APPROACH TO THE INTERPRETATION OF ENDOMETRIAL BIOPSIES AND CURETTINGS
Endometrial Biopsy specimen

Dilatation and curettage
(under general anaesthesia)

outpatients by pipelle or other
Endometrial biopsy: A catheter is inserted into the uterus through the vagina to remove cells from the uterine lining for examination.
Clinical indications for endometrial biopsy

- evaluation of infertility/preparation for in vitro fertilization
- evaluation of abnormal vaginal bleeding (postmenopausal or during the reproductive years)
- follow-up of a previous cytologic or histologic diagnosis
Clinical history

Age

Menstruation

Indication of biopsy

Hormonal or Tamoxifen
Evaluation the Adequacy of Endometrial biopsy:

An adequate specimen should contain both glandular and stromal tissue from the fundus.

- The exact amount of such tissue will vary with:
  - The clinical indication for the procedure,
  - The age of the patient
  - The pathologic diagnosis
The presence of nonendometrial tissue in an endometrial sampling specimen should be indicated in the surgical pathology report. **Endo & Ectocervix** with diagnosis of any abnormality if present (such as cervical intraepithelial neoplasia or a submucous leiomyoma)

The presence of **myometrium** (important in curettage specimen after abortion as indicated a higher risk for subsequent intrauterine synechiae (Asherman syndrome))
Adipose tissue If a “floater” or pickup from another case can be ruled out the presence of adipose tissue is at least strongly suggestive of perforation of the uterus It is of critical value” (to be reported immediately and directly to the clinician)

Gestational tissue includes trophoblast as well as intact chorionic villi and fetal parts.
strips of endometrial glands with a pseudopapillary architecture.
Artefacts in endometrial biopsy specimens:

Several common artefacts are observed in endometrial biopsy specimens. Some of these may be misinterpreted as endometrial hyperplasia or even as carcinoma if not appreciated to be artefactual.
Telescoping or gland-within-gland appearance, a common artefact in endometrial biopsy specimens.
Compression artefacts with moulding of glands. Tearing of the tissue is seen around the glands.
An artefact that is especially common with, but not exclusive to, biopsy specimens from outpatients is the presence of superficial strips of endometrium with a pseudopapillary architecture.
Endometritis: may result in symptoms of abnormal uterine bleeding

- **Criteria for a diagnosis of endometritis:**
  
  - The presence of plasma cells, just beneath the surface glands
  - An endometrium that exhibits a disturbance in maturation—for example, focal areas that are out of cycle with other areas, stromal oedema
  - A spindle-cell alteration of the stroma, especially around glands

**Important note:**

Plasma cells may be present in the stroma of endometrial polyps and also in association with an endometrial malignancy
Endometritis with plasma cells in the stroma and a spindle-cell appearance.
Endometrial polyps:
it is a common cause of abnormal bleeding in pre-
postmenopausal women
The diagnosis is straightforward if the gynaecologist
aware about the presence of polyp
The gynaecologist may believe that a polyp is present,
but histological examination shows a cyclical
endometrium, often secretory in type
the pathologist should always consider the possibility
of a polyp.
On examination under low power, the initial clue to the presence of a polyp is often the admixture of fragments of a normal cyclical endometrium and fragments that are morphologically different.

The morphological feature often seen in polyp:
- Fibrous stroma
- Collections of thick-walled stromal blood vessels
- Glandular architectural abnormality (often in the form of dilated glands with unusual shapes and focal crowding) with variable proliferative activity
- Various epithelial metaplasias.
endometrial polyp showing cystically dilated glands and a fibrous stroma with thick-walled vessels
Effects of hormones on the endometrium

it is essential that the clinician supplies details to the pathologist regarding any hormone treatment.

those that contain both oestrogen and progesteron (most modern hormone replacement treatment regimens), characteristically result in a weak or poorly developed secretory endometrium
Progesteron-only compounds result in a characteristic morphological appearance with atrophic or weak secretory-type glands set in an expanded stroma that exhibits varying degrees of pseudodecidualisation which is often most prominent just beneath the surface glands and is usually accompanied by an inflammatory cell infiltrate.
Intrauterine device
This often produces a polypoid surface and other morphological features, including **reactive atypia of the surface glands**, **epithelial metaplasias**, **deposition of stromal haemosiderin calcification**, **necrosis** and **stromal myxoid change**.
Effects of Tamoxifen on the endometrium

- adjuvant therapy in the management of breast cancer as antiestrogenic agent.
- tamoxifen may exert a proliferative effect on the endometrium
- Tamoxifen may result in the full spectrum of endometrial hyperplasias and in the development of endometrial cancers
Tamoxifen-related endometrial polyp: gross appearance, microscopic appearance
Endometrial hyperplasia

Potential benign mimics of endometrial hyperplasia:
- Artefacts
- Cystic atrophy (lacking of proliferative activity)
- Lower uterine segment endometrium
- Disordered proliferative endometrium
- Secretory endometrium or Arias–Stella effect
- Benign papillary proliferations
- Endometritis
- Endometrial polyps
many pathologists use three categories of endometrial hyperplasia—simple, complex and atypical.

Morphological features of endometrial hyperplasia

In a simple hyperplasia

the normal gland to stroma ratio is maintained or there is slight increase.

The endometrium shows proliferative activity, with cystically dilated glands of irregular sizes and shapes. Some glands may exhibit “out-pouchings”, “infoldings” and “budding”.

There is no nuclear atypia, the nuclei being oval and maintaining their orientation to the underlying basement membrane.
A major problem is the distinction between simple endometrial hyperplasia and disordered proliferative endometrium.

In complex hyperplasia

- There is an increase in the gland to stroma ratio, glandular crowding.
- The glands are often closely packed although some stroma usually remains between individual glands.
- The glands show proliferative activity
- There is no nuclear atypia.
In atypical hyperplasia is one of the most subjective and problematic areas in gynaecological pathology as surgery is generally undertaken for atypical hyperplasia, whereas hormone treatment is common for non-atypical hyperplasia.

Nuclear atypia may be subtle and in its evaluation it is useful to compare the cytology of the atypical glands with that of the residual normal endometrial glands.
The atypical features including cytoplasmic changes (more abundant and increased esinophilia)

While nuclear features are: stratification, loss of polarity and become rounded with prominent nucleoli.
References


Thank you