7%)	5(22.7%)	13(59.1%)	-	-	22(4.2%)
Polymenorrhoea	1(12.5%)	1(12.5%)	2(25%)	4(50%)	-	-	8(1.5%)
Total	18	81	161	189	54	22	525

According to histopathological finding endometrial histopathology was analyzed separately and categorized into dysfunctional and organic causes (Table 5), dysfunctional causes accounted for majority of the cases (61.3%).

Table 5 The main causes of abnormal uterine bleeding.

Causes of abnormal uterine bleeding	No. (%)
Dysfunctional uterine bleeding	322 (61.3%)
Organic lesions	203 (38.7%)
Total	525(100)

In cases with dysfunctional uterine bleeding proliferative endometrium was the commonest seen in 159(49.4%) cases, followed by secretory phase endometrium in 114(35.4%) of the cases (Table 6) (figure 2).

Table 6 Histopathological pattern of endometrium in patients presenting with dysfunctional causes of abnormal uterine bleeding.

Endometrial Histopathology	Number (%)
Proliferative phase	159 (49.4%)
Secretary phase	114(35.4%)
Irregular phase endometrium	49(15.2%)
Total	322 (100%)

Table (7)shows the distribution of histological pattern of endometrium in patients with dysfunctional uterine bleeding according to their age groups, of the cases with proliferative endometrium the largest number was seen in the age group 41-50 years (39.6%) followed by the 31-40 year (25.2%). Most of the cases with secretory endometrium was also seen in the age group 41-50 years (35.1%), the rest of other diagnosis composed of irregular phase endometrium accounting for (15.2%) of the cases was also commonly seen in this age group (38.8%) of them .

Table 7 Histopathological pattern of endometrium in patients presenting with dysfunctional causes of abnormal uterine bleeding according to age.

Endometrial histology	≤20yrs	21-30yrs	31-40yrs	41-50yrs	51-60yrs	>60yrs	Total(100%)
Proliferative phase	15(9.4%)	23(14.5%)	40(25.2%)	63(39.6%)	18(11.3%)	-	159(49.3)
Secretary phase	3(2.6%)	26(22.8%)	36(31.6%)	40(35.1%)	9(7.9%)	-	114(35.4)
Irregular phase endometrium	-	18(36.7%)	12(24.5%)	19(38.8%)	-	-	49(15.2)
Total	18(5.6)	67(20.8)	88(27.3)	122(37.9)	27(8.4)	-	322(100)

Organic causes of abnormal uterine bleeding constitutes (38.7%) (Table 5), the commonest histopathological finding in this category was endometrial hyperplasia which was found in (60.1%) of cases, followed by atrophic changes (12.8%), polyp (10.4%), endometritis (9.8%) and endometrial carcinoma (6.9%) (Table 8)(figures 3-7).

Table 8 Histopathological pattern of endometrium in patients presenting with organic causes of abnormal uterine bleeding.

Endometrial Histopathology	Number(%)
Endometrial hyperplasia	122(60.1%)
Atrophic endometrium	26(12.8%)
Polyp	21(10.4%)
Endometritis	20(9.8%)
Endometrial carcinoma	14(6.9%)
Total	203(100%)

On categorization of endometrial hyperplasia, 70 cases (57.4%) was of simple (cystic) type, 35 cases (28.7%) was of complex type without atypia while complex endometrial hyperplasia with atypia was found in only 17 cases (13.9%) (Table 9).

Table 9 The frequency of different histological types of endometrial hyperplasia.

Type of endometrial hyperplasia	No. (%)
Simple (cystic)	70(57.4%)
Complex without atypia	35(28.7%)
Complex with atypia	17(13.9%)
Total	122 (100)

Age specific comparative analysis of organic causes of abnormal uterine bleeding revealed that endometrial hyperplasia was commonest in perimenopausal women in the age group 41-50 year (48.5%) followed by premenopausal women 31-40 year (36.8%), while all the cases with endometrial carcinoma was found in postmenopausal women in the age groups 51-60 year and >60 year 5 and 9 cases respectively (Table 10).

Table 10 Histopathological pattern of endometrium in patients presenting with organic causes of abnormal uterine bleeding according to age.

Endometrial histology	≤20yrs	21-30yrs	31-40yrs	41-50yrs	51-60yrs	>60yrs	Total(100%)
Endometrial hyperplasia	-	8(6.6%)	45(36.8%)	59(48.5%)	7(5.7%)	3(2.4%)	122(60.1)
Atrophic endometrium	-	1(3.85%)	4(15.45%)	7(26.9)%)	9(34.6%)	5(19.2%)	26(12.8)
Polyp	-	-	9(42.8%)	10(47.6%)	2(9.6%)	-	21(10.4)
Endometritis	-	6(30%)	9(45%)	4(20%)	1(5%)	-	20(9.8)
Endometrial carcinoma	-	-	-	-	5(35.7%)	9(64.3%)	14(6.9)
Total	-	15(7.4%)	67(33%)	80(39.4%)	24(11.82%)	17(8.38%)	203

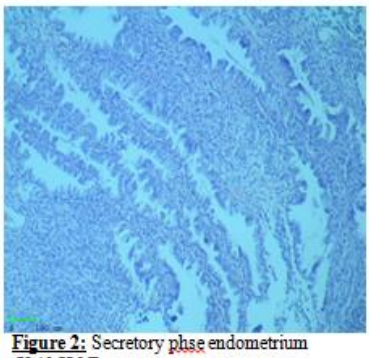

Figure 2: Secretory phse endometrium X 40 H&E

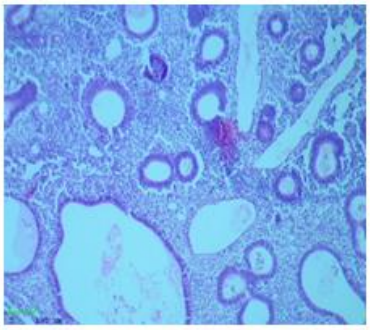

Figure 3 Simple endometrial hyperplasia, Hyperplasia.x100 H&E.

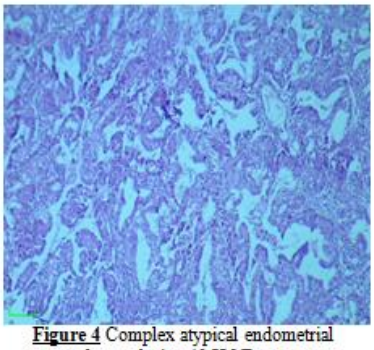

Figure 4 Complex atypical endometrial hyperplasia x40 H&E

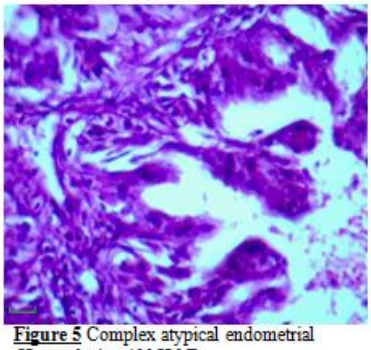

Figure 5 Complex atypical endometrial Hyperplasia.x400 H&E.

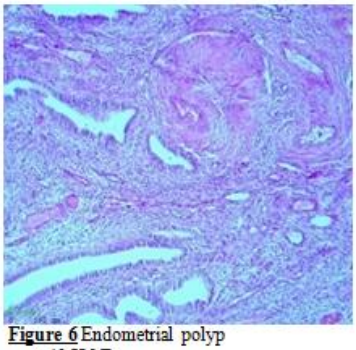

Figure 6 Endometrial polyp x40 H&E

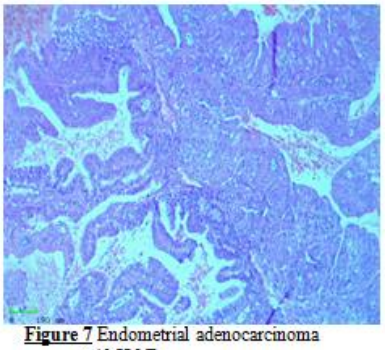

Figure 7 Endometrial adenocarcinoma x40 H&E

Discussion

Abnormal uterine bleeding is a common gynecological complaints accounting for one third of all outpatient gynecological visit [14,18,19].Dilatation and curettage is commonly used in developing countries with limited resources as a standard and often the only mean of assessing abnormal uterine bleeding which can be diagnostic as well as a therapeutic procedure. The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported to be as high as 96% [14]. Histopathological evaluation of the curettage sample is necessary in identifying the cause of abnormal uterine bleeding which may include a wide spectrum of diseases of the reproductive system. When an organic cause of abnormal uterine bleeding cannot be found, then by exclusion, a diagnosis of dysfunctional uterine bleeding is assumed.

Many studies have revealed that occurrence of menstrual disorders of excessive type increased with age [20, 21, 22].The largest group of patients with abnormal uterine bleeding in our study was in age group 41-50 years accounting for 202/525(38.5%) of cases which is in concordance with (Saraswathi et al)(33.5%) [21] (Zeeba et al) (35.9%) [22] and (Abdulla et al)(32.1%) [23] in other studies, however our results were less as compared to(Muzzafar et al) (48.1%) [20] (Baral et al) (47%)[15] and more than (Rasha et al) (26.94%) [24]. An increased number of cases in this age group could be due to the fact that as menopause approaches, decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, results in a low level of

estrogen, which cannot keep the normal endometrium growing. Lesser number of patients was seen in the higher ages may be due to earlier evaluation, detection as well as management of the disease.

Most of patients included in our study were parous 487 (92.8%) cases, while only 38 (7.2%) cases were nulliparous, of which 10 (26.3%) showed endometrial carcinoma which is a high rate when compared with multiparous patient just 4 cases who had endometrial carcinoma (2.1%) (p value < 0.0005). This indicates that nulliparity is an important risk factor for endometrial carcinoma as reported by (Wahda et al)[14] and (Gusberg et al)[25] this could be related to the association of nulliparity with anovulatory cycles that result in increased estrogen exposure and lack of progesterone effect [25].

The amount of body adiposity may be approximat ed by a number of anthropometric measures, including body mass index (BMI: expressed in kg/m^2), waist circumference (expressed in cm) and waist-hip ratio. By far the most commonly reported index in the literature is BMI, its calculation was readily available and served as one of reliable indicator of estrogen excess [26]. Most of our patients 467 (89%) are not obese showing endometrial carcinoma in only one case (0.2%), while only 58 (11%) cases were obese, of which 13 (22.4%) had endometrial carcinoma (p value < 0.0005). Obesity could lead to the development of endometrial cancer by increasing the concentration of circulating estrogens and thus stimulation of growth of the endometrium. This could happen in several ways: by decreasing levels of circulating sex hormone-binding globulin (i.e increasing the level of free estrogen) [27] or by increasing the conversion of androstenedione to estrone that occurs with increased adipose tissue [28].In premenopausal women who are obese this could be an additional risk, since they are more likely to have periods of anovulation and therefore lower opposing progesterone levels, which increases their risk of endometrial proliferation and inadequate shedding of the endometrium[29].

In this study, our patients presented with different types of abnormal uterine bleeding, the commonest presenting feature was menorrhagia (42.7%). Similar findings were shown by (Zeeba et al) (41%) [22]and (Moghal et al) (41%)[30] and was less as compared to (Yusuf et al) (69.65%) [31] and (Muzaffar et al) (51.9%) [20] and more than (Wahda et al) (34%) [14] ,(Bhatta et al) 30.32%) [32] and (Parveen et al) (18%) [33] . However the histopathological diagnosis obtained by dilatation and curettage does not always bear relation to the type of abnormal bleeding or amount of blood loss. This may be due to the fact that most of curettages were performed early with the beginning of the cycle, or because the change may be patchy and may be missed during the blind procedure and the sample may not be representative [34].

In the present study, the histopathological examination of endometrial biopsies showed a pathological change (organic causes)in (38.7%) of the total cases, while (61.3%) shows no definite structural pathology (i.e. dysfunctional causes) this is similar to the findings of (Mirza et al) (43% show organic causes and 57% show dysfunctional causes) [17].

Endometrial hyperplasia was the commonest structural pathological change between the organic causes and

was detected in 122/203 (60.1%) of cases and were revealed in 122/525 (23.2%) of the endometrial biopsies obtained in the current work, similar to finding of (Muzaffar et al) (25%) [20]. While it was lower than those revealed by (Wahda et al) (30.3%) [14] this difference may be present because their study included only the women above (40) years of age, in whom endometrial hyperplasia was more common. On the other hand in our study results agree with their finding regarding the age distribution for cases with endometrial hyperplasia [14] as the most of the cases in our study was in the age group of 41-50 years (48.5%), therefore the importance of histopathological evaluation of the endometrium in women of this age group cannot be underestimated as abnormal uterine bleeding in these women could be due to an underlying hyperplasia .

Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. Although this is variable according to the type of hyperplasia [35,36].From the beginning of the last century, many authors have studied the relation between endometrial hyperlasia and carcinoma and they showed a wide variation in percentage of progression of endometrial hyperlasia to carcinoma according to the type of hyperplasia [37,38,39]. Most common type of endometrial hyperplasia in our study was simple (cystic) endometrial hyperplasia (57.4%) which is comparable to (Zeeba et al) (64.8%) [22] and (Muzaffar et al) (61%) [20].

On the other hand endometrial carcinoma was the least common pathology in our study which was found in (2.7%) of cases and accounting for (6.9%) of the organic lesions, all of them were endometrial carcinoma of endometrioid type and all cases of endometrial carcinoma were detected in postmenopausal period, this figure was in agreement with other studies (Wahda et al) (3.9%) [14] ,(Zeeba et al) (1%) [22] and (Mirza et al) (2%) [17] but it was lower than that reported by (Saraswathi et al) (5%) [21] , (Bhatta et al) (5.74%) [32] and (Dangal et al) (9.5%) [40] this may be attributed to the practice of early childbearing and multiparity in our society .

Although in this study the rate of postmenopausal bleeding declined with increasing age in the postmenopausal period, the peak incidence of endometrial carcinoma occurred in the age group >60 years (64.3%) of malignant cases.

In this study endometrial atrophy was the predominant finding in the women in the postmenopausal period at the age group 51-60 years and >60 year accounting for (53.8%) of cases with atrophy. This means that atrophic endometrium occurred at or around menopause which is comparable to that of (Bani-Irshaid et al) (52%%) [41] and (Gredmark et al) (50%)[35] and it was lower when compared with results shown by other (Caspi et al) (42%) [42].The most frequent complaint of atrophic endometrium is postmenopausal bleeding but it is not known why some patients tend to bleed from an atrophic endometrium while others do not. Anatomical vascular variations, like thin walled veins, superficial to the expanding cystic glands making the vessel vulnerable to injury, as well as abnormal local haemostatic mechanisms in the uterus have been proposed to be the underlying causes. [36].

The incidence of benign endometrial polyps in this study was also high in 41–

50 years age group (47.6%) of cases with polyp, being the second common pathological change in this age after hyperplasia. Lower incidence of the endometrial polyps in the younger age group may be attributed to a possible spontaneous regression mechanism, which is characteristic of the cycling endometrium in reproductive age group. There is significant difference between the endometrial polyp and normal endometrium in receptor expression, cell proliferation and apoptosis regulation. These differences combined with non-random chromosomal aberrations and monoclonality suggests that polyp may provide a suitable microenvironment for the development of malignancy [35,40].

Chronic endometritis usually follows pregnancy, IUCD insertion and abortion. It may be due to viral, chlamydial, gonococcal , tuberculosis and nonspecific infection [1].The detection rate of chronic endometritis in our study was (8.4%) of the organic causes which was in agreement with other studies (Wahda et al) (7.7%) [14] and (Zeeba et al) (6.11%)[22] and it was most common at age group 31-40 years. No specific infection like tuberculosis was noted in any case, this may be explained by the fact that the granulomas may be missed because of their concentrate in superficial layer of endometrium, and the foci of infection are sheded continuously with menstruation. For that reason multiple levels of curetting specimen must be examined if TB endometritis is suspected.

Dysfunctional uterine bleeding is a diagnosis of exclusion in which no specific organic cause can be blamed as the reason for bleeding. In this study most of our patient was found to have this form of bleeding (61.3%). It is more common in early and late years of reproductive life [14] and In most instances dysfunctional bleeding is due to the occurrence of anovulatory cycle that are most common at menarche and in perimenopausal period [21].The commonest histological finding in this group was proliferative followed by secretory endometrium accounting for (49.4%) and (35.4%) respectively, and most commonly found in perimenopausal age group 41-50 years (34.8%), which is comparable to many studies in the world (Zeeba et al) (81.4%) [22] ,(Wahda et al) (81%)[14] and (Saraswathi et al) (71.6%) [21].

Conclusion

Obesity & nulliparity are important risk factors of endometrial hyperplasia and carcinoma and menorrhagia was the commonest clinical features in abnormal uterine bleeding although most of the cases of abnormal uterine bleeding was due to dysfunctional causes the endometrial hyperplasia was the commonest histopathological changes in abnormal uterine bleeding of organic type and the endometrial carcinoma was more common after menopause.

Recommendation

Dilatation and curretage is a relatively sensitive procedure and it would be prudent to obtain endometrial tissue for histological examination especially in peri or postmenopausal patients in areas with limited resources.

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