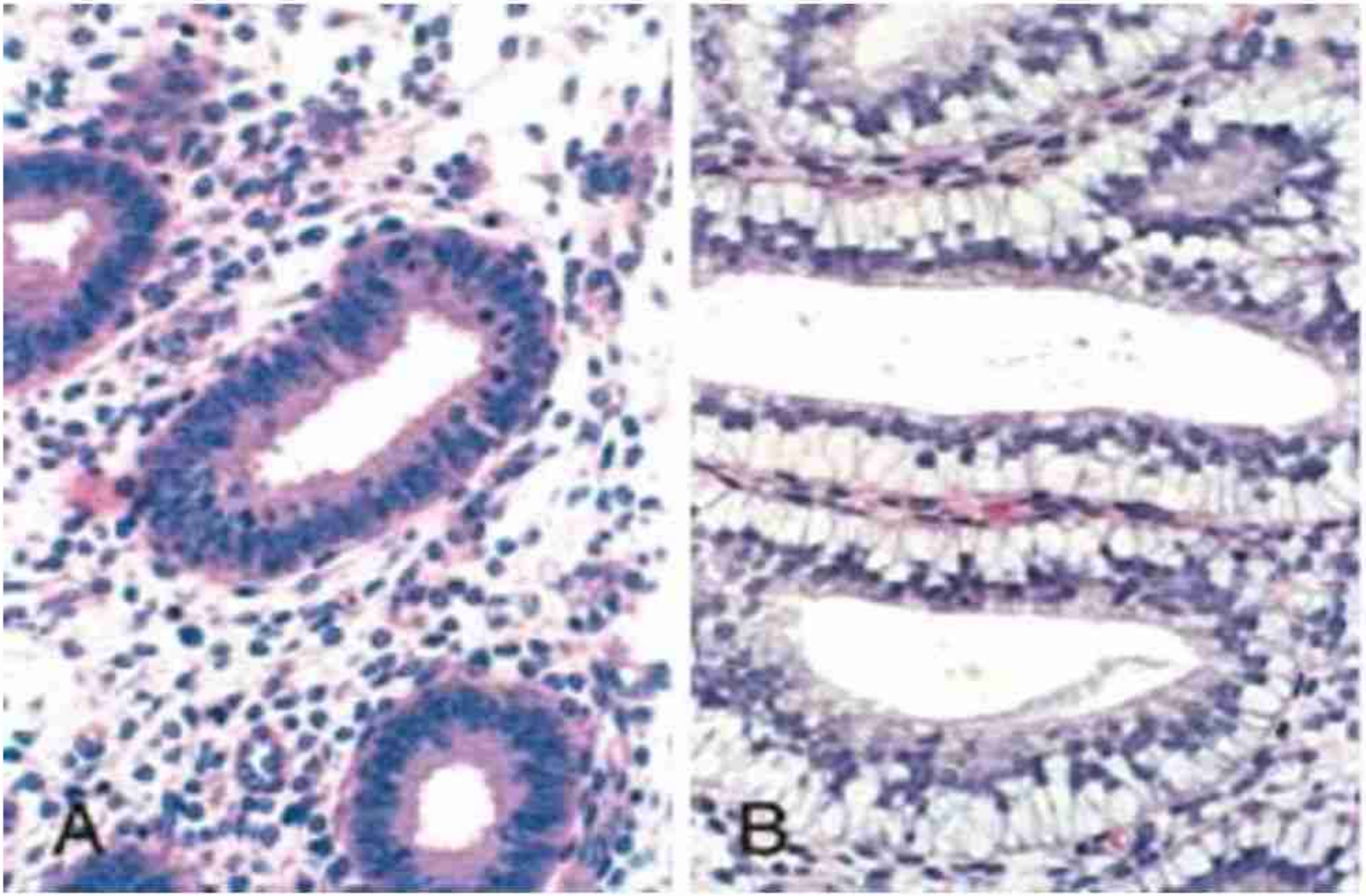
Uterus

Endometrial Histology in the Menstrual Cycle

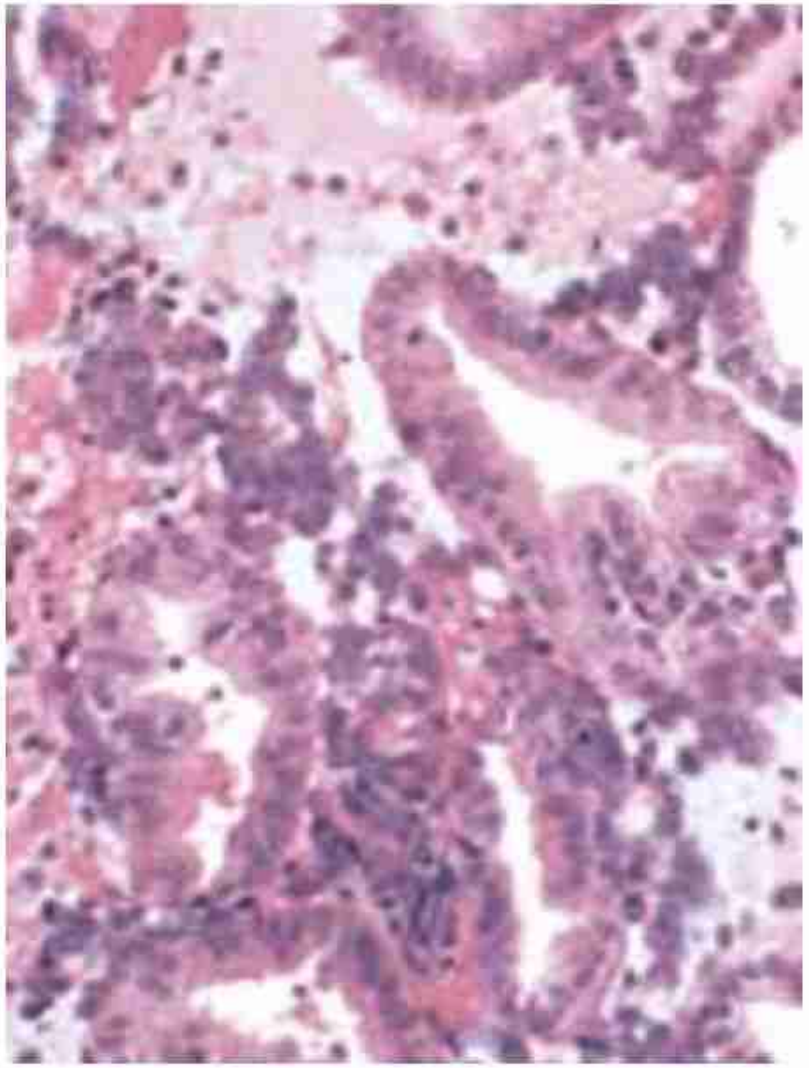
- Normal cyclic changes and histology:
  - Epithelial lining
  - Endometrial glands
  - Endometrial stroma



Proliferative phase

Early Secretory phase

Late Secretory phase



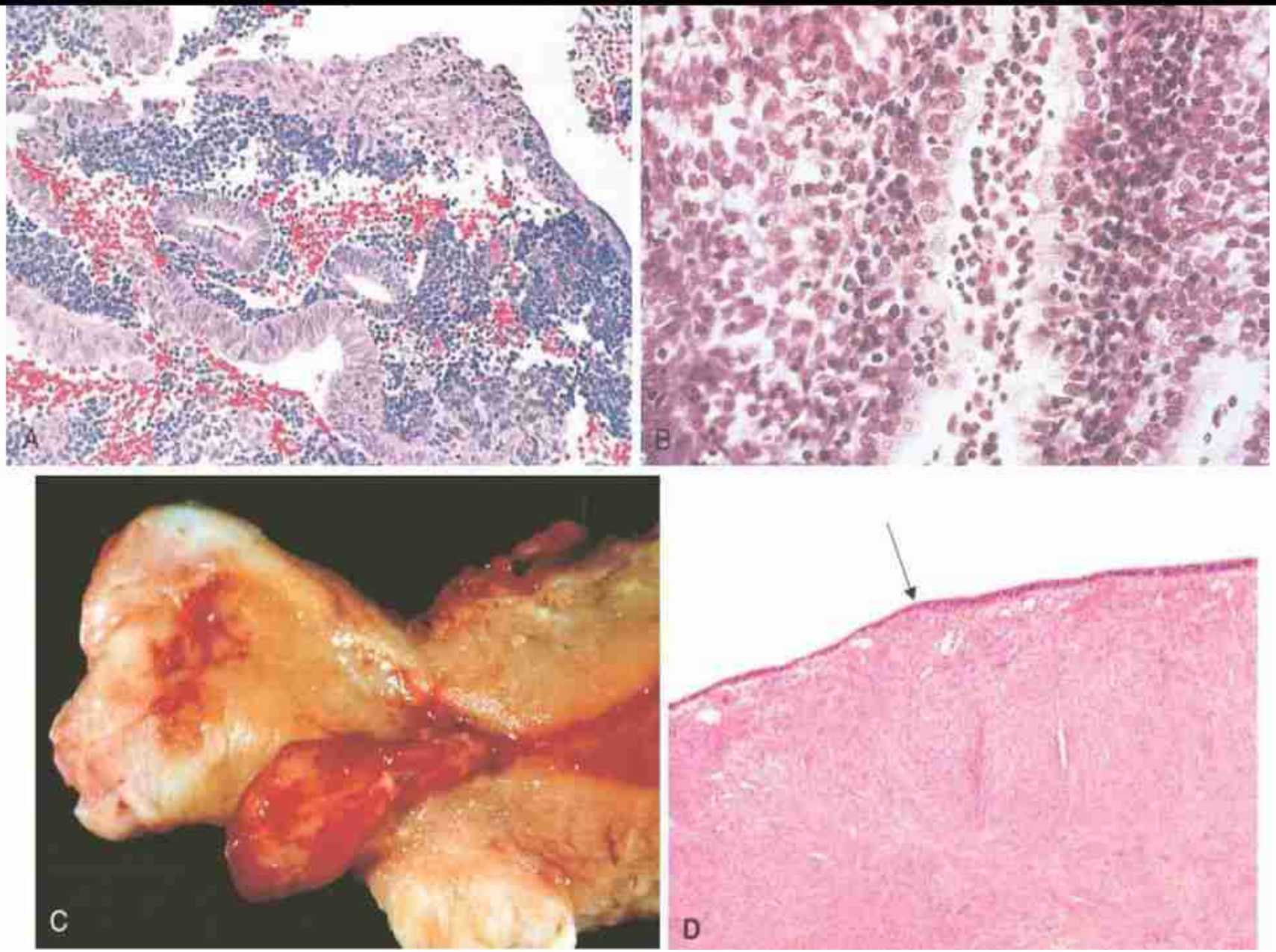
Shedding endometrium

Abnormal uterine Bleeding

- Excessive bleeding during or between periods without a causative uterine lesion

- Previously DUB
- Causes of DUB
  - Anovulation (mcc)
  - Ovulatory dysfunctional bleeding

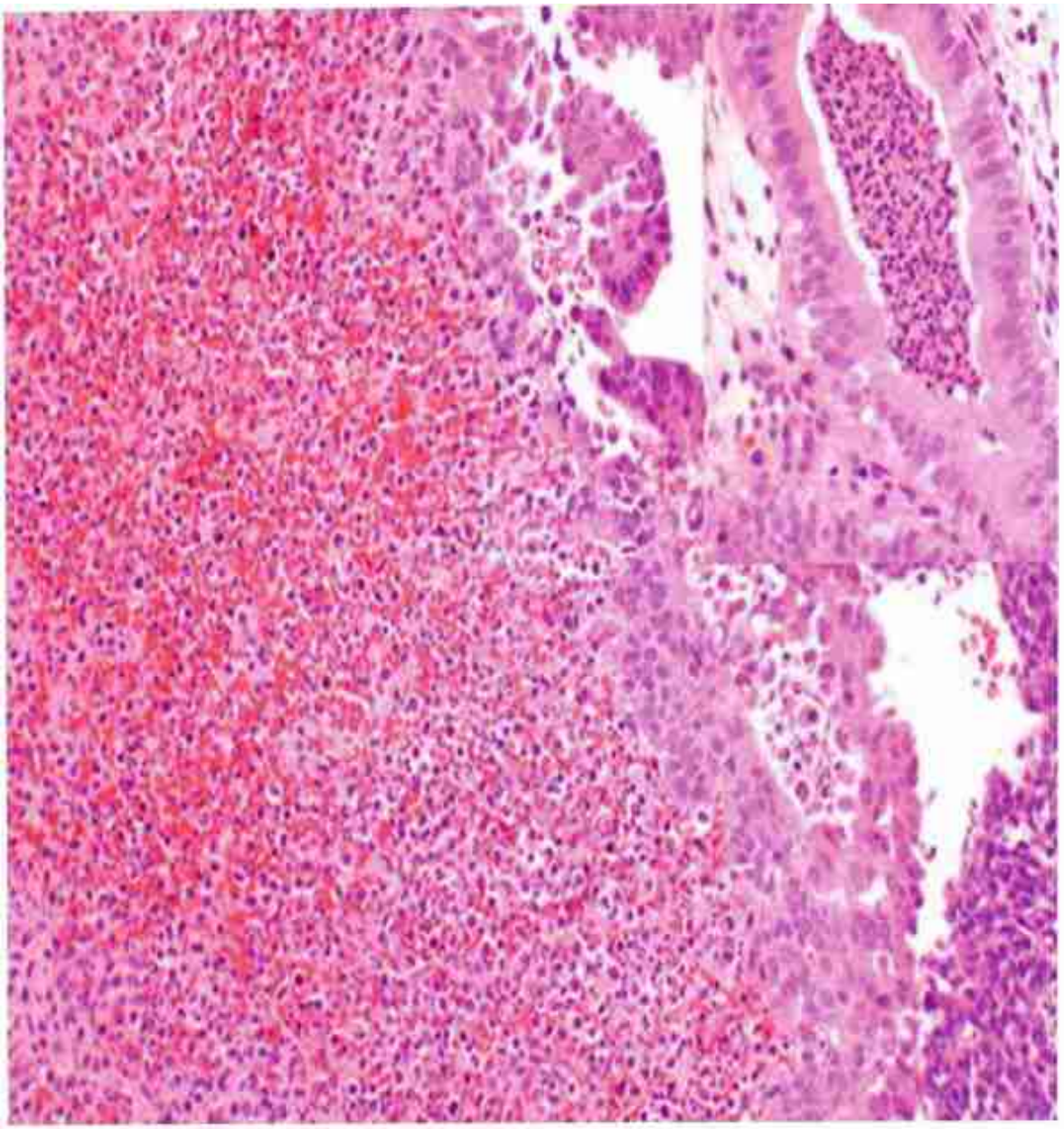
- Causes of anovulation:
  - Prepuberty: precocious puberty of hypothalamic, pituitary or ovarian origin
  - Adolescence: onset on menstruation
  - Reproductive age: complication of pregnancy, endometrial hyperplasia, carcinoma, polyp, leiomyoma, adenomyosis
  - Premenopause: anovulatory cycles, irregular shedding, endometrial hyperplasia, carcinoma and polyps
  - Perimenopause: endometrial hyperplasia, carcinoma, polyps and senile atrophy


A
B
C
D

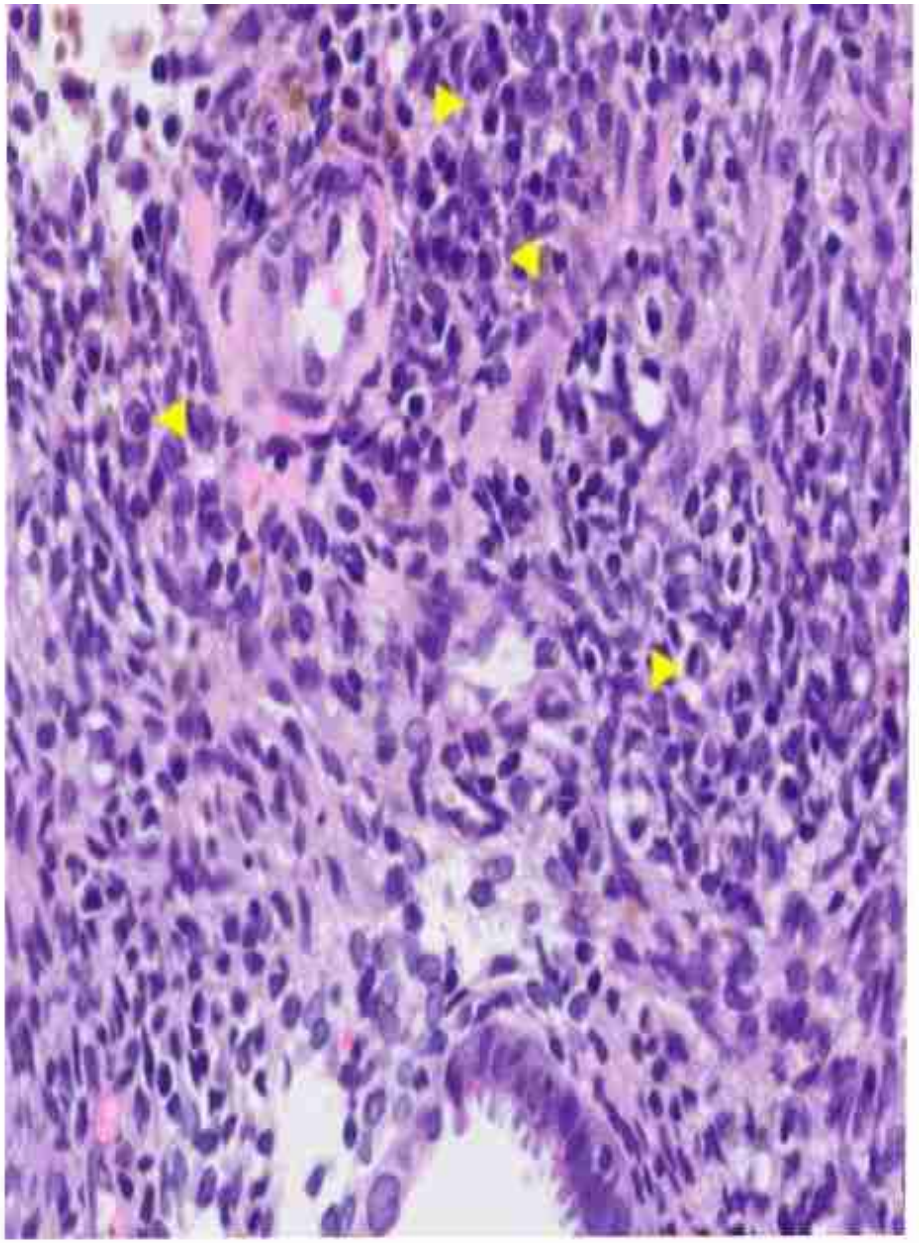
Endometritis and myometritis

- Acute form
  - Puerperial
  - IUCD
  - Gonorrheal infection

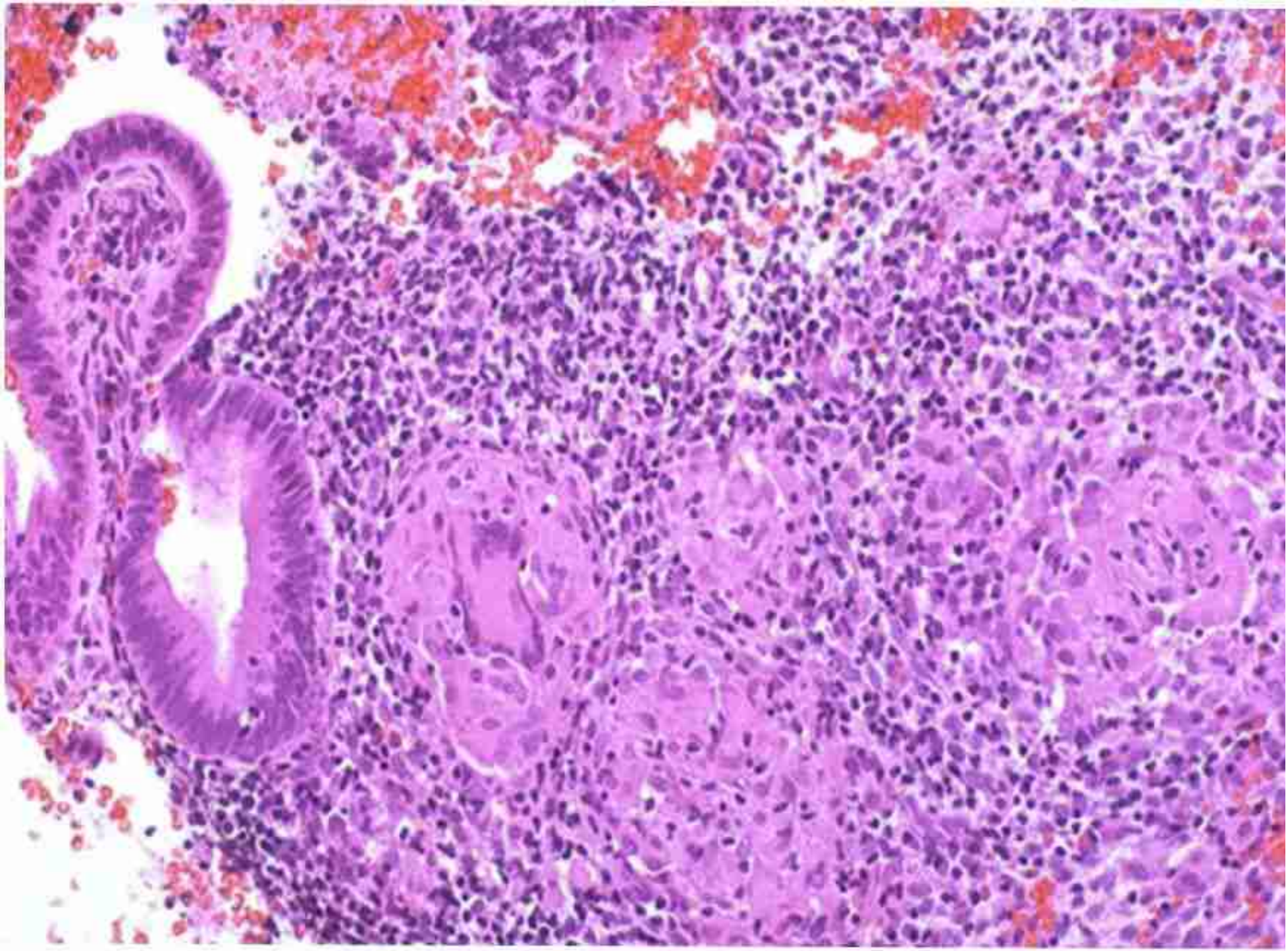
- Chronic form
  - Same as acute form
  - Tuberculosis



Acute endometritis



Chronic endometritis

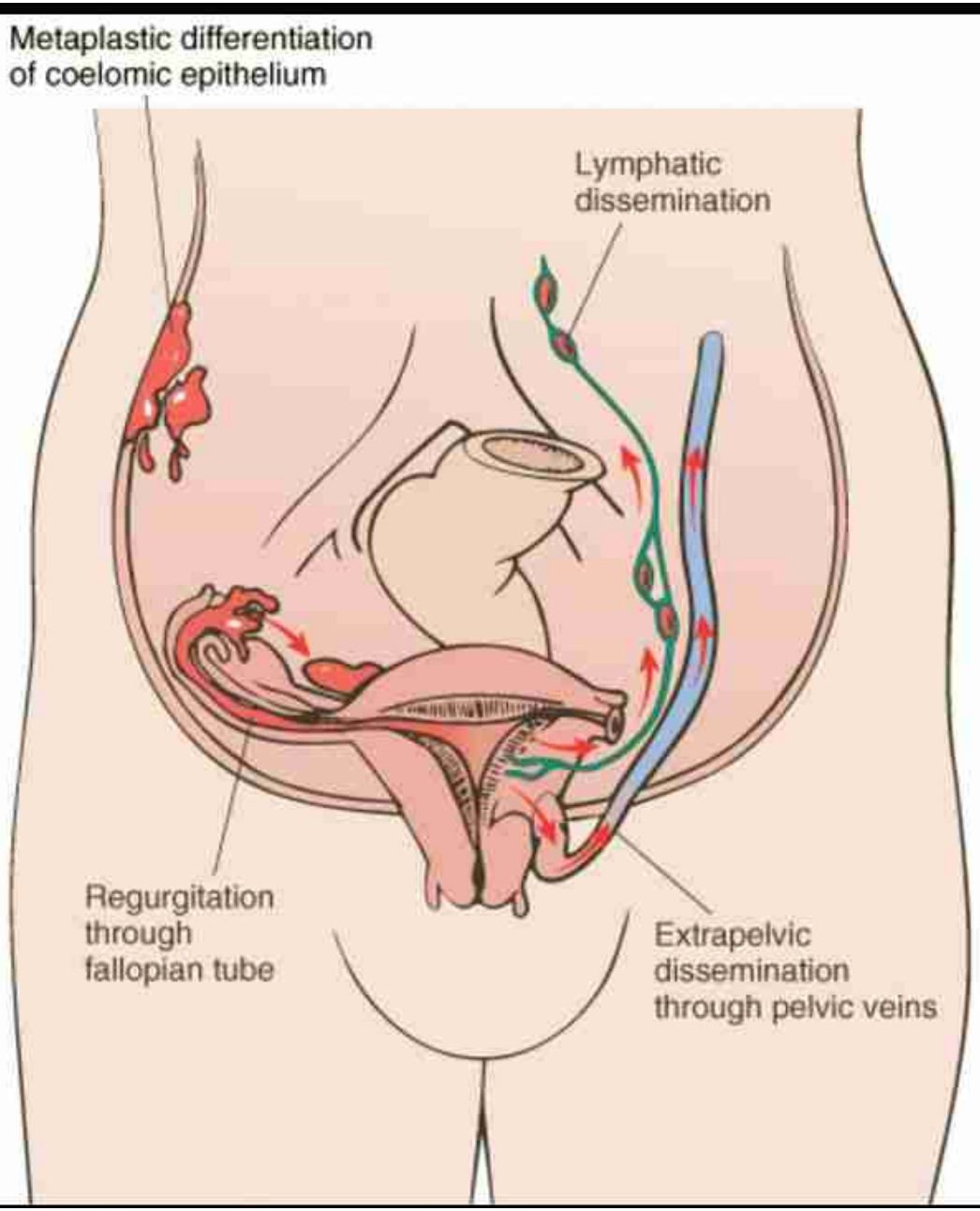


Tuberculous endometritis

Endometriosis

- Endometriosis – Presence of endometrial glands or stroma in abnormal locations outside the uterus
- Reproductive age
- C/F:
  - Infertility
  - Dysmenorrhea
  - Dyspareunia
  - Pelvic pain and intrapelvic bleeding from implants
- Sites:
  - Ovaries
  - Uterine ligaments
  - Rectovaginal septum
  - Pelvic peritoneum
  - Laparotomy scars
  - Rarely in umbilicus, vagina, vulva, or appendix

- 3 theories for histogenesis of endometriosis:
    - Transplanatation or regurgitation theory
    - Metaplastic theory
    - Vascular or lymphatic dissemination
- Gross: varied depending on site and extent of disease
    - Foci of endometriosis appears blue to brown black with surrounding fibrosis
    - Adherence of surrounding structures
    - Ovary (mc site) – multiple cysts, bilateral, larger cysts filled with old dark brown blodd called chocolate cyst
- M/e: foci of endometrial glands and stroma in abnormal site with old and new hemorrhage, inflammation, fibrosis, hemosiderin laden macrophages


Metaplastic differentiation
of coelomic epithelium
Lymphatic
dissemination
Regurgitation
through
fallopian tube
Extrapelvic
dissemination
through pelvic veins


1
2
3
cm

Adenomyosis

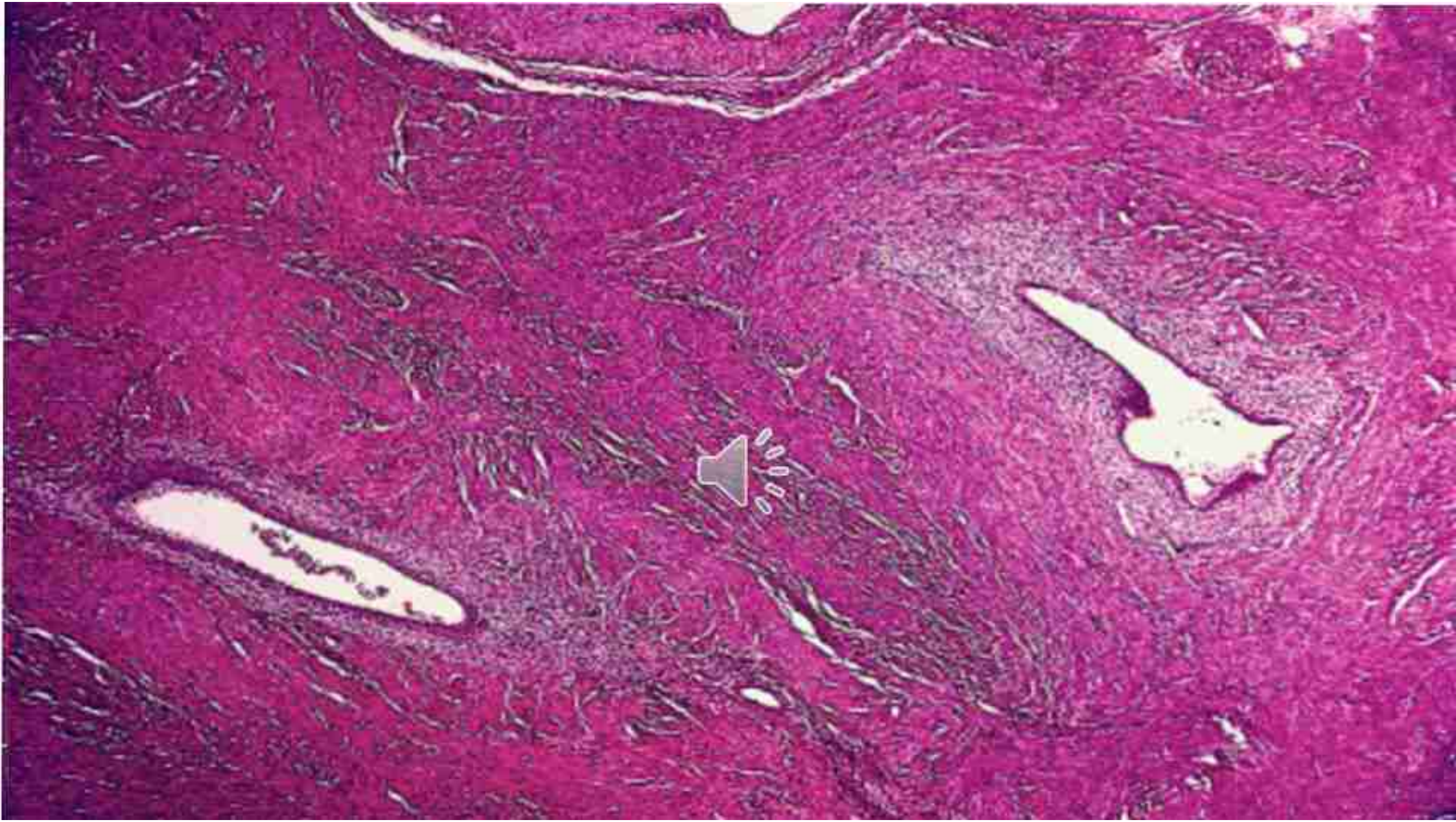
- Abnormal presence of benign endometrial tissue in myometrium with myometrial hypertrophy
- Occurs in up to 20% of hysterectomies
- Pathogenesis possibly metaplasia or estrogenic stimulation

- C/f: Menorrhagia, colicky dysmenorrhea, menstrual pain in sacrococcygeal region

- Gross: Enlarged uterus, diffuse thickening of wall with coarse trabecular ill defined areas of hemorrhage

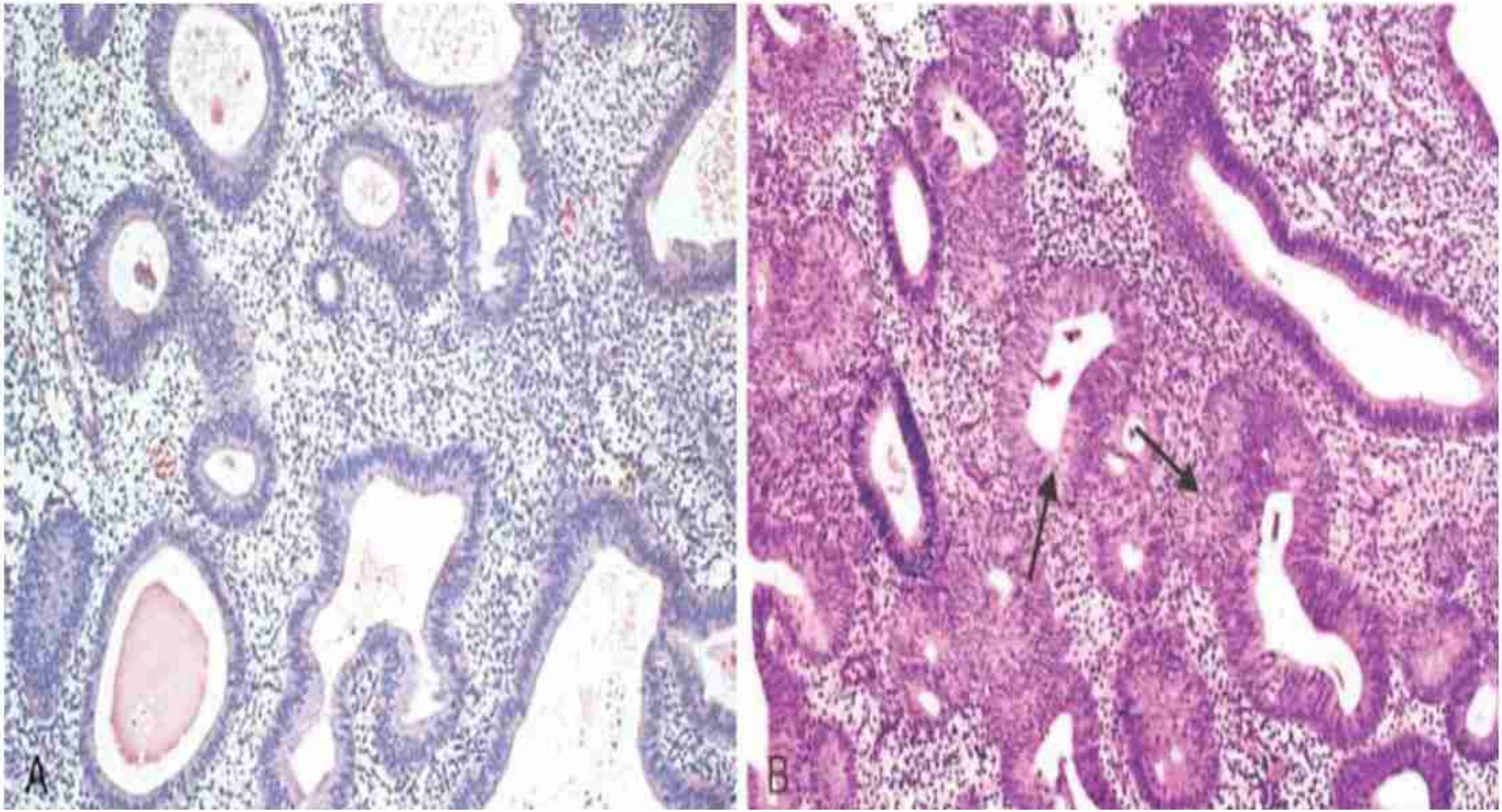
- M/E:
  - Benign endometrial glands and stroma in the myometrium of uterus with minimum distance between basal endometrium and endometrial islands in myometrium being 2-3mm
  - myometrial hypertrophy

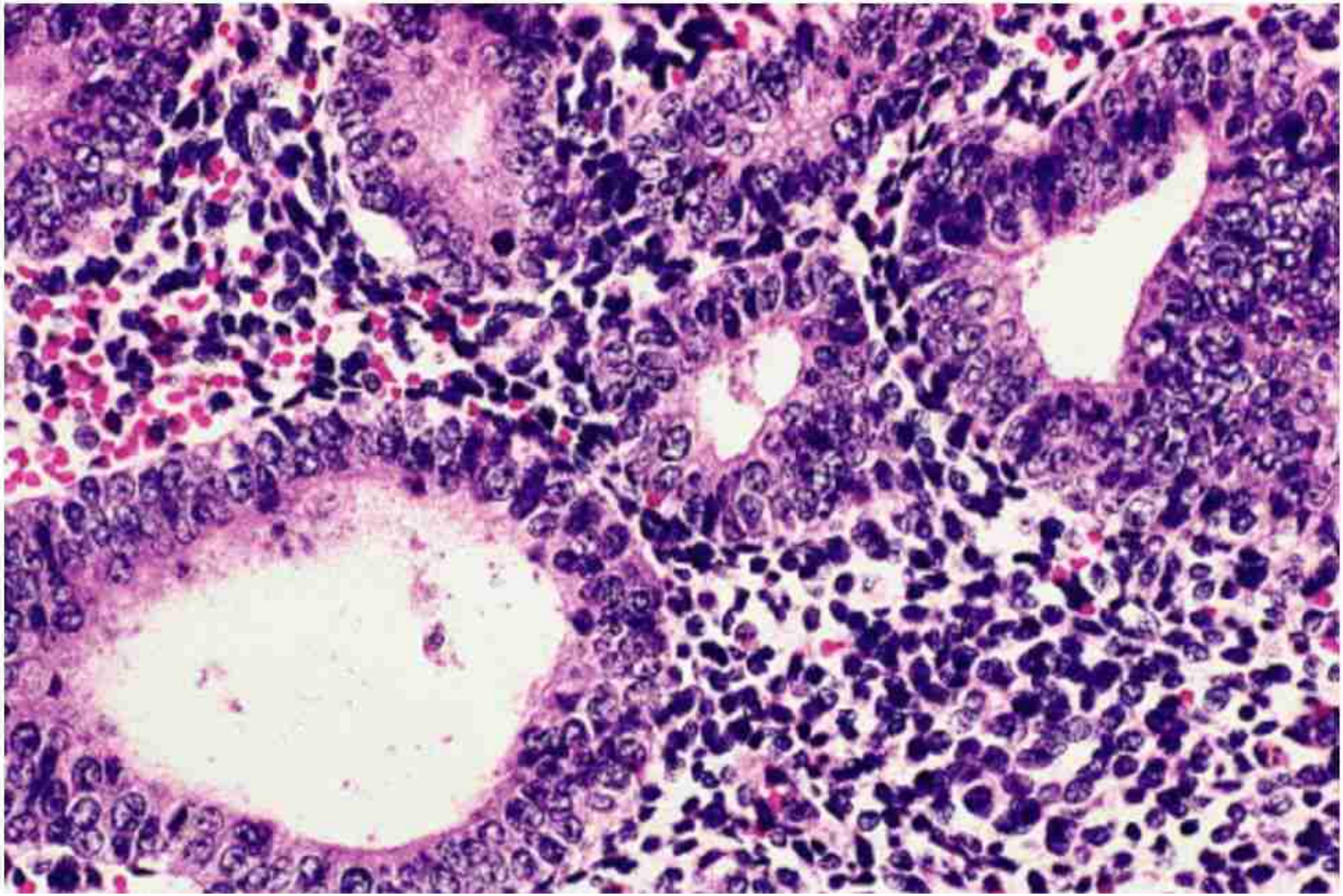

METRIC



Endometrial Hyperplasia

- Proliferation of endometrial gland and stroma and associated with prolonged profuse irregular uterine bleeding in menopausal or post menopausal women
- May have malignant potential if atypia is seen
- Linked to prolonged estrogenic stimulation of endometrium with unopposed progesterone
- Classified as
  - Hyperplasia with atypia
  - Hyperplasia without atypia


A
B



Carcinoma of The Endometrium

Endometrial Carcinoma

- Common invasive cancer of female genital tract
- Peak incidence 60-70 years
- Abnormal bleeding in post menopausal women or excessive bleeding in premenopausal women
- Predisposing conditions
  (1) Obesity
  (2) Diabetes
  (3) Hypertension
  (4) Nulliparity,
  (5)unopposed estrogen excess

Link with unopposed estrogen:-

- Endometrial carcinoma is associated with endometrial hyperplasia where unopposed hyperestrogenism and frequent anovulatory cycles are seen
- In post menopausal women there is increased synthesis of estrogens from body fat, adrenals and ovaries (link with obesity and age)
- Estrogen-secreting tumors like granulosa cell tumors
- Estrogen replacement therapy
- Tamoxifen therapy in breast cancer
- Prolonged estrogen administration to lab animals
- Gonadal agenesis – rarely develop cancer

- Papillary serous endometrial carcinoma – p53 gene mutation
- Endometrioid carcinoma - Inactivation of PTEN gene on Ch 10
- Heredity – higher incidence in HNPCC syndrome and Cowden syndrome

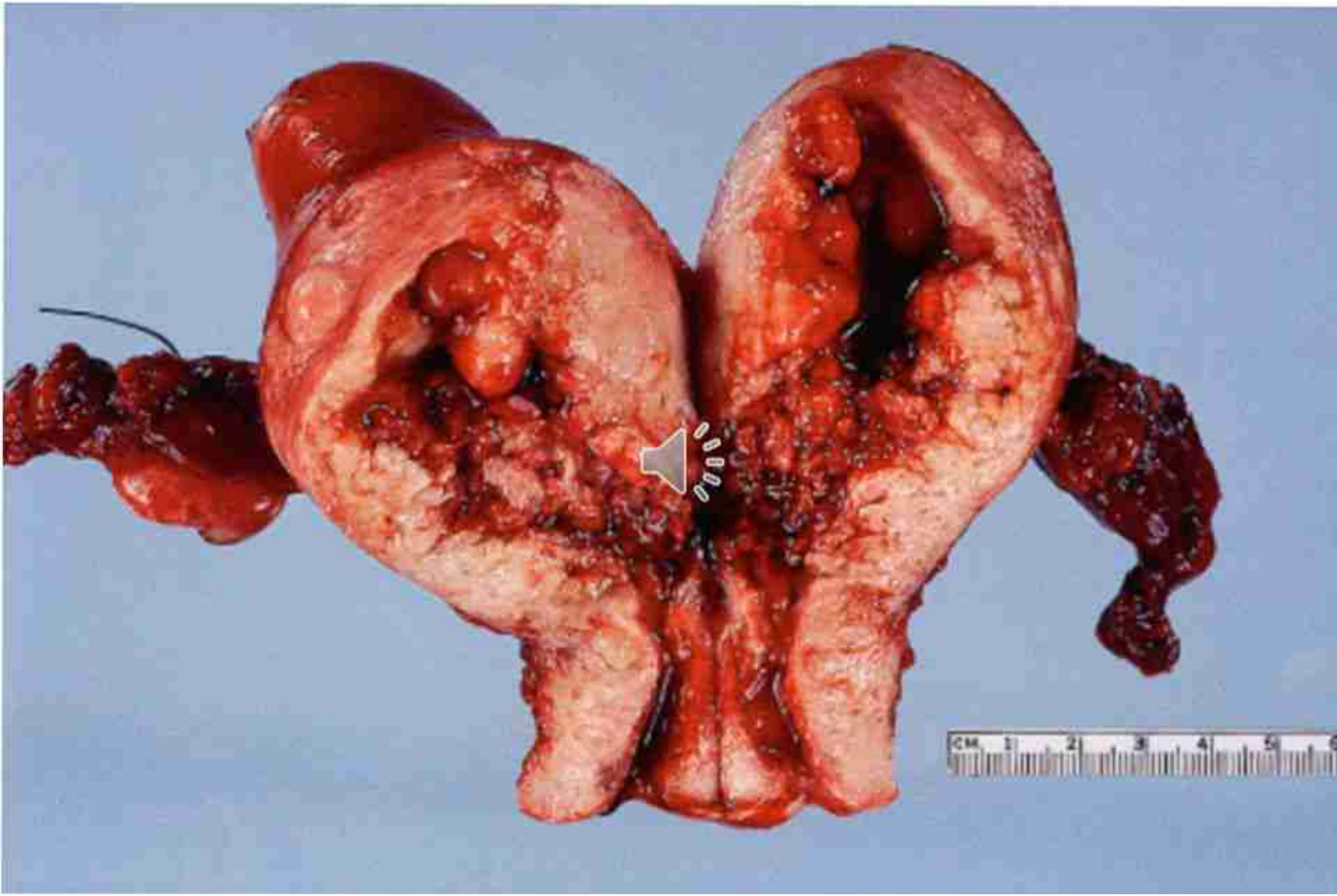
Clinical Course

- May be asymptomatic for long period of time
- Vaginal bleeding and excessive leukorrhea
- Diagnosis established by curettage and histological examination
- Stage and grade determine prognosis
- 90% 5-year survival in stage I

Gross morphology:

- 2 patterns
  - Localized polypoid tumor
  - Diffuse tumor involving entire endometrial cavity (mc)

- Tumor protrudes into endometrial cavity as irregular friable grey tan mass
- Extend into myometrium as soft friable granular tissue
- Advanced stages – cervical canal, peritoneum, lymphatic and hematogenous metastasis to lung, liver, bones


CM 1 2 3 4 5

Microscopy:

- Most are endometrioid adenocarcinoma
  - Well differentiated
  - Moderately differentiated
  - Poorly differentiated

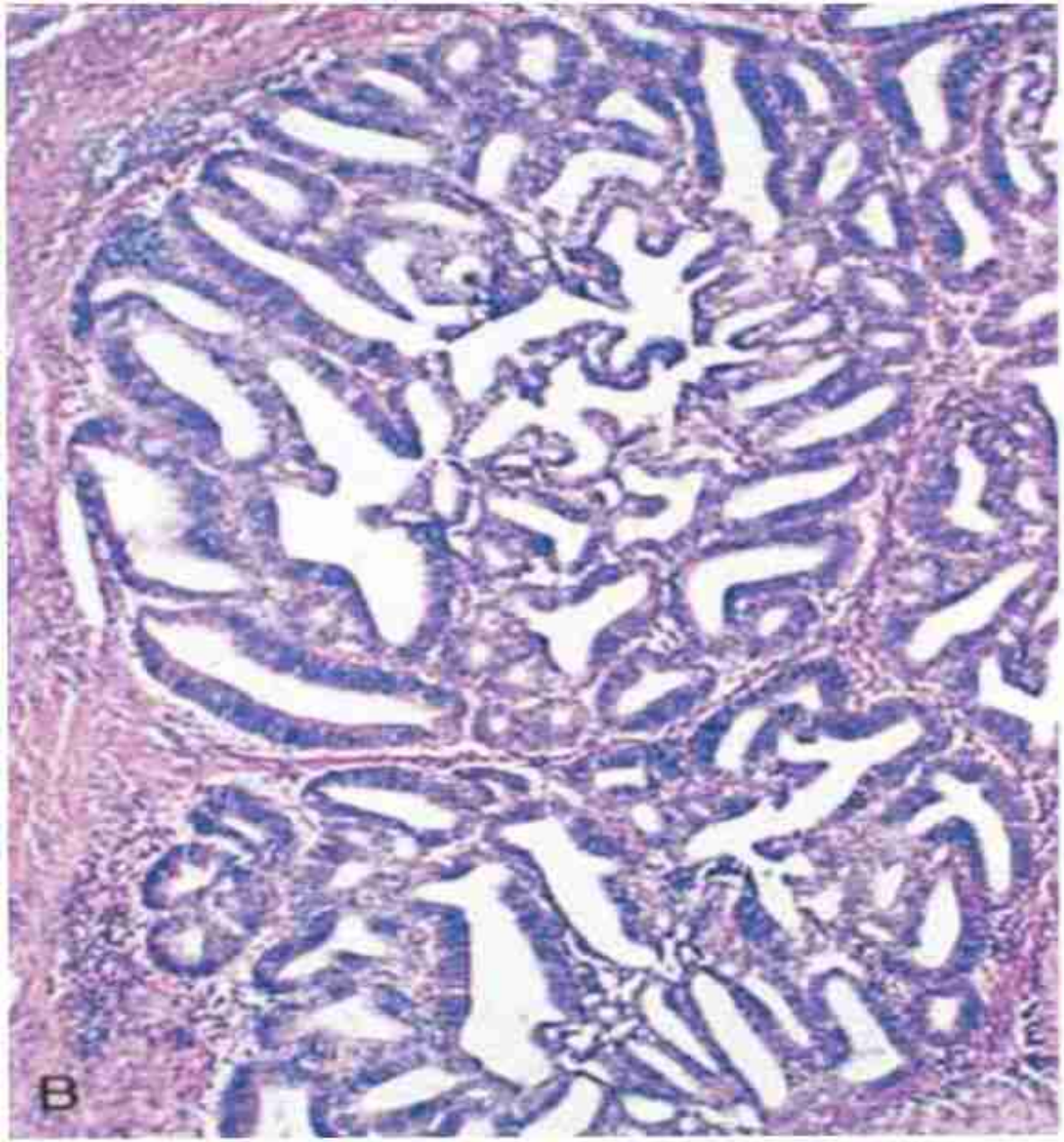
G1: Well differentiated (predominantly glandular) : - (most common type)
Back to back crowding of glands, obliterated intervening stroma, epithelium shows stratification, tufting, papillae, atypical changes

G2: Moderately differentiated (glandular and partly solid areas) :-
Above features plus some solid sheets of malignant cells

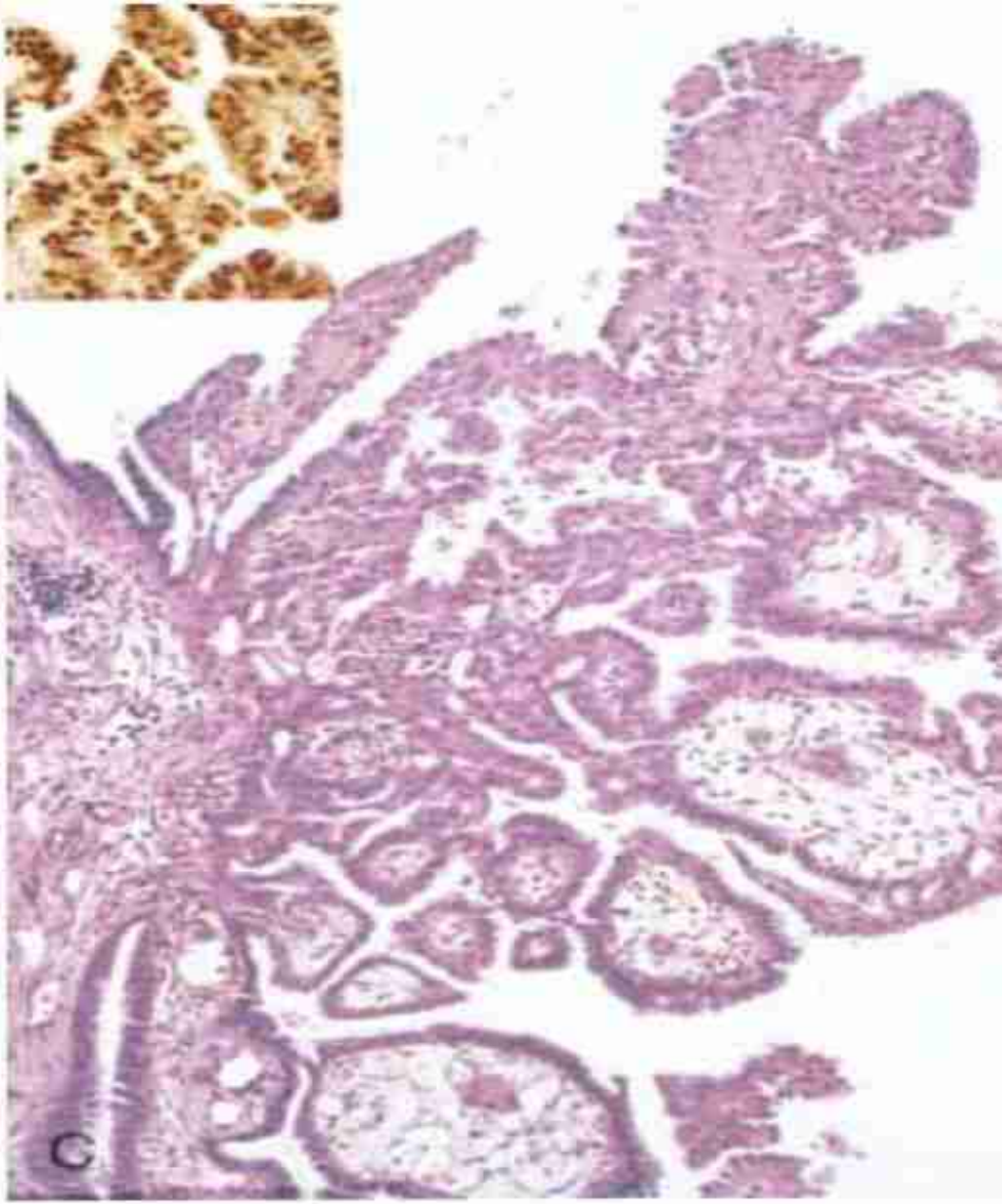
G3: Poorly differentiated (predominantly solid) :-
Malignant cells predominantly in solid sheets and ribbons showing marked atypia and mitosis, glandular pattern rare

- Other histologic variants of endometrial carcinoma:
  1. Papillary serous carcinoma
  2. Adenocarcinoma with squamous metaplasia (adenoacanthoma)
  3. Adenosquamous carcinoma
  4. Clear cell carcinoma
  5. Mucinous adenocarcinoma

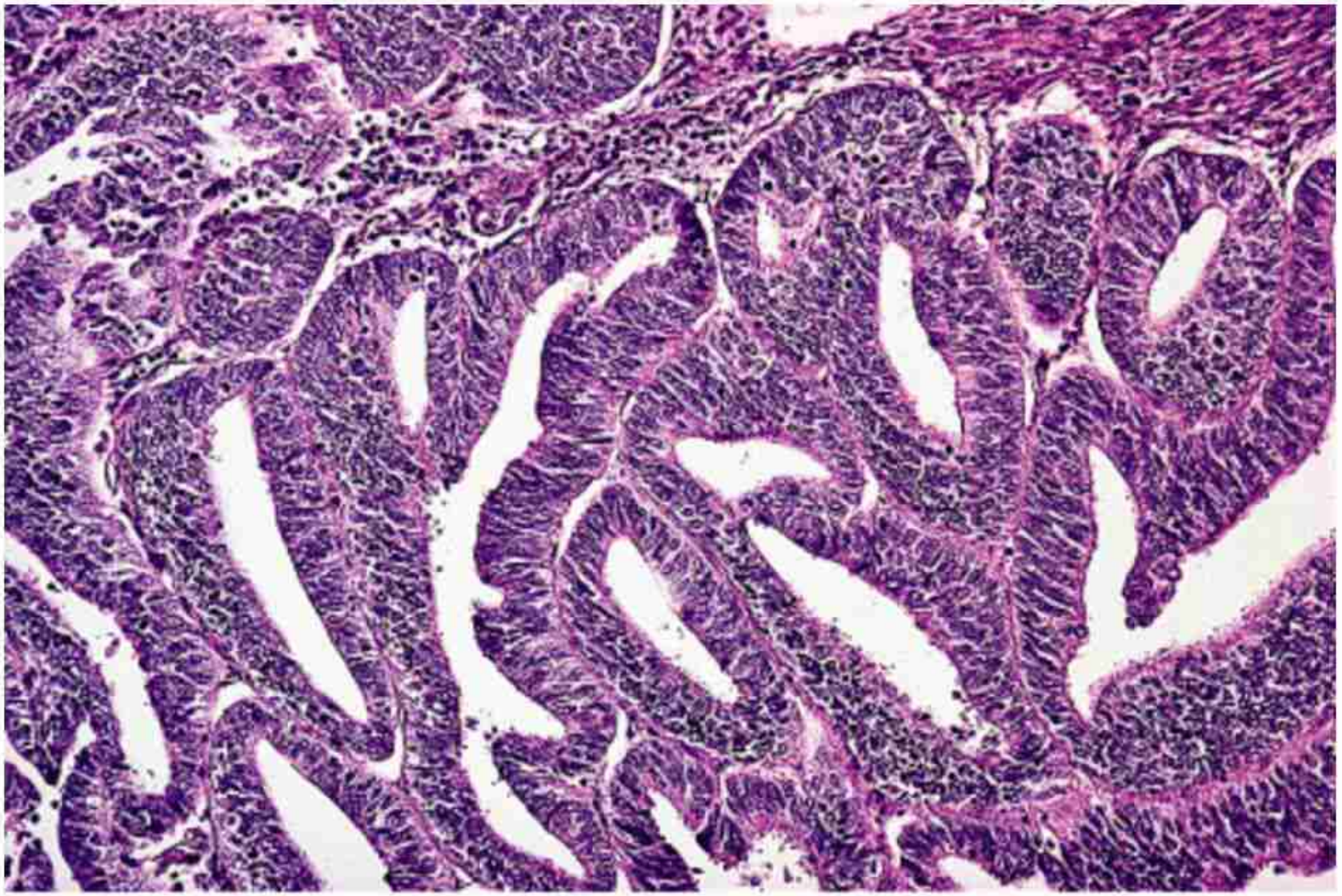
- Papillary serous carcinoma of endometrium
  - Resembles ovarian counterpart
  - Aggressive
  - Occurs in atrophic endometrium



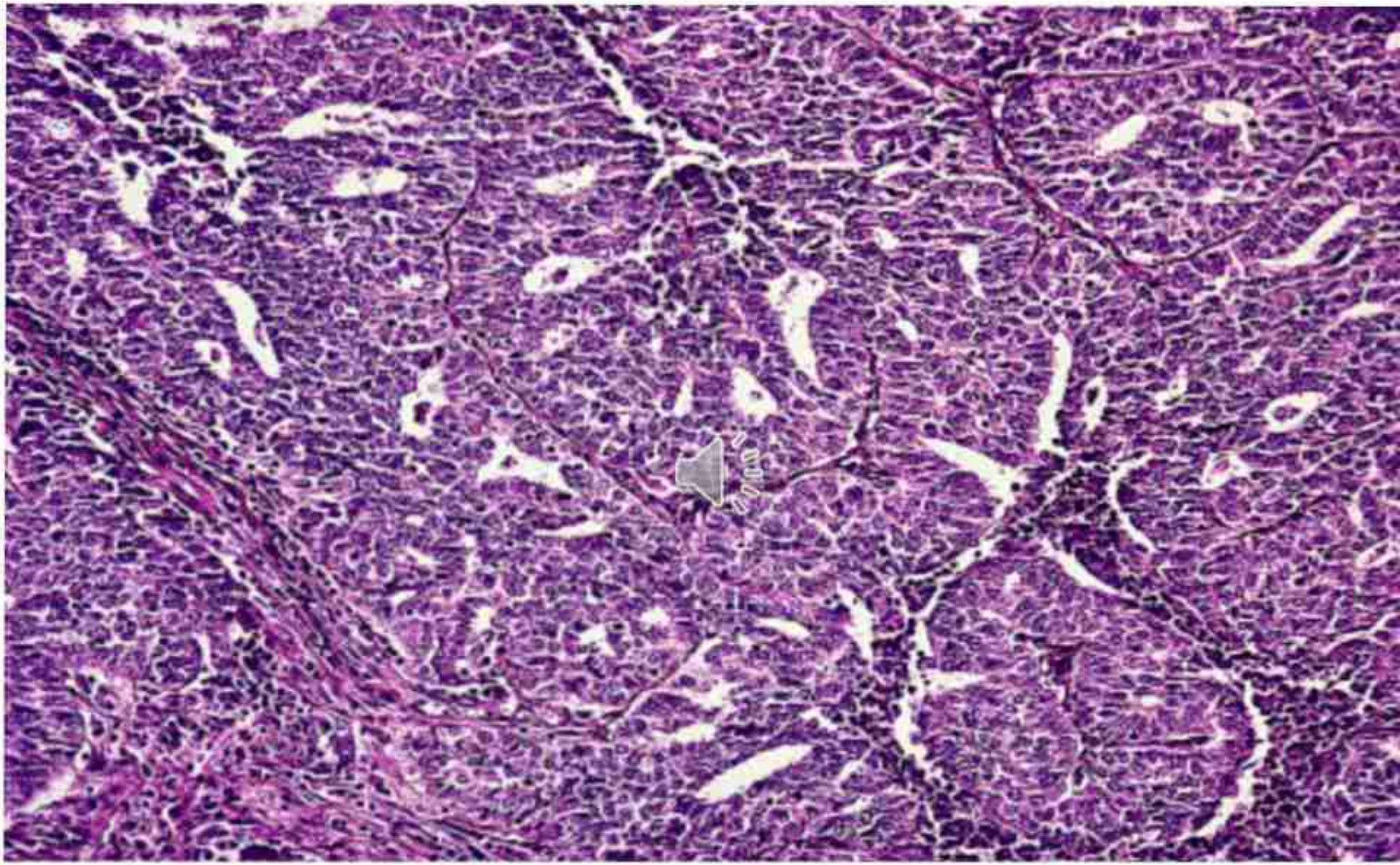
Well differentiated endometrioid adenocarcinoma



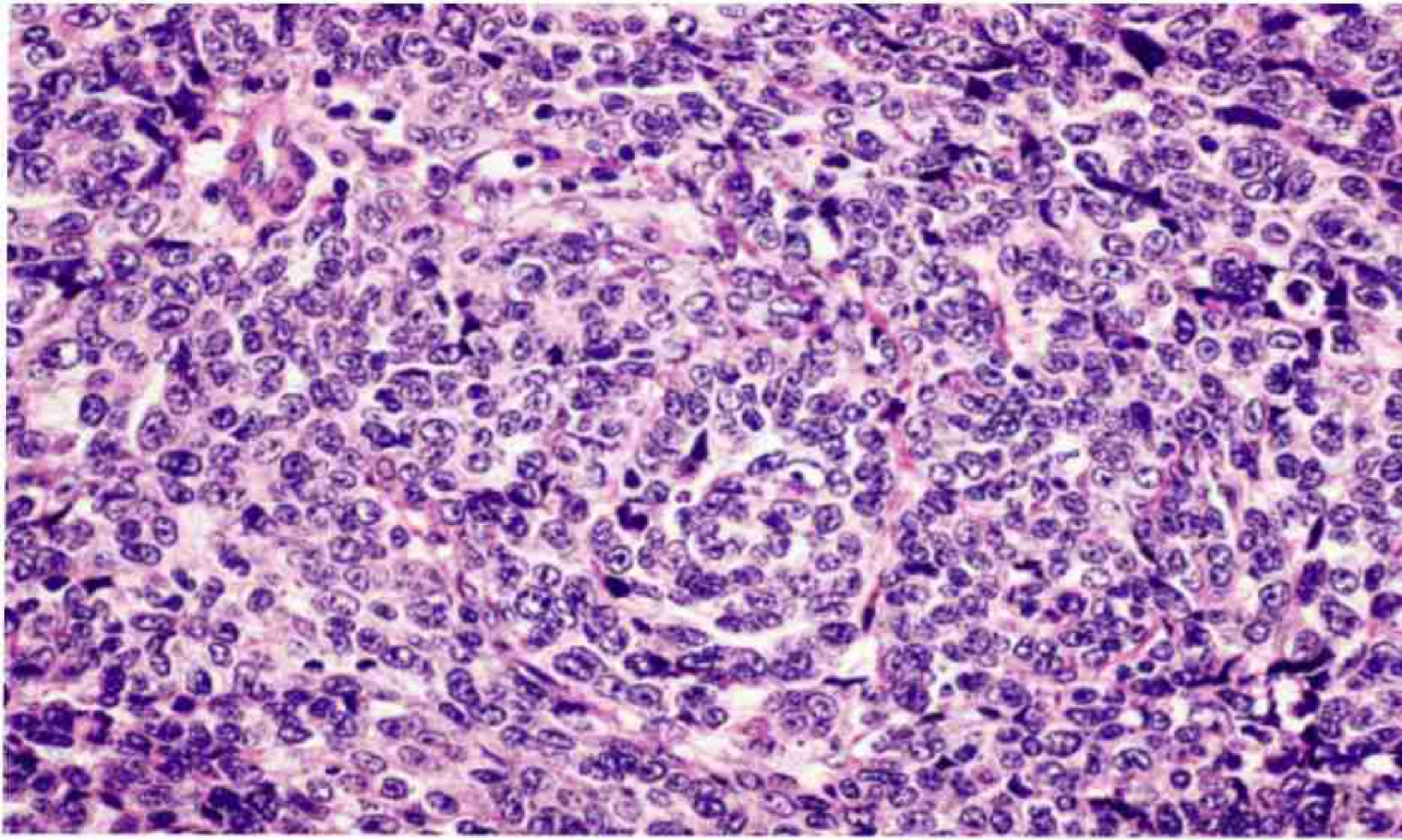
Papillary serous carcinoma



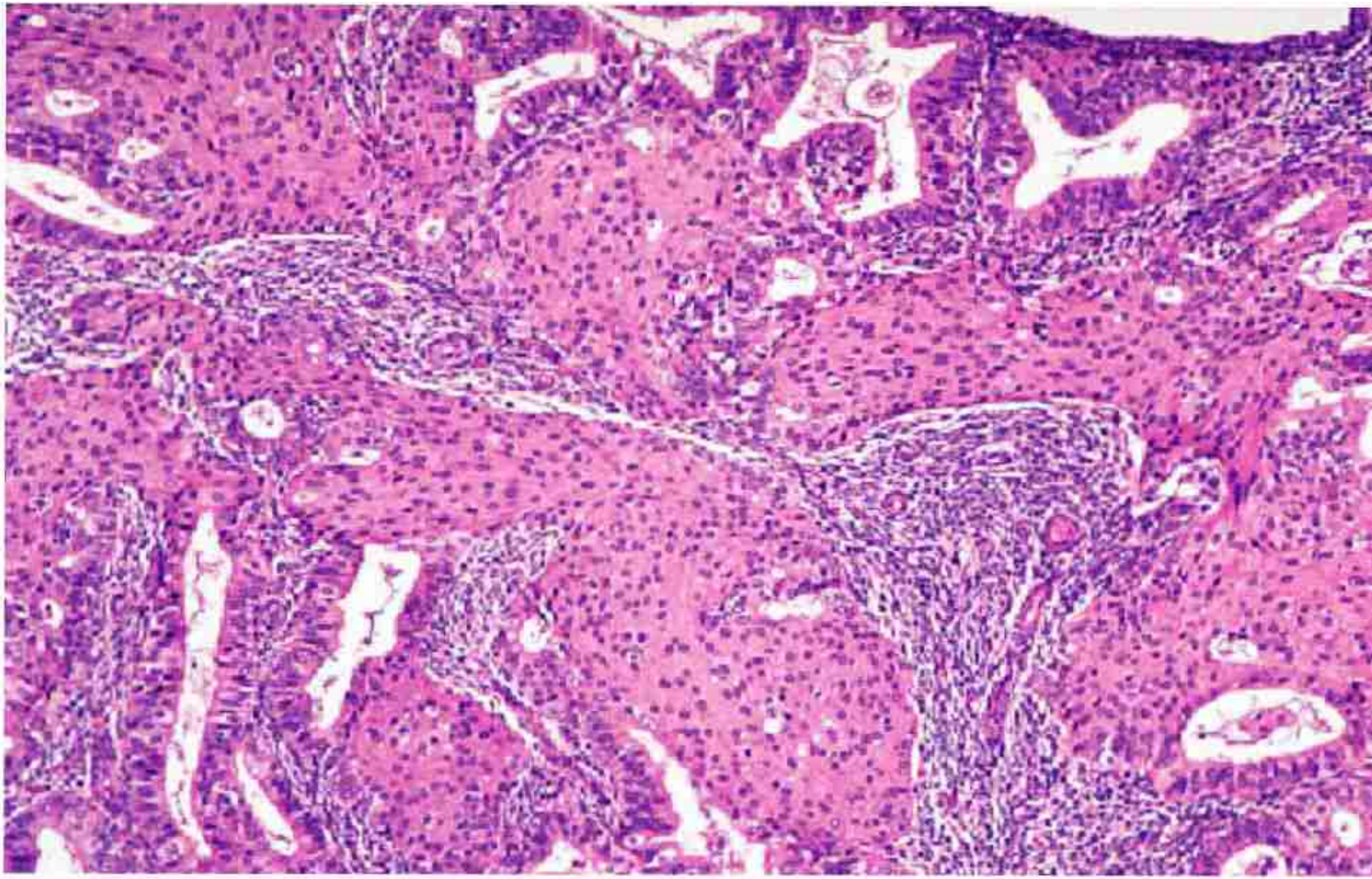
Well differentiated endometrioid adenocarcinoma



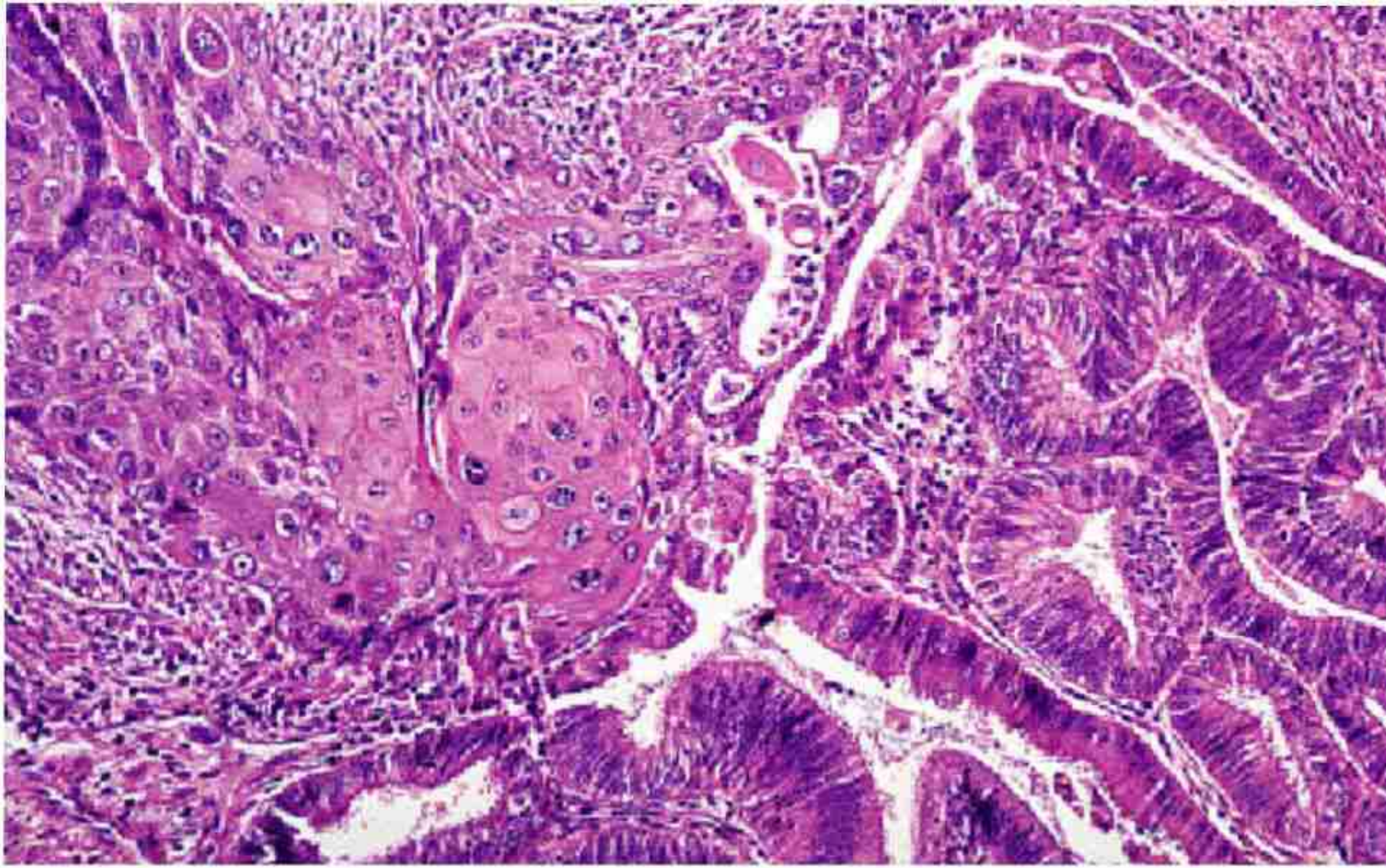
Moderately differentiated endometrioid adenocarcinoma



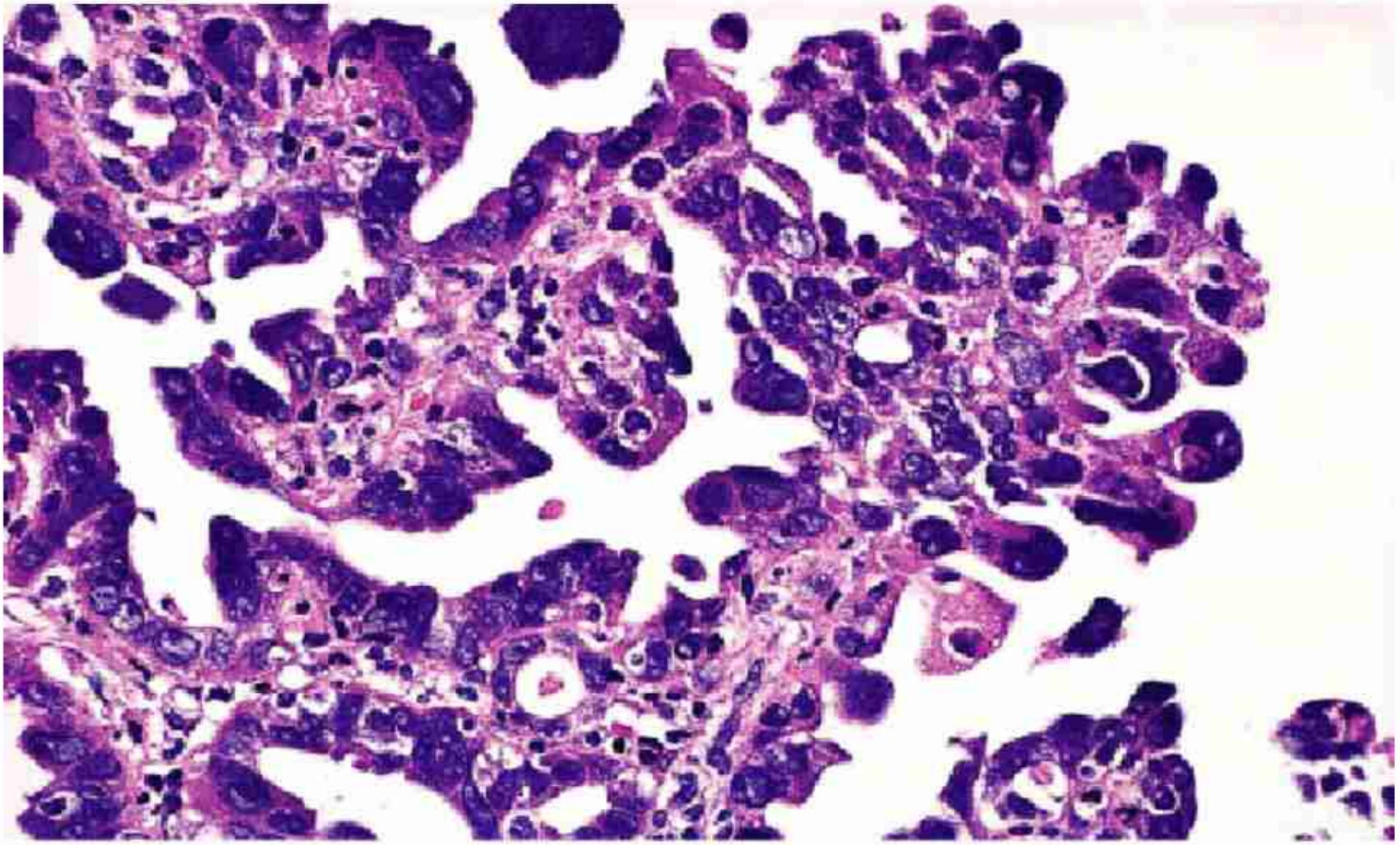
Poorly differentiated endometrioid adenocarcinoma



Adenosquamous carcinoma



Adenosquamous carcinoma



Papillary serous carcinoma

TABLE 24.5: FIGO Clinical Staging of Carcinoma of the Endometrium.

Stage	IA	Tumour limited to endometrium.
	IB	Invasion to less than one-half the myometrium.
	IC	Invasion to more than one-half the myometrium.
Stage	IIA	Endocervical glandular involvement only.
	IIB	Cervical stromal invasion.
Stage	IIIA	Tumour invades serosa and/or adnexa and/or positive peritoneal cytology.
	IIIB	Metastases to pelvic and/or para-aortic lymph nodes.
Stage	IVA	Tumour invasion of bladder and/or bowel mucosa.
	IVB	Distant metastases including intra-abdominal and/or inguinal lymph nodes.

Assignment:

Endometrial carcinoma grading and morphology
Definition and Theories of Endometriosis

Submit assignment by tomorrow 4pm.

THANKYOU