Diagnostic Value of Endometrial Curettage in Abnormal Uterine Bleeding - A Histopathological Study

Pages with reference to book, From 295 To 299

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Abstract

Endometrial curettings from 458 patients presenting with abnormal uterine bleeding were studied. This included 220 (48%) patients with metrorrhagia, 187 (41%) with rnenorrhagia, 30 (6%) with postmenopausal bleeding, 13 (3%) with intermenstrual bleeding and 8 (1.74%) with polymenorrhagia. The histological findings were correlated with the pattern of abnormal bleeding in five different age groups. In 48.5% of the biopsies, histology assisted in diagnosing the cause of bleeding viz, intrauterine lesion in 25.5% and an ovulatory cycles in 22.9%. The endometrial lesions detected on histopathology included 2 (0.44%) endometrial adenocarcinomas, one (0.21%) carcinosarcoma, one (0.21%) metastatic mucinous adenocarci- noma, 41 (8.95%) benign polyps, 51 (11.1%) endometrial hyperplasia, 15 (3.28%) endometritis and 6 (1.3%) atrophic endometrium. The curettage was found to be of relatively low diagnostic value in menorrhagia and intermenstrual bleeding while its diagnostic yield was high in patients with postmenopausal bleeding and metrorrhagia (JPMA 47: 295, 1997).

Introduction

Abnormal uterine bleeding is a common gynaecological complaint. Endome trial curettage for histological examination is an important step in the evaluation of the cause of abnomral uterine bleeding. Its purpose is to detect local lesions such as incomplete abortion, an endometrial polyp or malignancy and to obtain endometrium for histological examination, so that the effects of ovarian endocrine activity can be assessed throughout the menstrual cycle. This may be of importance because ovulatory and anovulatory uterine bleeding are managed differently. According to some reports endometrial curettage, is over-used as a diagnostic tool and its diagnostic yield is very low[1,2]. Although a number of histopathological studies have been conducted on endometrial biopsies in post-menopausal women[3,4] , only a few studies have been done in relation to other types of abnormal uterine bleeding[5]. Focussing on these issues, this study presents the histopathological changes in endometrium in ditferentclinical types of abnomial uterine bleeding and assesses its diagnostic value.

Materials and Methods

All endometrial curettage specimens received for menstrual disorders, including post-menopausal bleeding, in the Histopathology Department, Dubai Hospital during a 20 months period between January, 1995 and September, 1996 were included in the study. Endometrial curettages done for evaluation of products of conception were excluded as were cases on hormonal treatment and IUCD related menstrual disturbances. The clinical infomiations on age, nationality, menstmal complaints, last menstrual period, hormone therapy and IUCD usage were recorded from the biopsy request toms and if necessary from the patient’s file. The patients were subdivided into five groups according to the pattern of abnormal uterine bleeding i.e. menorrhagia, metrorrhagia, intermenstrual bleeding, i.e,, polymenorrhagia and post-menopausal bleeding. The endometrial specimens obtained by dilatation and curettage, were received in 10% buffered fomialin and processed for paraffin embedding. The sections were stained by routine hematoxylin and eosin (H&E) stain and if required by special stains like Van

Gieson, MGP, PAS, reticulin, aurarnine and Ziehl Neelsen stain. Microscopic evaluation and histogathology reporting were done according to standard criteria[6-8].

Results

The ages of the patients ranged from 20 to 85 years. They were subdivided into five groups. The pattern of bleeding in each age group is shown in Table 1.

Table I. Abnormal uterine bleeding in different age groups.

	20-30 Years	31-40 Years	41-50 Years	51-60 Years	>60	Total	%
Menorrhagia	14	83	84	6		187	40.83
Metrorrhagia	40	80	86	14		220	48.04
Intermenstrual bleeding	2	7	4			13	2.84
Polymenorrhagia	2	1	5			8	1.74
Post-menopausal bleeding			8	11	11	30	6.55
Total	58	171	187	31	11	458	100
	12.66	37.34	40.83	6.77	2.40		100

Maximum - number of patients were in the age group 41-50 years (40.83%). Metrorrhagia was the most frequent pattern of abnormal bleeding occuring in 48.04% of patients. Dubai is a multinational society. Maximum patients were Indians (30.l3%), followed by local UAE nationals (28.16%) and Pakistanis (l 2.66%). The rest were a smaller number of other Arab, Asian and European nationals. The histopathological diagnosis is listed in Table II.

Table II. Histological diagnosis.

Histopathological findings	Menorrhagia	Metrorrhagia	IMB*	Polymenorrhagia	PMB**	Total	%
Secretory	81	25	8	2		116	25.33
Proliferative	37	23	2	2	4	68	14.85
Proliferative (anovulatory)	7	38	2	1		48	10.48
Disordered Proliferative Hyperplasia	7	14		1	1	23	5.02
Menstrual	12	12				24	5.24
Anovulatory withdrawal bleeding	3	26			5	34	7.42
Secretory hypertrophy		1			1	2	0.44
Inactive isthmic basal atrophic	2	6			3	11	2.40
Atrophic	2	2			2	6	1.31
Endometritis	4	11				15	3.28
Polyps: Endometrial	7	20			2	29	6.33
Leiomyomatous	8	3	1			12	2.62
Hyperplasia:							
Simple	12	27		2	1	42	9.17
Complex		2				2	0.44
Atypical		4			3	7	1.53
Endometrial carcinoma		1			1	2	0.44
Adenosarcoma (Carcinosarcoma)					1	1	0.21
Metastatic carcinoma					1	1	0.21
Inadequate sample	5	5			5	15	3.28
Total	187	220	13	8	30	458	100

*IMB- Intermenstrual bleeding
**PMB- Post-menopausal bleeding.

Maximum number of biopsies (25.33%) showed secretory endometiium. A pmliferative endometrium was considered normal if found in the first half of the cycle and was indicative of anovulation if found in the second half of menstnial cycle. Hyperplasia was divided into simple, complex and atypical hyperplasia according to the criteria of Noms and Kurman[7]. Hyperplasia was seen in 51 cases (1 1.14%) (Figure 1 and 2).

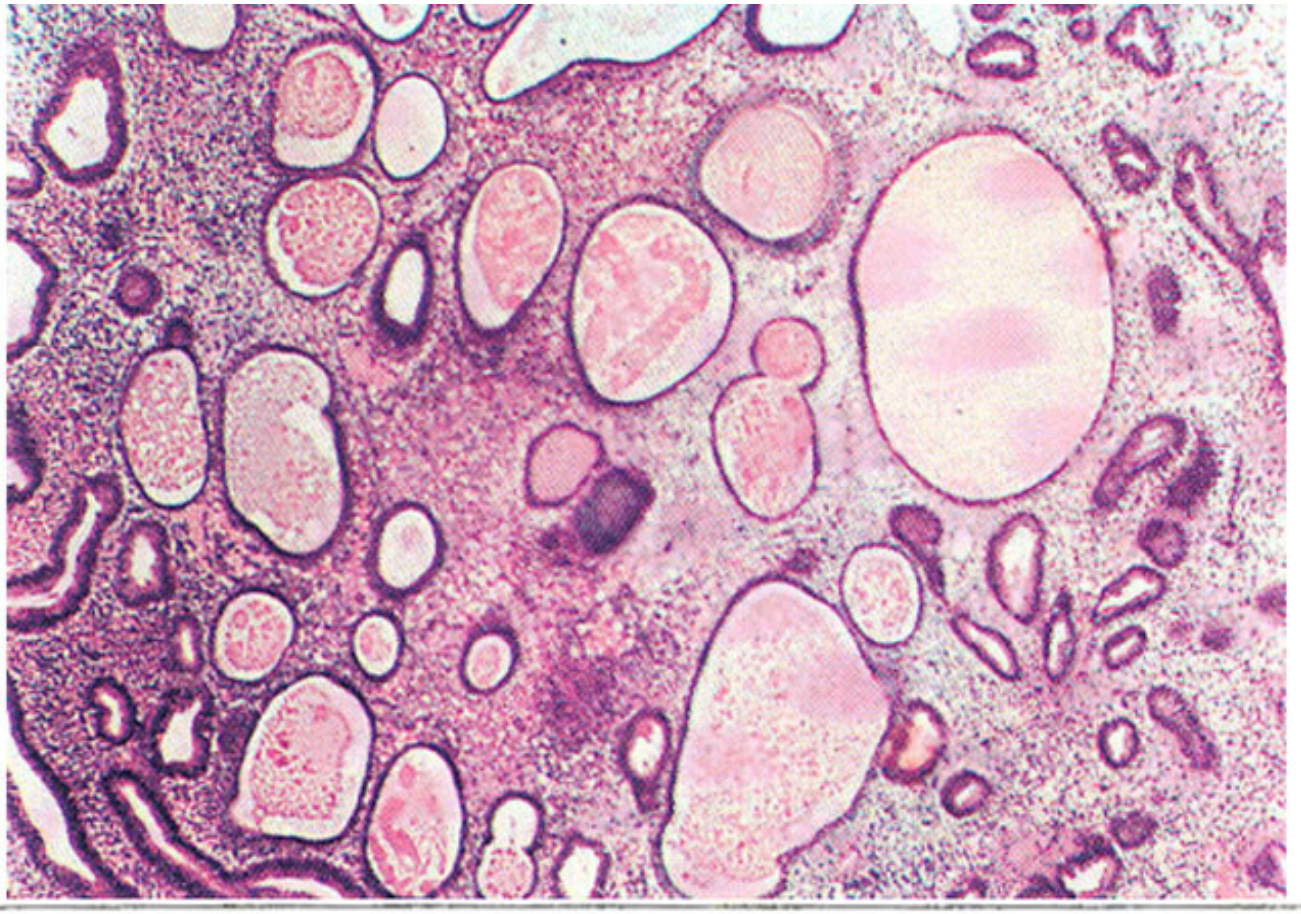

Figure 1. Simple (cystic) endometrial hyperplasia. Cystically dilated glands lined by proliferative epithelium H&Ex50.

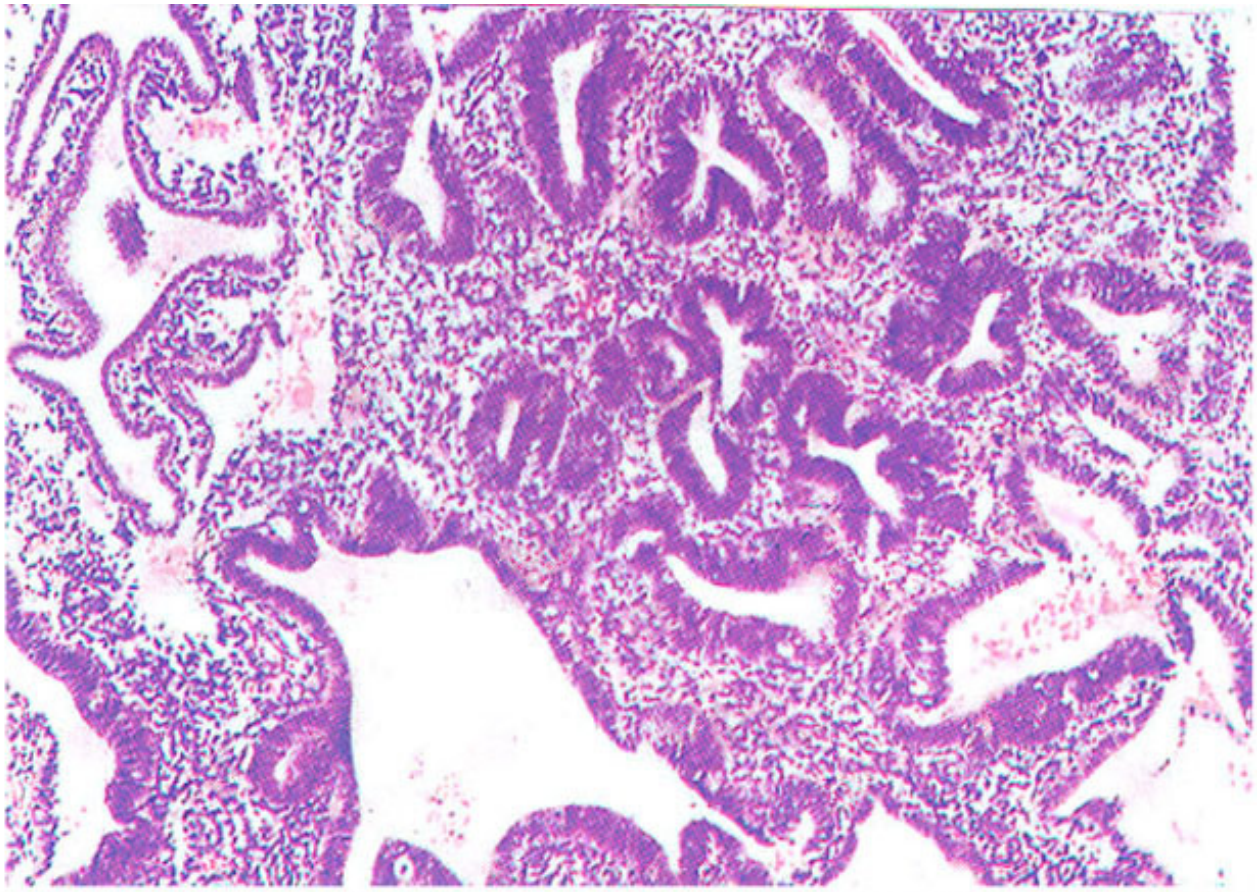

Figure 2. Complex (adenomatous) endometrial hyperplasia. Crowded glands with budding. No atypia is seen. H&Ex125

64.7% cases of hyperplasia presented with metrouhagia, 23.52% with menorrhagia, \'7-34% Wm! P059 m€B°Pau-531 b1¢¢diI|8 (PMB) and 392% with polymenoxrhagia. Majority (49.01%) of patients with hyperplasia were in the age group 41-50 years. The total number of benign polyps was 41 which included 29 endometrial polyps (Figure 3)

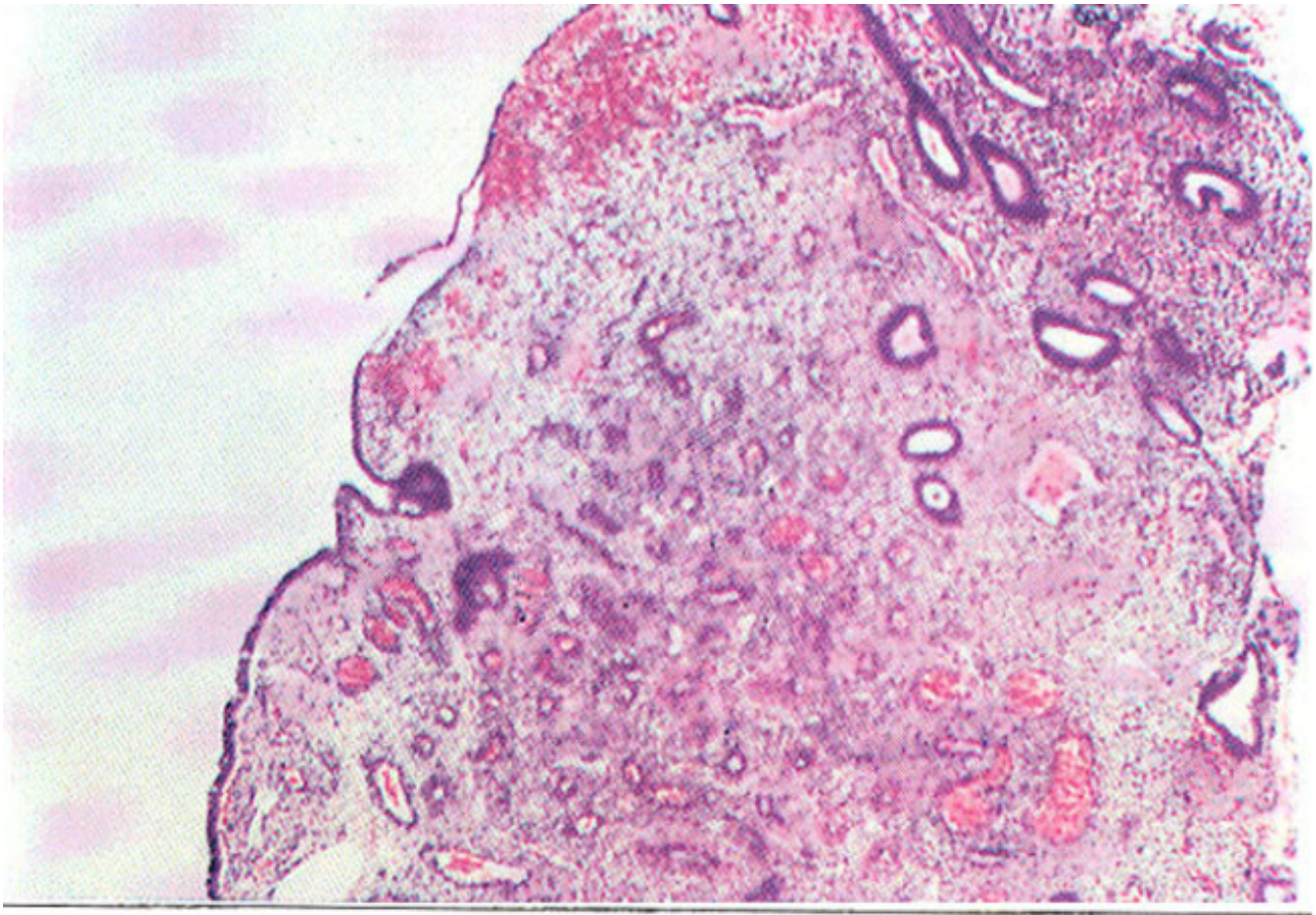

Figure 3. Endometrial polyp. Thick walled blood vessels are present within the fibrous core of the polyp. H&Ex50

and 12 leiomyomatous polyps.

Metrorrhagia was the most frequent complaint with polyps. Chronic endometritis was reported when an infiltrate of plasmaeellswithlymphocyteswas foundintheendometrium. Fifteen (3.27%) patients had chronic endometritis, 11 of these had presented with metrorrhagia, and 4 suffered from menorrhagia. Histopathology revealed two cases of endometrial carcinoma both were well differentiated. One was a typical endometroid adenocarcinoma (Figure 4)

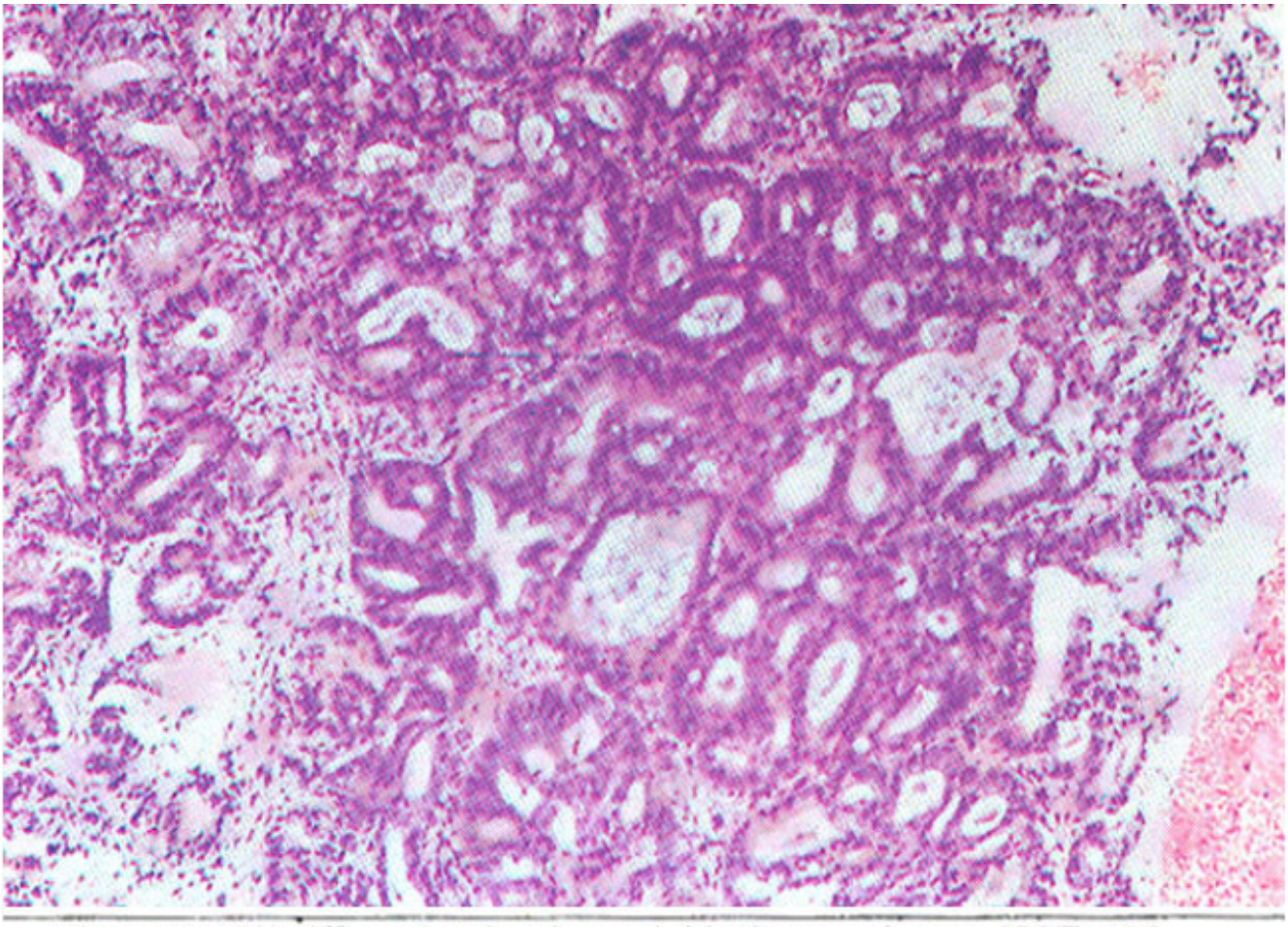

Figure 4. Well differentiated endometrioid adenocarcinoma. H&Ex125.

and had presented with post-menopausal bleeding. The other patient was a 36 year old Pakistani woman, who presented with metrorrhagia. Microscopic examination of endometrial curettings showed secretory carcinoma (Figure 5)

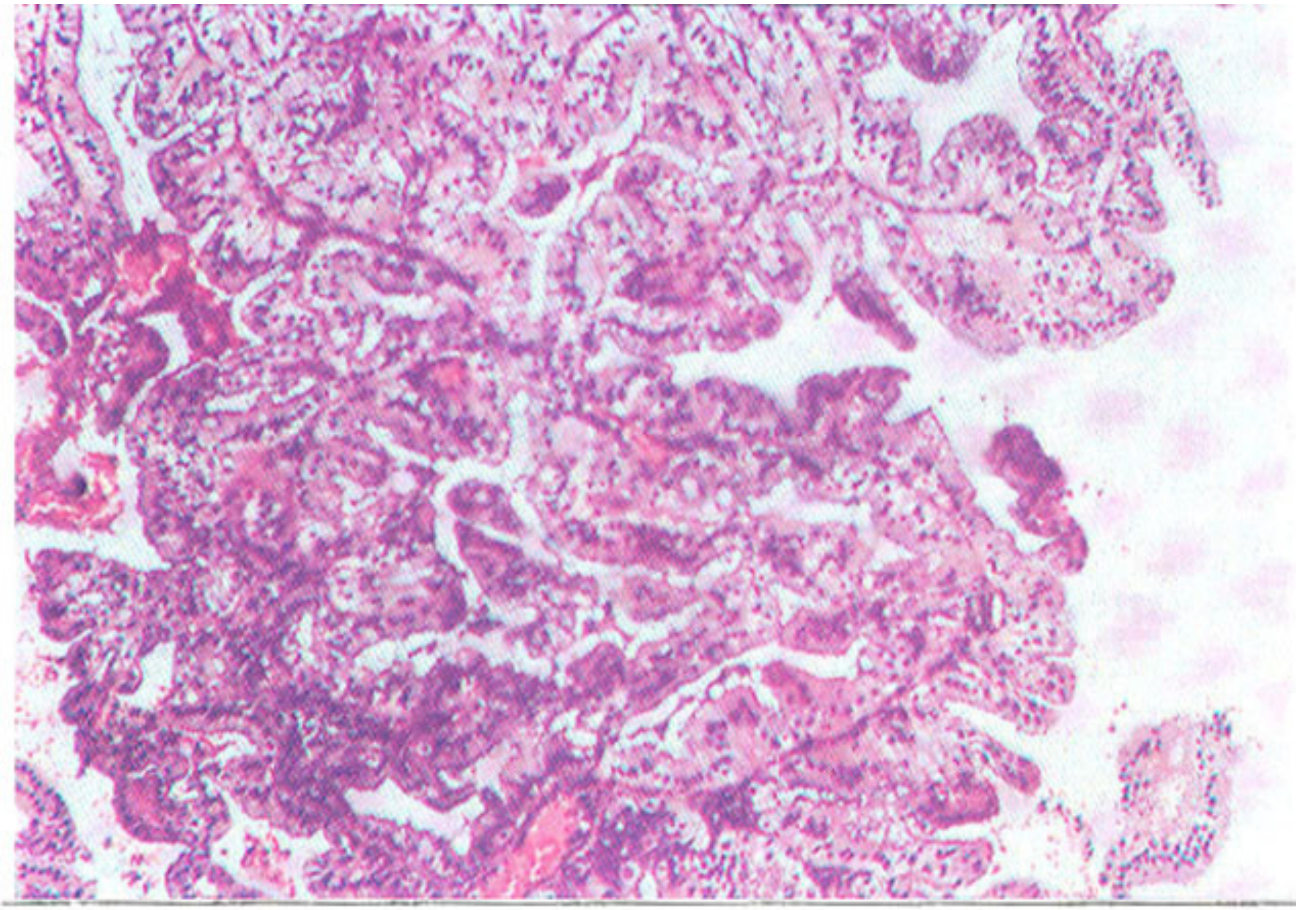

Figure 5. Secretory adenocarcinoma. It is a well differentiated adenocarcinoma with convoluted glands containing cells with irregular depolarized nuclei, often in a single row in abundant secreting cytoplasm. H&Ex125.

which is considered to be a variant of low-grade endornetroid carcinoma. One adenosareoma was diagnosed in an 85 year old Pakistani patient who had presented with post-menopausa[1] bleeding and a tumor protruding through the external 05. One mucinous adenocarcinoma was detected on endometrial curettage in a 63 year old woman with post-menopausal bleeding (Figure 6).

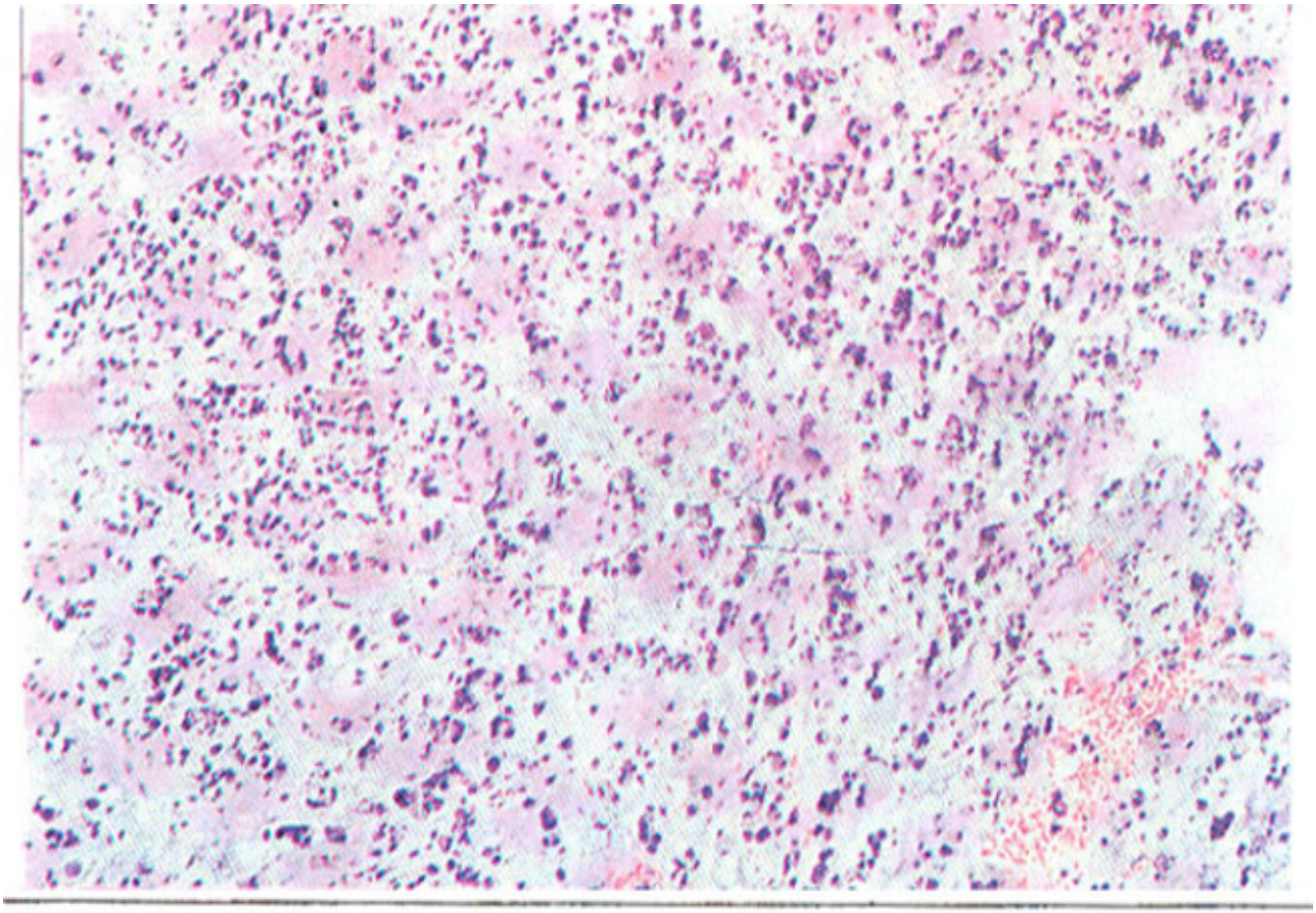

Figure 6. Metastatic mucinous adenocarcinoma. Malignant cells lie in pools of mucin. Some cells have signet ring appearance. H&E x125.

A subsequent laparotomy in this case revealed mucinous adenocarcinoma with signet ring foei infiltrating both. ovaries, tubes and omentum. This appearance was highly suggestive of metastases from GIT to the ovaries and utenis. Out of a total of 227 cases with abnormal histology, 110 (22.92%) biopsies were suggestive of anovulatory disturbances. In such cases a range of histological changes were seen viz., proliferative endometnum in a premenstrual biopsy, disordered proliferative endometrium, a pattern of estrogen withdrawl, endometrial breakdown with proliferative type of glands undergoing breakdown. Majority of cases suggestive of anovulation by histology, presented with metrorrhagia. An interesting feature noted was the presence of smooth muscle fibres in addition to endometrial tissue in 24 cases. An incidental finding was the presence of placental site nodules in two multiparous patients.

Discussion

Abnormal uterine bleeding can occur due to organic causes in the uterus or due to functional disturbances related to ovulation. Endometrial curettage is a routine diagnostic procedure in the evaluation of menstrual disorders. Previous studies have reported a low yield of intrauterine disease by this procedure[1]. In the present study endometrial pathology was detected in a significant number of patients giving better positive yield. 227 (48.46%) out of 458 cases showed histological findings which provided diagnostic explanation for the patient's complaints. Out of these 117 (25.54%) disclosed an intrauterine lesion (Table III)

Table III. 117 positive cases with intrauterine pathology in relation to the age of the patient.

	20-30 years	31-40 years	41-50 years	51-60 years	>60 years	Total
Endometrial carcinoma		1			1	2
Adenosarcoma					1	1
Metastatic carcinoma					1	1
Benign polyps	1	23	12	4	1	41
Hyperplasia						
Simple	7	11	22	2		42
Complex	1	1				2
Atypical		1	3	2	1	7
Endometritis	4	6	3	2		15
Atrophic			2	4		6
Total	13	43	42	14	5	117

and 110 (22.92%) were suggestive of anovulation. Analysis of endometrial histology in different clinical types of uterine bleeding revealed the highest diagnostic yield (36.66%) in patients with post-menopausal bleeding followed by patients with metrorrhagia (31.82%), frequency of intrauterine disease detected in other types of abnormal bleeding was low (Table IV),

Table IV. 117 positive cases with intrauterine pathology in relation to different types of abnormal bleeding.

	Menorrhagia	Metrorrhagia	IMB	Polymenorrhagia	PMB	Total
Endometrial carcinoma		1			1	2
Adenosarcoma					1	1
Metastatic carcinoma					1	1
Benign polyps	15	23	1		2	41
Hyperplasia						
Simple	12	27		2	1	42
Complex		2				2
Atypical		4			3	7
Endometritis	4	11				15
Atrophic	2	2			2	6
Total	33	70	1	2	11	117

17.64% in menorrhagia, 25% in polymenorrhagia and 7.69% in intennenstrual bleeding. No significant pathology was found by curettage in the under 40 age group in previous studies[1,4,9]. None of these 3 studies found endometrial carcinoma in a pre-menopausal woman. In the present study one endometrial carcinoma was diagnosed in a 36 years old woman. Endometrial carcinoma is a disease of older women and its frequency is low in young patients. The prevalence of endometrial carcinoma in women under 40 years has been quoted between 0.85% and 10%[10,11] and under 36 years a predicted frequency of one case of endometrial carcinoma/ 100,000 women/year has been calculated[1] . Besides one endometrial carcinoma, 23 polyps, 13 hyperplasis and 6 cases of endometritis were diagnosed in under 40 age group thereby constituting 48% of the positive cases with intrauterine lesions. Hence contrary to the views of

Hammonds who found no diagnostic advantage from D&C in women less than 40 years, these cases would have been missed if the curettage had not been performed, thereby indicating the usefulness of curettage in patients youngerthan 40 years inour population. However, the diagnostic yield was much less (11.11%) in the under 30 year age group.

No explanation could be given for abnormal bleeding in patients with secretory endomeuium (25.3%). Some of these could be due to abno mtal hormone including inadequate luteal phase. These could notbe studied further and there is a need to evaluate them by careful clinicopathologic correlation of endometrial histology with basal body temperature and with homione status. Secretory hypertrophy observed in two patients aged 45 and 50 is probably due to climacteric hyperfunction of corpus luteum possibly through excessive production of pituitary gonadotrophins or by a corpus luteal cyst[8]. Although hormone estimations are more accurate, histology of endometrium can also give adequate infomiation regarding ovulation. In this context it deserves mentioning that 110 cases of anovulation were diagnosed on the basis of histology, thereby, assisting in a more rational approach to the treatment.

Presence of smooth muscle with endometrial curettage was seen in 24 (5.24%) biopsies. Smooth muscle with endometrial curettings indicates submucous leiomyoma or a deep curettage. It is worth noting that majority of these patients suffered from menorrhagia and the endometrial histology showed no abnormality, it was eitherproliferative or secretory. The significant feature is that the clinical diagnosis in 40% of these cases was leiomyoma. In conclusion, histopathological examination of endometrium obtained by curettage remains a valuable approach to an etiological diagnosis particularly in patients with post-menopausal bleeding and metrorrhagia. The diagnostic benefit is low in cases of menorrhagia and intermenstrual bleeding. The frequency of intrauterine disease revealed by curettage increases with the patient's age. Generally the diagnostic yield is low in patients younger than 30 years. However, endometiial dilation and curettage would be an appropriate approach in case of abnormal uterine bleeding in women over 35 years, particularly if the presentation is with irregular vaginal bleeding.

References

1. Mac-Kenzie, I.Z.. and Bibby, J.G. Critical assessment of dilatation and curettage in 1029 women. Lancet, 1978\',:566—568.
2. Grimes, D..Λ\\. Diagnostic dilatation and curettage: A reappraisal. Am. J. Obstet. Gynecol.,1982,142:1-6.
3. Gredmark, T, Kvint, S., Havel, G. ct al. Histopathological findings in women with postmenopausal bleeding. Br. J. Obstet. Gynecol., 1995;102:133-136.
4. Choc, Y.C., Mak, K.C., Hsu, C. et al. Postmenopausal uterine bleeding of nonorgzmic cause. Obstet. Gynecol, 1985 ;66:225—228.
5. Hammond, R 11., Oppenheimer. l..W. and Saunders, P.G. Diagnostic role of dilatation and curettage in the management of abnormal premenopausal bleeding. Br. J. Obstet. Gynaecol, 1989\',96:496- 500.
6. Hendrickson, MR. and Kempson, R.L. The uterine corpus. in Diagnostic Surgical Pathology, edited by Sternberg, S.S., 2nd ed, New York, Raven Press Ltd, 1994, p. 21 10.
7. Silverberg, SG. and Kurman, R.J. Tumors ofthe uterine corpus and gestational trophoblastic disease. Washington, DC. Armed Forces Institute of Pathology, 1991.
8. Dallenbach—l-Iellweg, G. and Poulsen, H. Atlas ofendomctrial histopathology. Second ed. Verlag, Berlin, Heidelberg, Springer, 1996, p. 4.
9. Ngu, A. and Quinn, MA. Dysfunctional uterine bleeding in women over 40 years ofage. Aust. N.Z.J. Obstet. Gynecol., 1984\',24:30— 33.
10. Barter, R.l-l., Brennan, G., Newman, W. et al. The place of curettage in the diagnosis of carcinoma of the endometrium. Am. J. Obstet. Gyneeol, 1968;100:696-697.

11. Gusberg, SB. and Mulvihill, M. N. Epidemiology ofendometrial cancer. Clin. Obstet. Gynecol, 1986;13:665-672.