

APPROACH TO THE INTERPRETATION OF ENDOMETRIAL BIOPSIES AND CURETTINGS

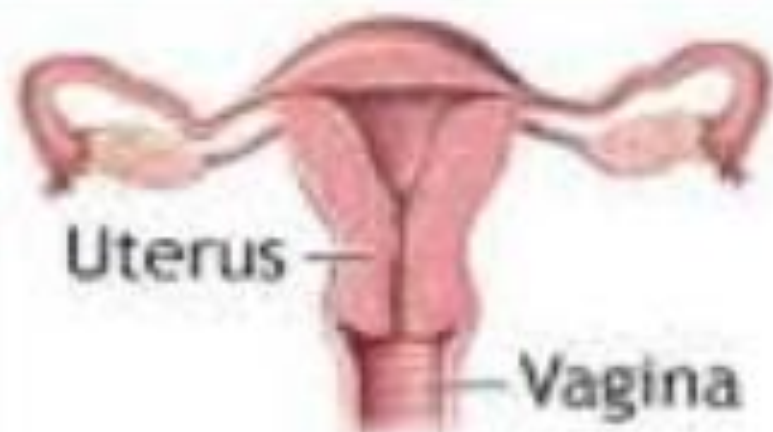
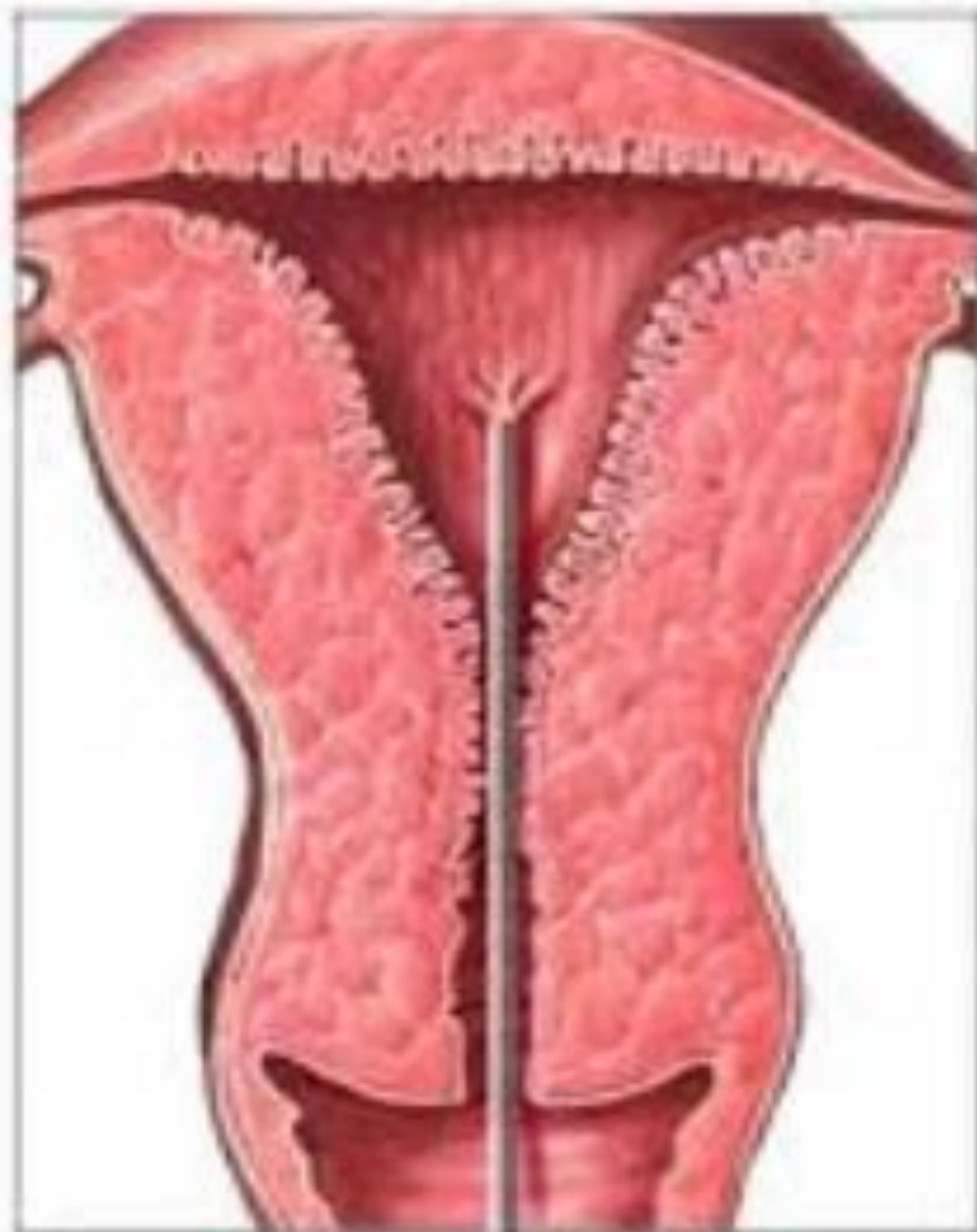
Endometrial Biopsy specimen

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graph TD; A[Endometrial Biopsy specimen] --> B["Dilatation and curettage  
(under general anaesthesia)"]; B --- C["outpatients by pipelle or other"]
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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

Catheter

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

Age

Menstruation

Clinical
history

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.

ENDOMETRIAL BIOPSY
(PELLE OR CURETTAGE)

NO ENDOMETRIAL
TISSUE

SUPERFICIAL STRIPS OF
ENDOMETRIAL GLANDS

INTACT ORGANISED
TISSUE

INADEQUATE
SAMPLE

UNASSESSABLE
SAMPLE

TYPE SPECIMEN

ABNORMAL
ULTRASOUND
OR STRONG
CLINICAL SUSPICION

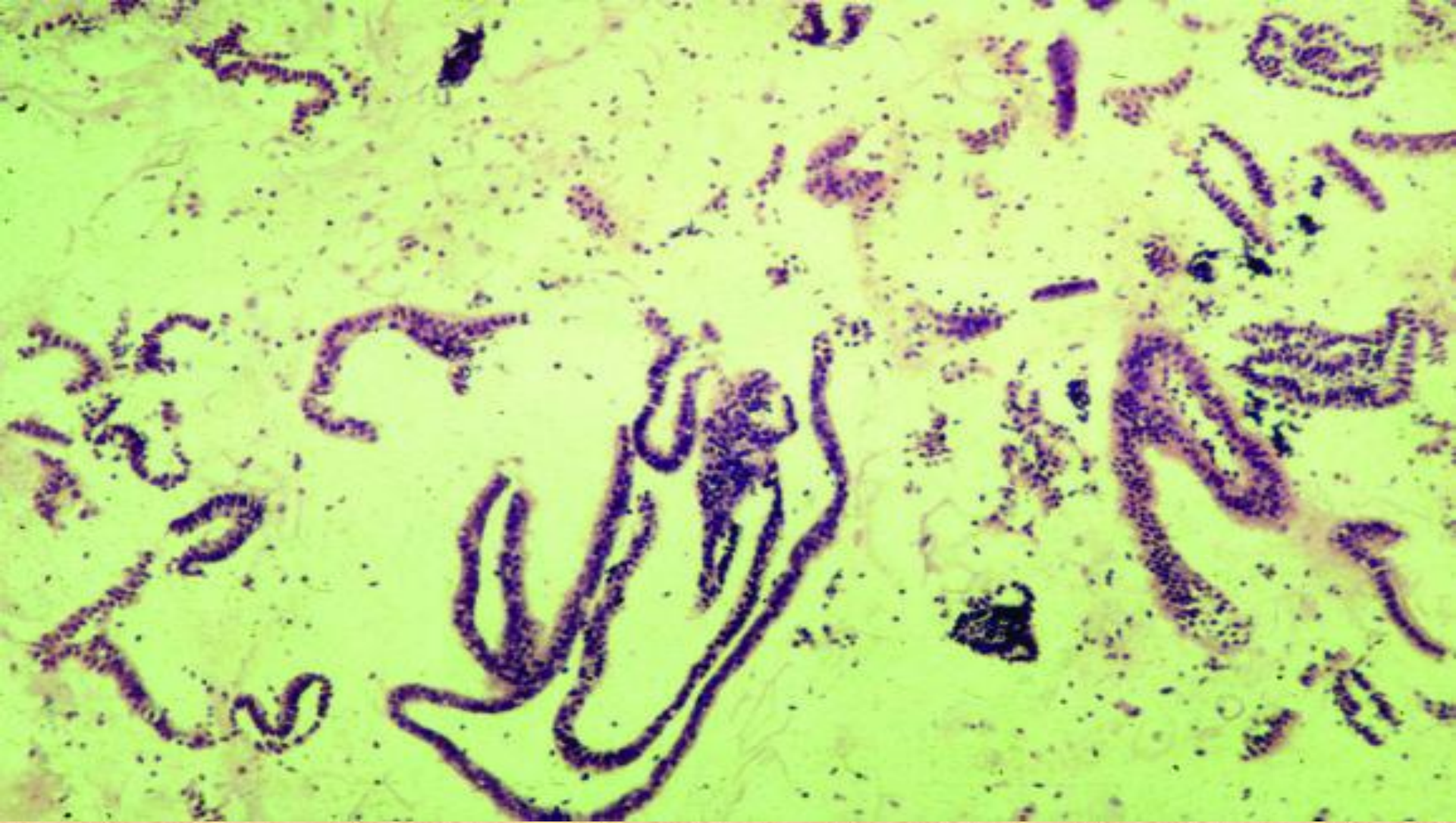
NORMAL
ULTRASOUND

ABNORMAL
ULTRASOUND
OR STRONG
CLINICAL SUSPICION

REBIOPSY

NO REBIOPSY

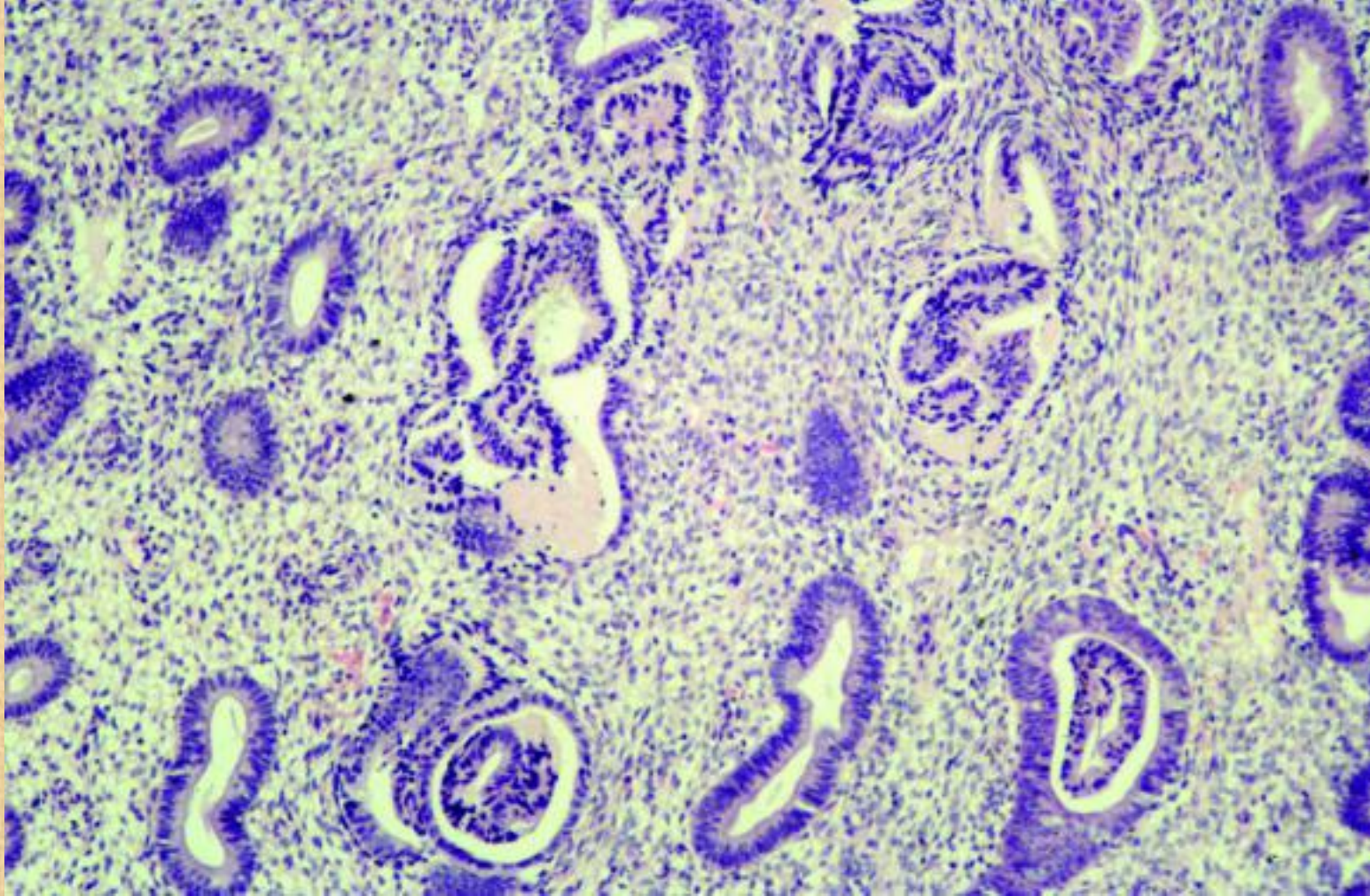
REBIOPSY



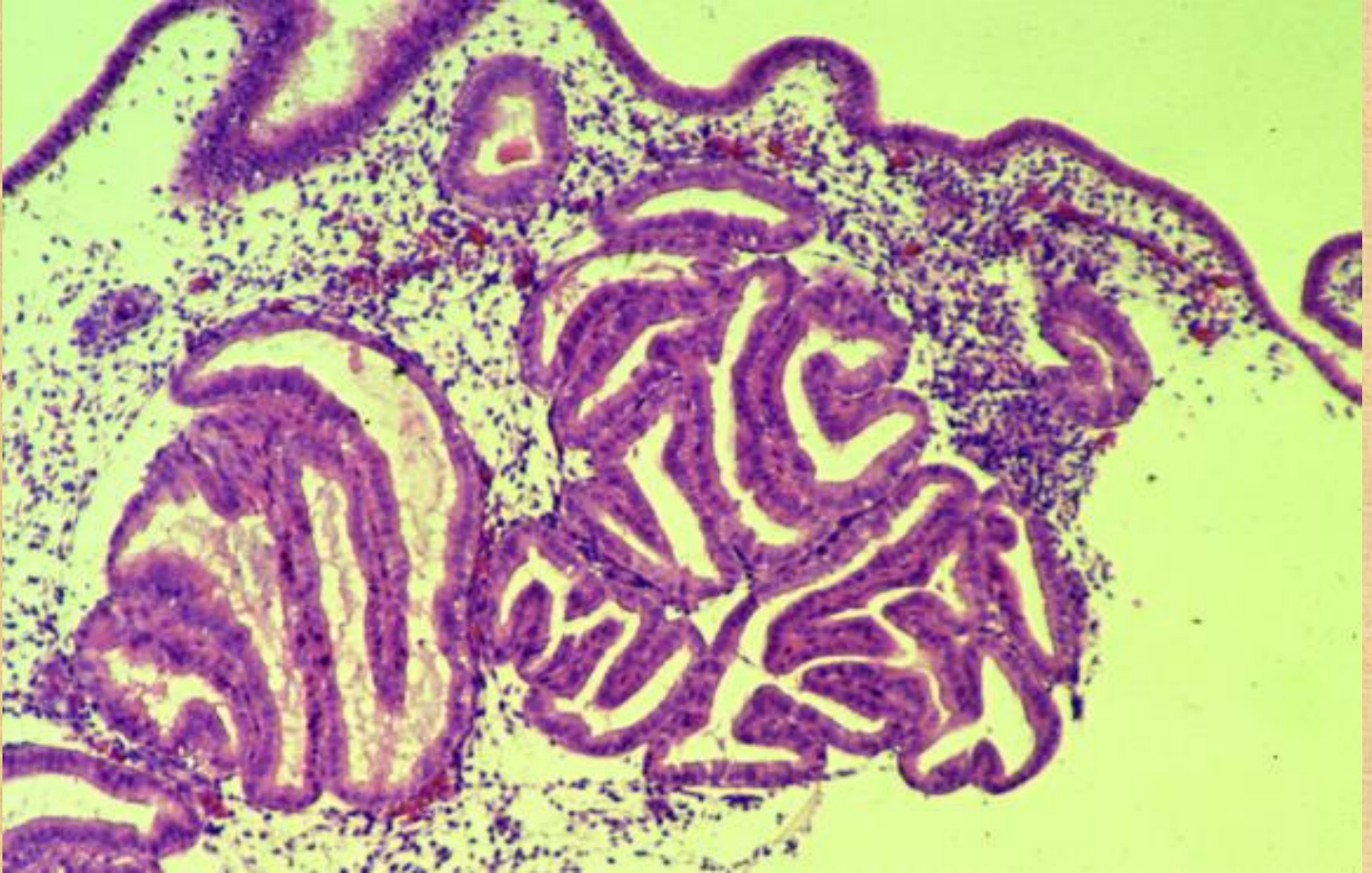
strips of endometrial glands with a pseudopapillary architecture.

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.

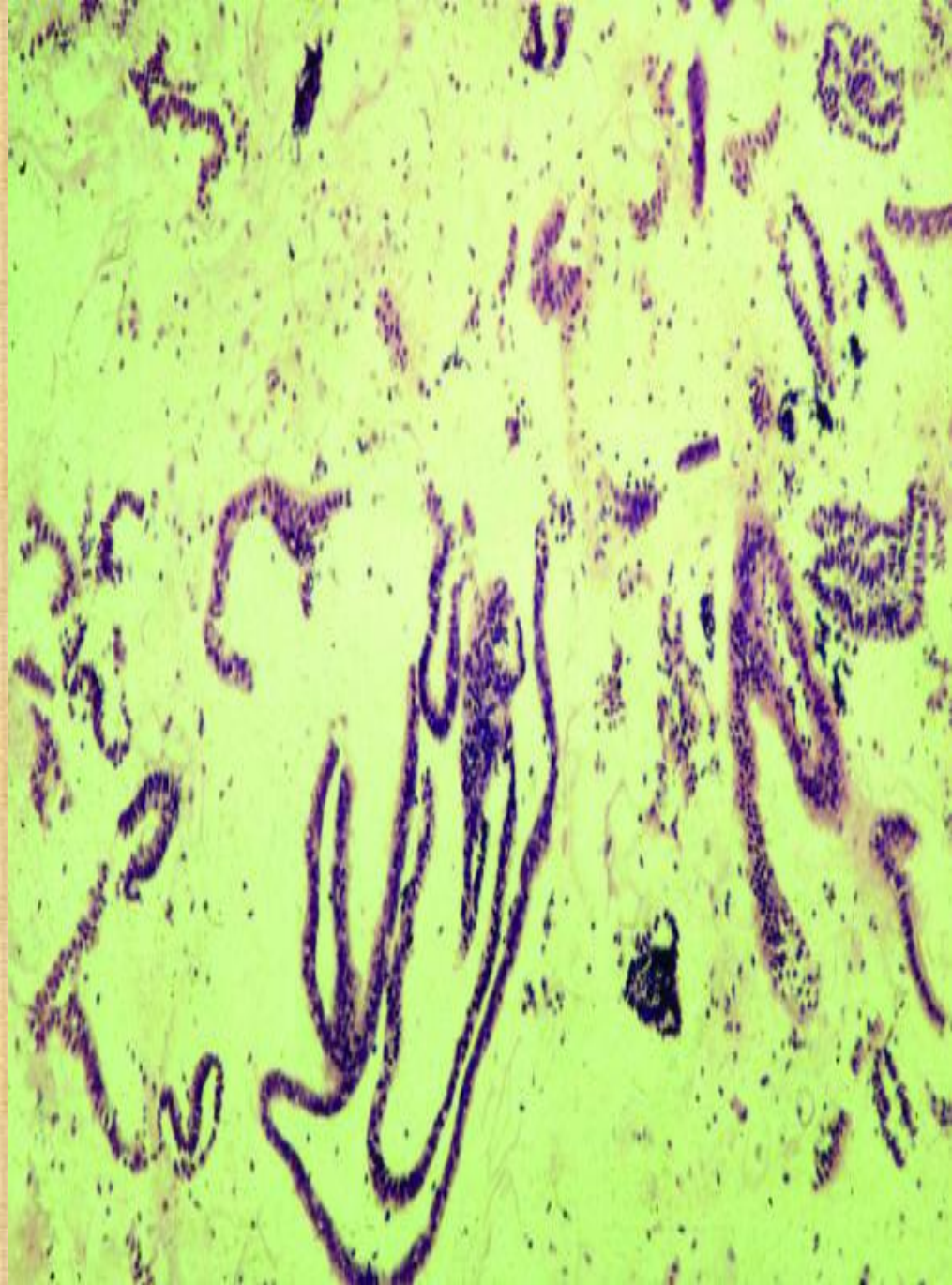


**Telescoping or gland-within-gland appearance,
a common artefact in endometrial biopsy
specimens.**



**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:

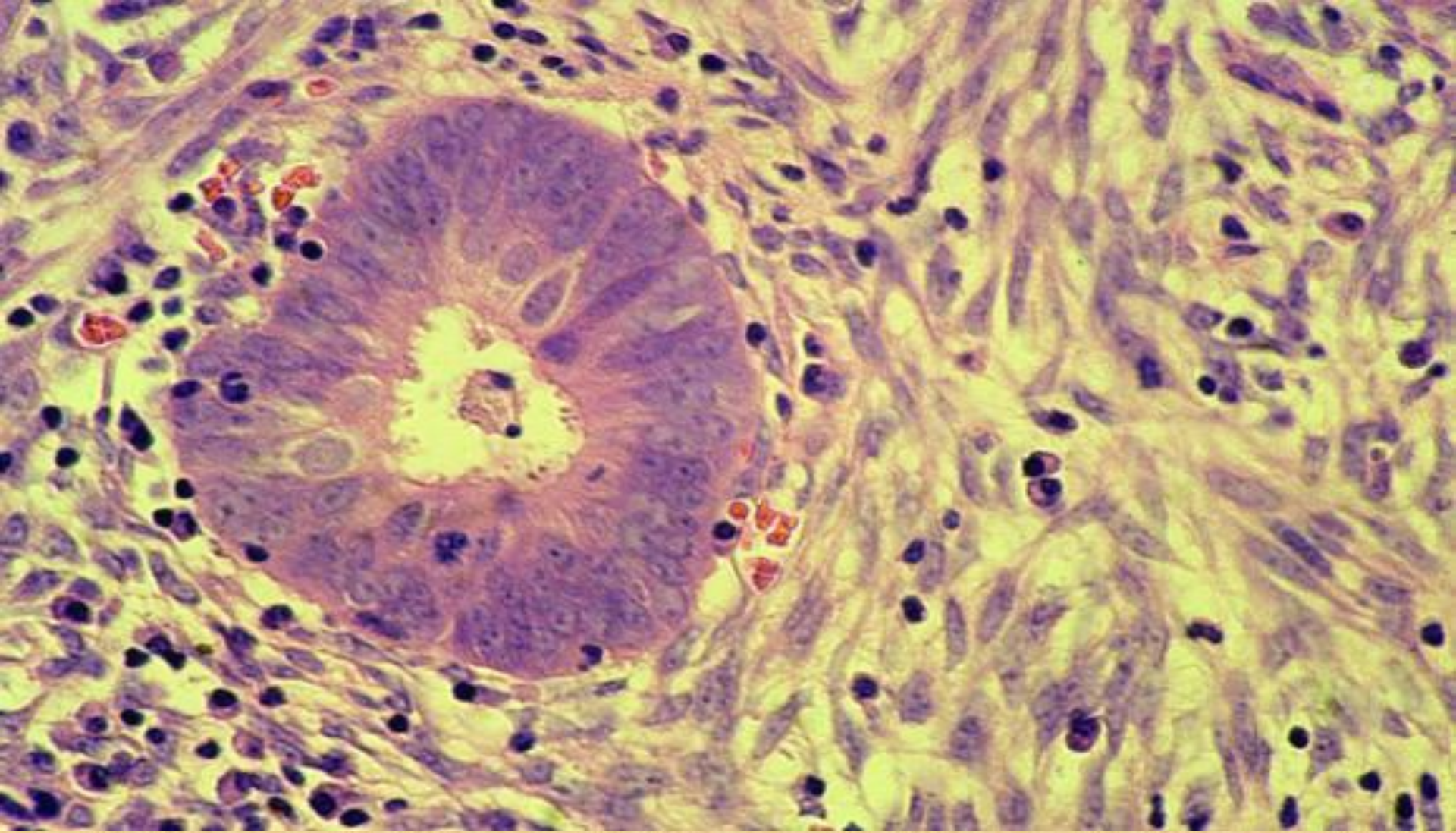
may result in symptoms of abnormal uterine bleeding

❖ 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

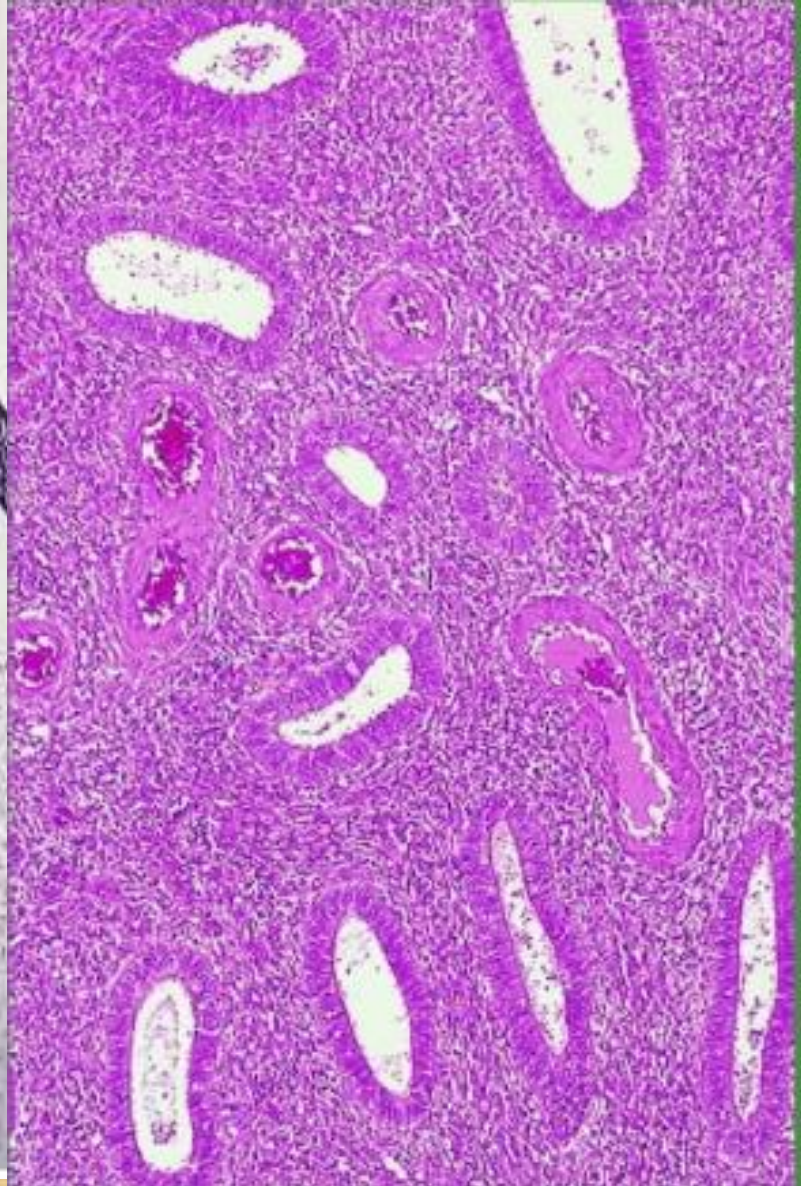
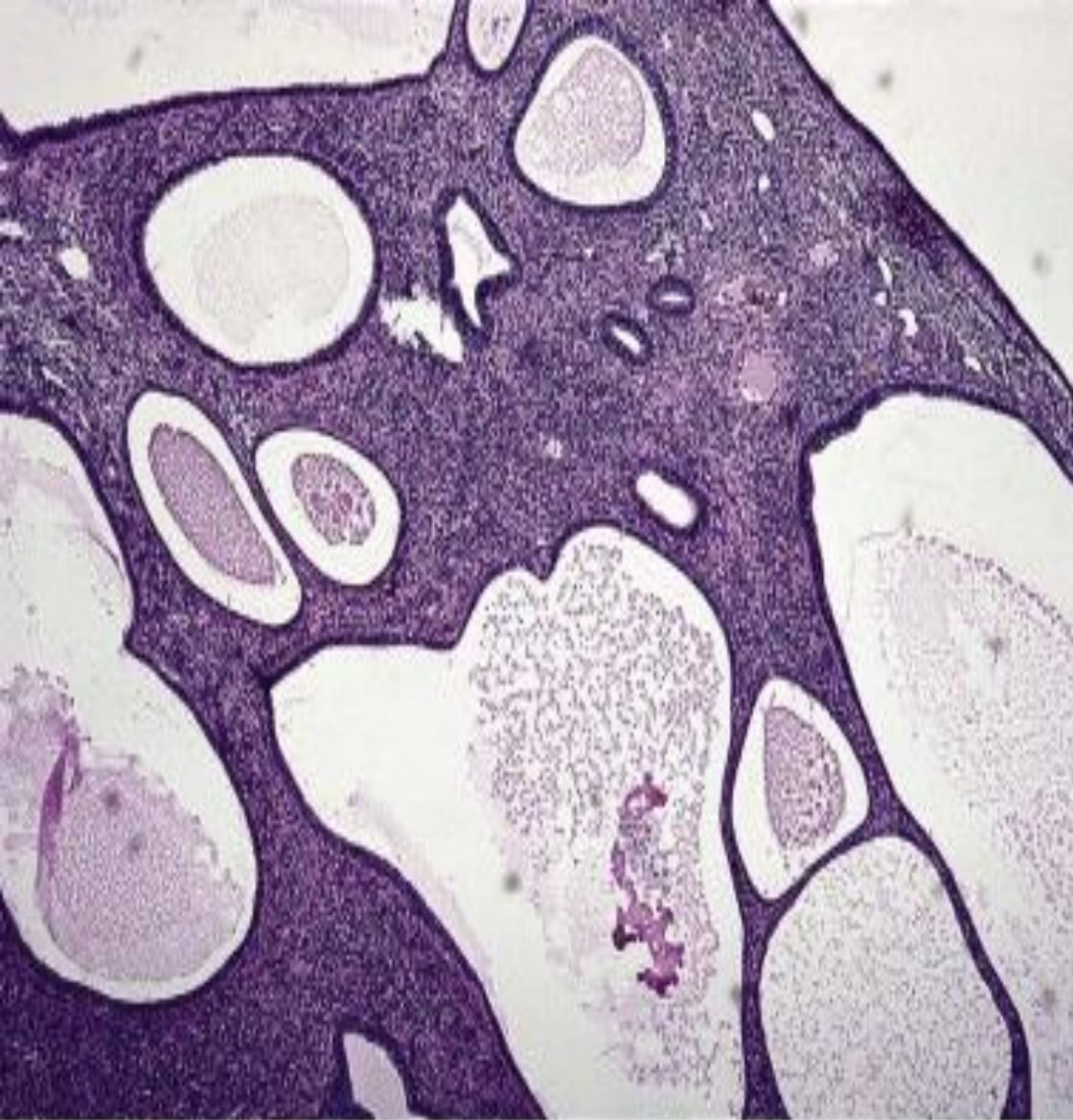
The diagnosis is straight forward if the gynaecologist aware about the presence of polyp

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,

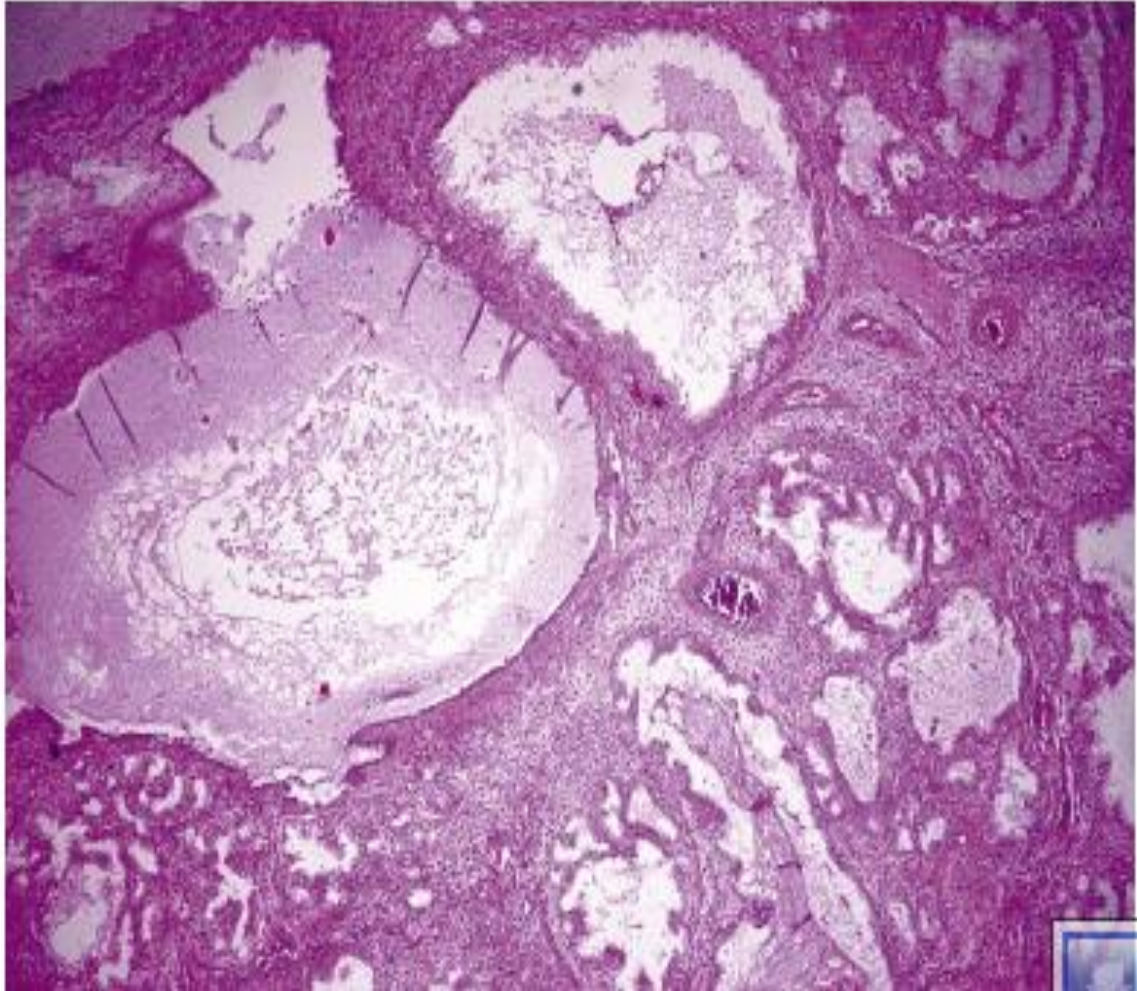
deposition of stromal haemosiderin

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

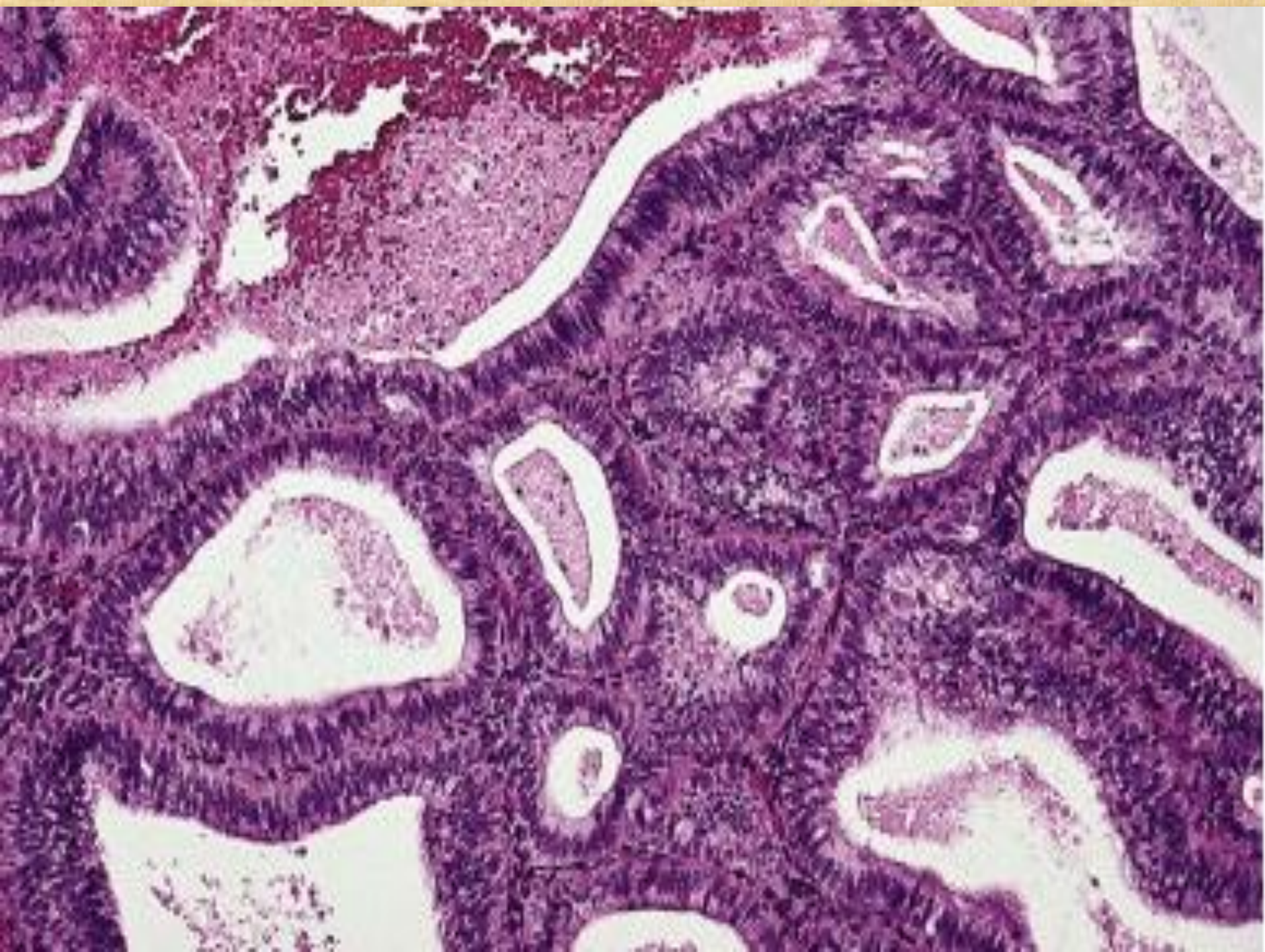
- ▣ Secretory endometrium or Arias–Stella effect

- ▣ 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.



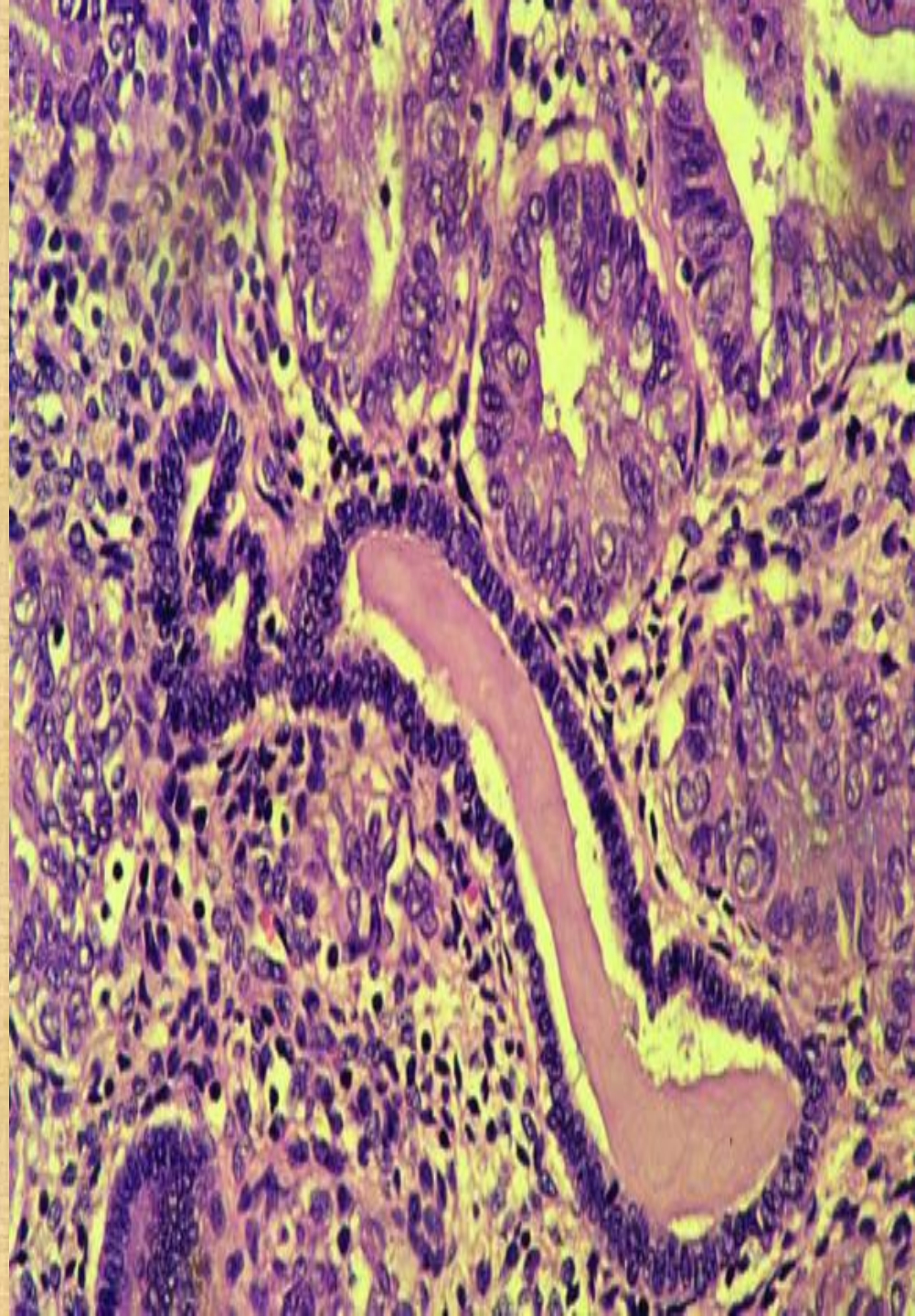
- ❑ A major problem is the distinction between simple endometrial hyperplasia and disordered proliferative endometrium .
- ❑ **In complex hyperplasia**
 - ❖ There is an increase in the gland to stroma ratio , glandular crowding.
 - ❖ The glands are often closely packed although some stroma usually remains 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 eosinophilia)
- While nuclear features are: stratification , loss of polarity and become rounded with prominent nucleoli .



▣ **References**

- ▣ **W G McCluggage** .My approach to the interpretation of endometrial biopsies and curettings J Clin Pathol. 2006 August; 59(8): 801–812.

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Thank you

