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Original article

Establishing patterns on hysteroscopy in abnormal uterine bleeding (AUB)

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ABSTRACT

Introduction: Pattern recognition of various phases of normal endometrium and endometrial pathologies during hysteroscopy has many advantages. It would help to triage women with AUB, so as to be selective with biopsies and curettages. Recognition of normal variant or benign lesion would reduce burden to the pathologist by decreasing the number of unnecessary sampling. It will also decreases anxiety of the patient as the report/prognostication can be instant in many cases.
Material and methods: This prospective, double blind, correlation study was carried out in the teaching hospital with a sample population of 70 women presenting with AUB who underwent hysteroscopy and endometrial sampling. We identified patterns of endometrium which can used to predict six endometrial pathologies which were later correlated with the final histological diagnosis.
Results: There was good correlation between hysteroscopic patterns and histopathology report, 33% of starry sky appearance correlated with atrophic endometrium, 87% of tongue shaped projections correlated with endometrial polyp, 44.4% of pebble stone appearance correlated with myomatous polyp, 50% of polypoidal pattern correlated with endometrial hyperplasia. 100% correlation was seen in strawberry appearance, pattern for secretory endometrium and cerebroid appearance which was pattern designated to endometrial carcinoma.
Conclusion: Hysteroscopic pattern recognition is a useful concept to triage women who require sampling for histopathological diagnosis.

Introduction

Various endometrial pathologies contribute to a large proportion of cases of abnormal uterine bleeding (AUB) during the reproductive years as well as after menopause. Hysteroscopic visualization of endometrial cavity has revolutionized the detection and management of endometrial pathologies in last few decades.

Hysteroscopy is a simple, safe, well tolerated and reliable procedure in the diagnosis of AUB across all age groups.[1] It has the potential to drastically reduce the need for conventional curettage, thereby increasing patient satisfaction and lowering costs.[2]

Although several hysteroscopic features of endometrial hyperplasia or cancer have been established in the past, including uneven surface, irregularity of endometrial glands, polypoid pattern, papillomatous pattern, and abnormal endometrial vessels,[3–6] no study till date to our knowledge has focused on using a specific named pattern to establish a diagnosis.

Pattern recognition of various phases of normal endometrium and endometrial pathologies during hysteroscopy has many advantages. It would help to triage women with AUB, so as to be selective with biopsies and curettages. Recognition of normal variant or benign lesion would reduce burden to the pathologist by decreasing the number of unnecessary sampling. It will also decreases anxiety of the patient as the report/prognostication can be instant in many cases.

With this idea the present study was conducted to evaluate the role of pattern recognition on hysteroscopy in cases of AUB by correlating it with histopathology. The patterns which were thought of based on our experience were analysed to determine the

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efficacy (in terms of sensitivity, specificity, PPV, NPV) of pattern recognition on hysteroscopy for endometrial variants and pathologies.

Material and methods

Patient selection

This prospective, double blind, correlation study was carried out in the teaching hospital during a span of 20 months (one year and 8 months).The study protocol was approved by institutional ethics committee (IEC 260/2015). Study population was recruited from women attending the Gynaecological Outpatient Clinic with the complaint of abnormal uterine bleeding (AUB). The recruited cases included those where myometrial, cervical and endocrinological causes of AUB were ruled out and patients were planned for hysteroscopy and endometrial sampling. Thus a total of 74 women were included in the study. A written informed consent was obtained from all of them.[1]

Hysteroscopy

All hysteroscopies were performed under regional analgesia, with a Hopkins II, 30-degree telescope and 2.9 mm working channel (Karl Storz, Tuttlingen, Germany). Glycine was used as a liquid distension medium. All examinations were video assisted.

Establishing patterns

Based on our experience of one year in hysteroscopies and their histology follow up we identified patterns of endometrium which can used to predict six endometrial pathologies. These included: i) Starry Sky: Atrophic endometrium, ii) Strawberry: Secretory endometrium, iii) Tongue shaped projections: Endometrial polyps, iv) Pebble stones: Myomatous polyps, v) Polypoidal pattern: Endometrial hyperplasia (Simple), and vi) Cerebroid pattern: Endometrial carcinoma (Fig. 1). The examiner examining the pattern during hysteroscopy was not provided with the clinical details (like phase of menstrual cycle or pattern of bleeding).

Histology analysis

Having noted down the pattern on hysteroscopic examination, a sample from the representative area of the endometrium was obtained and sends to the histopathologist for analysis. The histopathologist was also not made aware of the hysteroscopic pattern.

Results

A total of 74 women who fulfilled the inclusion criteria were recruited for the study. However four samples had to be excluded from analysis as the final histopathology report was inconclusive.

The mean age of women in our study was 48.9 ± 10.9 years. Most of the women (95.7%) were multiparous, only 3 were nulliparous. A total of 14 (20%) women were menopausal in our study population (Table 1).

Fig. 2 represents the correlation between our hypothesized hysteroscopic patterns (discussed above) and the histopathology report of endometrial sampling. We found that out of 6 women who had starry sky appearance on hysteroscopy only 2 had atrophic endometrium while 4 endometrium among this group were reported as proliferative endometrium on histopathology. A total of 7 women had strawberry appearance on hysteroscopy and all of them had secretory endometrium on histopathology (100% correlation). Tongue shaped projections on hysteroscopy were noted in 23 cases, out of which 20 were histologically reported as endometrial polyp, while 3 reports said that the tissue biopsied were negative for polyp. Pebble stone appearance was seen in 9 women on hysteroscopy, 4 had fibroid, 4 had endometrial polyp and one was diagnosed as endometrial hyperplasia on histopathology. Polypoidal pattern was noted in 12 women, out of which 6 had hyperplasia, 2 had endometrial polyp, 2 had proliferative endometrium and 2 also had endometrial carcinoma on histopathology. All 4 women who had cerebroid appearance on hysteroscopy had endometrial carcinoma on histopathology.

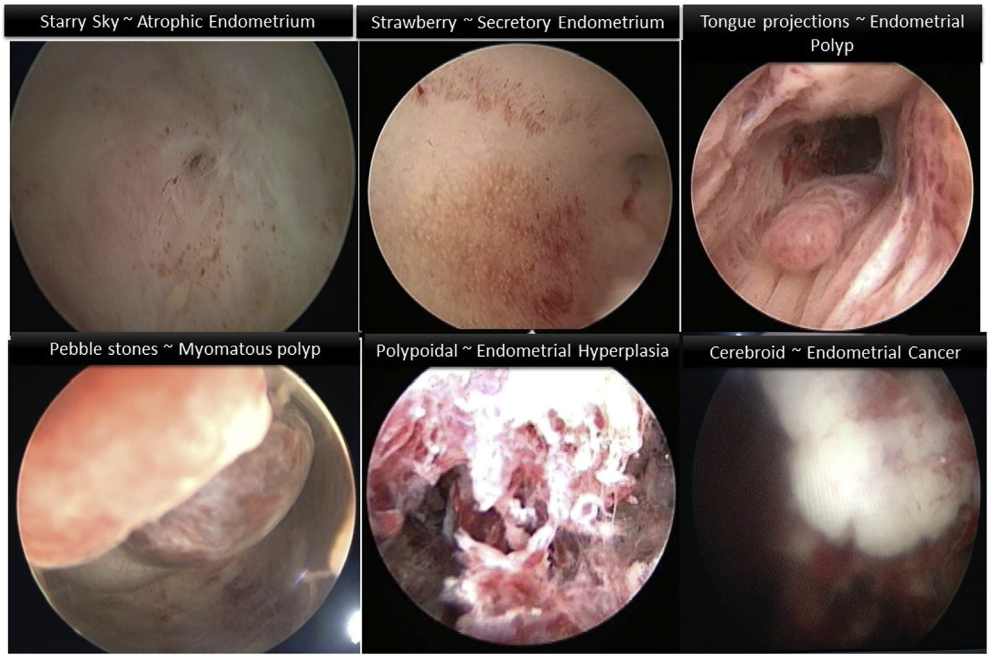

Fig. 1. Various hysteroscopic patterns seen on hysteroscopy.