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Hysteroscopic Appearance of Endometrial Hyperplasia in Patients Presenting with Abnormal Uterine Bleeding

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Abstract: To study the hysteroscopic appearance of endometrial hyperplasia in women with subsequently confirmed diagnosis of endometrial hyperplasia on HPE. This study was done in department of obstetrics and gynecology at SMS medical college, Jaipur, from FEB 2017 to JUL 2018. 73 women, who presented with abnormal uterine bleeding, underwent hysteroscopy with direct biopsy of the endometrium and sent for HPE. Endometrial hyperplasia was the most common cause of AUB in our study comprising 19.18% (14) of total cases. 13 cases had endometrial hyperplasia on final diagnosis by HPE. Hysteroscopic appearances of these 13 cases were reviewed. In two cases with simple cystic hyperplasia, there were obvious cystic bizarre views. In eight cases, endometrial hyperplasia was characterized by an increase in the size and volume of glands. Hysteroscopic appearance of endometrial hyperplasia includes an increase in the endometrial thickness, polypoidal formation, and increased vascularization, wave like endometrial surface and irregular arrangements of glandular orifices. In two cases there was minimal hysteroscopic abnormal view. In one case which was endometrial hyperplasia with atypia, there were obvious white endometrial elevations in the endometrial lining. Endometrial hyperplasia may produce obvious space occupying lesions in which diagnosis is easy with hysteroscopy, but it may not be very obvious especially in early stages of the disease. Hence, hysteroscopy should be considered in combination with biopsy in AUB to increase its sensitivity as well as positive predictive value in cases with endometrial hyperplasia.
Keywords: Hysteroscopy, Endometrial hyperplasia.

INTRODUCTION

Endometrial hyperplasia is defined as irregular proliferation of the endometrial glands with an increase in the gland to stroma ratio when compared with proliferative endometrium [1]. Endometrial cancer is the most common gynaecological malignancy in the Western world and endometrial hyperplasia is its precursor. The incidence of endometrial hyperplasia is estimated to be at least three times higher than endometrial cancer and if left untreated it can progress to cancer [2, 3]. The most common presentation of endometrial hyperplasia is abnormal uterine bleeding. This includes heavy menstrual bleeding, intermenstrual bleeding, irregular bleeding, unscheduled bleeding on hormone replacement therapy (HRT) and postmenopausal bleeding[2].

Endometrial hyperplasia is often associated with multiple identifiable risk factors and assessment should aim to identify and monitor these factors. Endometrial hyperplasia develops when estrogen, unopposed by progesterone, stimulates endometrial cell growth by binding to estrogen receptors in the nuclei of endometrial cells. Known risk factors for endometrial hyperplasia reflect this aetiology: increased body mass index (BMI) with excessive peripheral conversion of androgens in adipose tissue to estrogen; anovulation associated with the perimenopause or polycystic ovary syndrome (PCOS); estrogen-secreting ovarian tumours, e.g. granulosa cell tumours (with up to 40% prevalence of endometrial hyperplasia); and drug-induced endometrial stimulation, e.g. the use of systemic estrogen replacement therapy or long-term tamoxifen[4-9].

For classification the revised 2014 World Health Organization (WHO) classification [1] is recommended. This separates endometrial hyperplasia into two groups based upon the presence of cytological atypia: i.e. (i) hyperplasia without atypia and (ii) atypical hyperplasia. Previous classification systems for

endometrial hyperplasia were developed based upon histological characteristics and oncogenic potential.

Progression of endometrial hyperplasia to more aggressive pathology is time related. Simple hyperplasia often regresses if the source of exogenous estrogen is removed. However, atypical hyperplasia often progresses to adenocarcinoma unless medical intervention occurs[10]. Less than 2% of hyperplasias without atypia progress to carcinoma, and the mean duration of progression to carcinoma take almost 10 years. Atypical hyperplasia progresses to carcinoma in 23% of cases over a mean duration of four years[11].

In this study of 73 women, who presented with abnormal uterine bleeding normal hysteroscopic findings was recorded in 32 (43.84%) patients, and 41 (56.16%) patients had abnormal hysteroscopic findings. Endometrial hyperplasia was the most common cause of AUB in our study comprising 19.18% of total cases followed by endometrial polyps (13.69%), submucous myoma (8.22%), atrophic endometrium (5.48%), carcinoma endometrium (4.11%), chronic endometritis (4.11%), and misplaced CuT (1.37%) on hysteroscopy. In our study endometrial hyperplasia was found to be associated with HMB in 57.14% of cases.

Endometrial thickness measurement using ultrasound is of minimal use in premenopausal women because specific cutoff levels or morphological features do not accurately define the presence or absence of endometrial hyperplasia or cancer [12]. The role of ultrasound in premenopausal women is restricted to identifying structural abnormalities, as there seems to be an overlap between normal endometrial thickness and that caused by endometrial disease[13].

Outpatient endometrial biopsy has high accuracy in diagnosing endometrial cancer and hyperplasia and should be employed when serious endometrial disease is suspected in both pre and postmenopausal women[14]. For many years dilatation and curettage (D&C) under general anesthesia was considered the gold standard for determining the cause of abnormal uterine bleeding[15]. Less-invasive outpatients' methods, such as Vabra and Pipelle, have similar or worse diagnostic accuracy, due to blind endometrial sampling[16]. At the beginning of the 1990s, transvaginal sonography greatly improved the accuracy of evaluations of endometrial morphology, whereas in the last 10 years hysteroscopy has become the gold standard procedure for evaluating the uterine cavity, particularly if performed in an office setting and if associated with directed biopsies[16-23].

Hysteroscopy can detect focal lesions such as polyps that may be missed by blind sampling [24]. In addition, hysteroscopy can be used to facilitate or complement the endometrial biopsy, especially where sampling is not possible or is nondiagnostic. Directed biopsies can be taken through the operating channel of a continuous flow operating hysteroscope [24, 25] or blindly through the outer sheath after removing the telescope[26]. Diagnostic hysteroscopy can be conducted in the outpatient setting using miniature hysteroscopes and without the need for anaesthesia or vaginal instrumentation [27]. The accuracy of hysteroscopy in diagnosing cancer and hyperplasia in women with abnormal bleeding has been evaluated in a systematic quantitative review of data from 26 346 women[28]. A positive hysteroscopy result (positive LR 60.9) increased the probability of cancer to 71.8% from a pretest probability of 3.9%, whereas a negative hysteroscopy result (negative LR 0.15) reduced the probability of cancer to 0.6%. A hysteroscopy suggestive of endometrial disease (i.e. cancer or endometrial hyperplasia of any type) increased the probability of disease from a pretest probability of 10.6% to 55.2% (positive LR 10.4). A negative or normal hysteroscopy reduced the probability of endometrial disease from 10.6% to 2.8% (negative LR 0.24) [28].

Hysteroscopy without endometrial biopsy is unreliable in differentiating between pre-malignant and malignant disease in the uterine cavity[29]. Endometrial cancer may be found in symptomatic and asymptomatic women with an essentially atrophic or focally hyperplastic endometrium [30, 31], which cannot be detected by ultrasound. In this study, we tried to describe hysteroscopic appearances of endometrial hyperplasia.

METHODOLOGY

This study was done in department of obstetrics and gynecology of SMS medical college, Jaipur, from FEB 2017 to JUL 2018. 73 women underwent hysteroscopy with direct biopsy of the endometrium and sent for HPE. Endometrial hyperplasia was the most common cause of AUB in our study comprising 19.18% (14) of total cases. 13 cases had endometrial hyperplasia on final diagnosis by HPE. Hysteroscopic appearances of these 13 cases were reviewed.

RESULTS

In two cases with simple cystic hyperplasia, there were obvious cystic bizarre views. Panoramic view of endometrial cavity was distorted. Areas of cystic figures were seen in endometrium. [Fig.1]

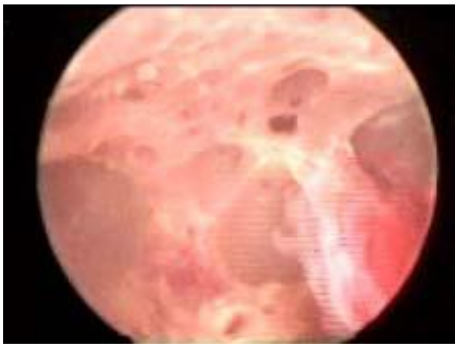

Fig-1: simple cystic hyperplasia

In eight cases, there were white suspicious lesions. Panoramic views were not distorted. Endometrial hyperplasia was characterized by an increase in the size and volume of glands. Hysteroscopic appearance of endometrial hyperplasia included an increase in the endometrial thickness, polypoidal formation, increased vascularization, wave like endometrial surface and irregular arrangements of glandular orifices. Hysteroscopic detection of focal or extensive endometrial thickening, irregular vascular network, architectural distortion and crowding of gland openings, cystic dilatation and gland cyst formation were considered endoscopic features consistent with hyperplasia. Histopathology report was hyperplasia without atypia in these eight cases[Fig-2].

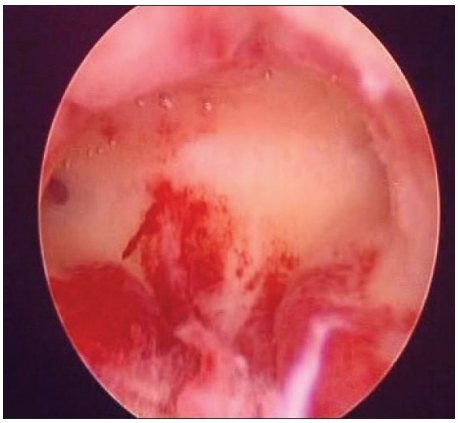

Fig-2: Endometrial hyperplasia without atypia

In two cases, endometrium had atrophic appearance, panoramic view was not distorted. There was no suspicious area but histopathology report was hyperplasia without atypia. In thirteenth case which was endometrial hyperplasia with atypia, there were obvious white endometrial elevations in the endometrial lining. These elevations were friable and shiny white [Fig-3].

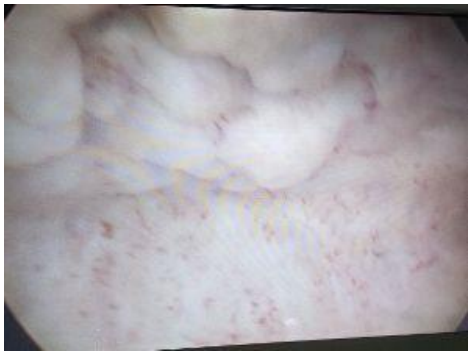

Fig-3: Endometrial hyperplasia with atypia

DISCUSSION

Endometrial hyperplasia may produce obvious intracavitary lesions which can be seen on hysteroscopy. These intracavitary lesions are white, friable and little or no vessels are seen on them. These lesions may distort panoramic view of endometrial cavity. However, endometrial hyperplasia may exist in spite of little or no obvious endometrial lesions in

hysteroscopy. Diagnosis of obvious space occupying lesions and biopsy is easy under direct eye vision with hysteroscopy but diagnostic accuracy of hysteroscopy for endometrial hyperplasia decreases in patients with no obvious intracavitory lesions. The hysteroscopic appearance of endometrial hyperplasia includes an increase in the thickness of the endometrium, its dyshomogeneous regeneration, increased vascularisation and the presence of ciliated images, cystic dilatation, increased bleeding, polypoid formation, necrotic zones and the concentration and irregular arrangement of the glandular openings. In initial stages, endometrial cancer shows a papillary appearance with irregular polylobate excrescences which are friable and partly necrotic or haemorrhagic. Vascularization is irregular and anarchic. Often there is a clear dividing line between cancerous and normal endometrium. Neoplastic lesions can be focal and localized at the tubal cornu.

This study concludes that endometrial hyperplasia may produce obvious space occupying lesions in which diagnosis of endometrial hyperplasia is easy with hysteroscopy, but it may not be very obvious especially in early stages of the disease. For determining hysteroscopic characteristics of these hidden hyperplasias, hysteroscopy should be considered in combination with biopsy to increase its sensitivity as well as positive predictive value. When combined with endometrial biopsy, hysteroscopy can establish an accurate diagnosis in a majority of patients, thereby reducing the burden of hysterectomy.

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