



**Gynekologicko - porodnická klinika**  
**FN Brno a Masarykovy univerzity**  
**Přednosta: prof. MUDr. P. Ventruba, DrSc.**



# Irregular uterine bleeding

I. Crha, A. Belkov

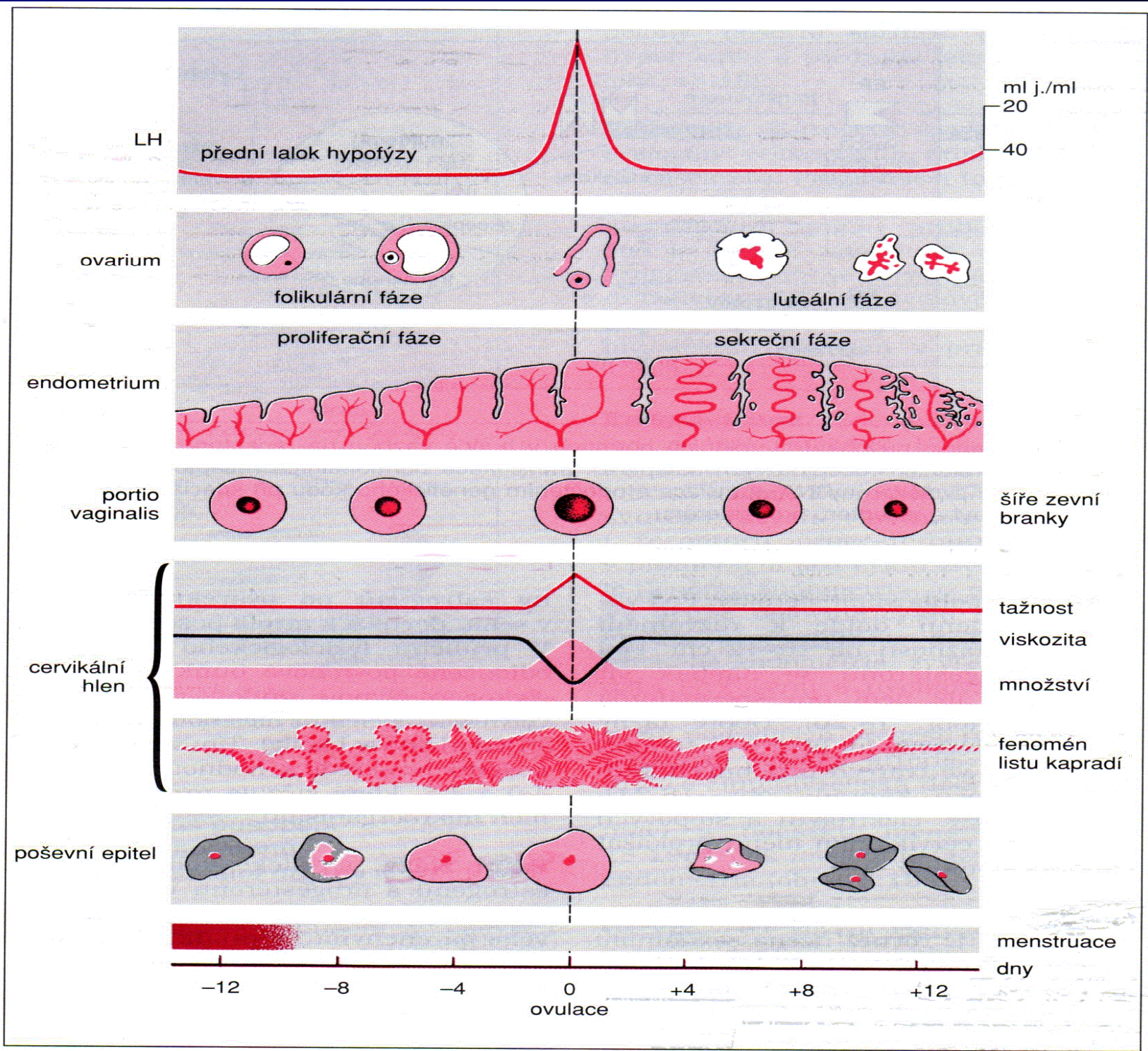
# Menstrual cycle

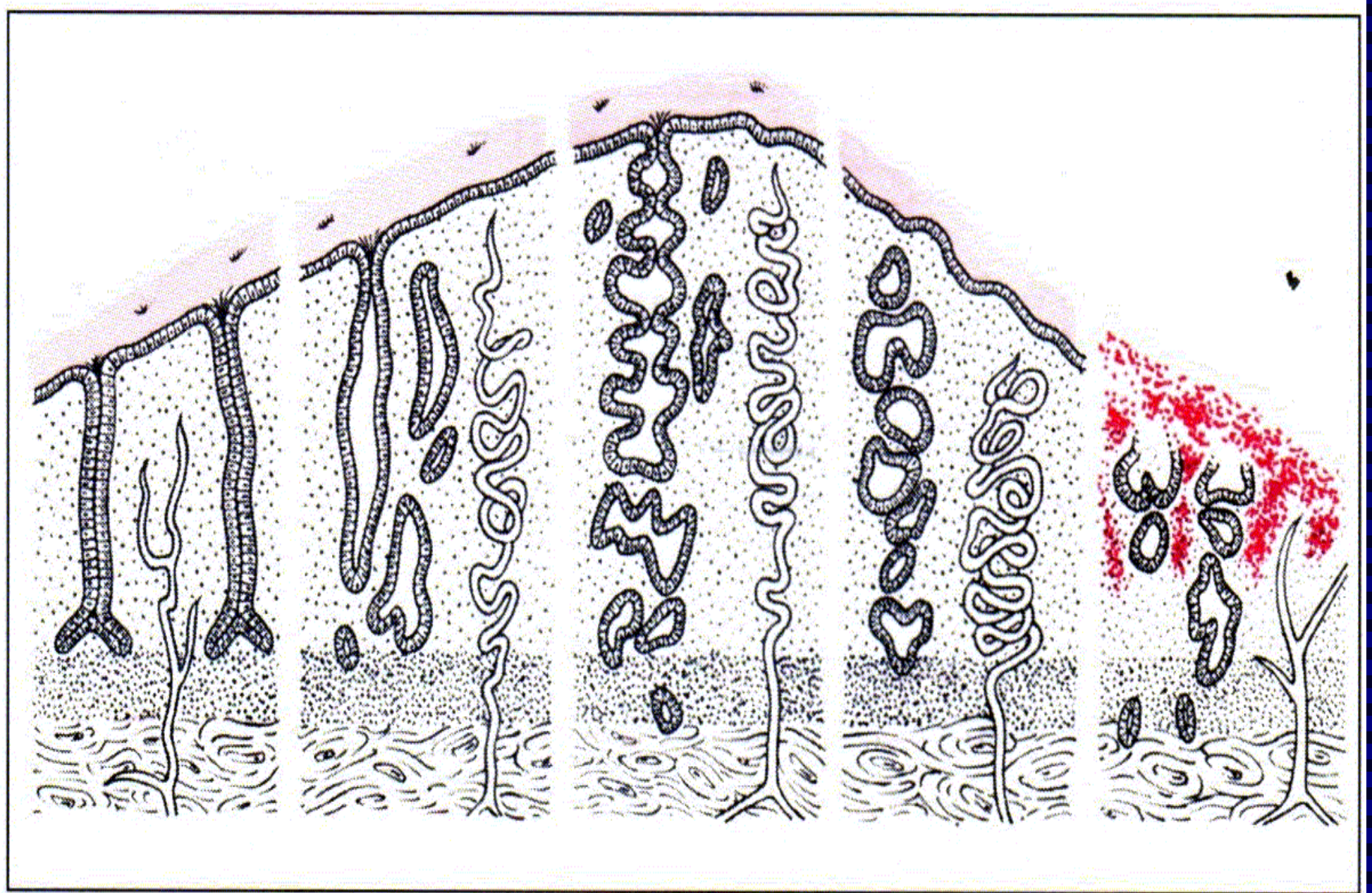
- ovarian cycle results in endometrial changes
- **Cycle phases:**
  - menstruation
  - proliferation
  - secretion

**The length of the cycle:** 25- 32 (35) dní

**The length of the bleeding:** 3-5 dní, max. 7 dní,

**Blood lost:** 1 ml/kg





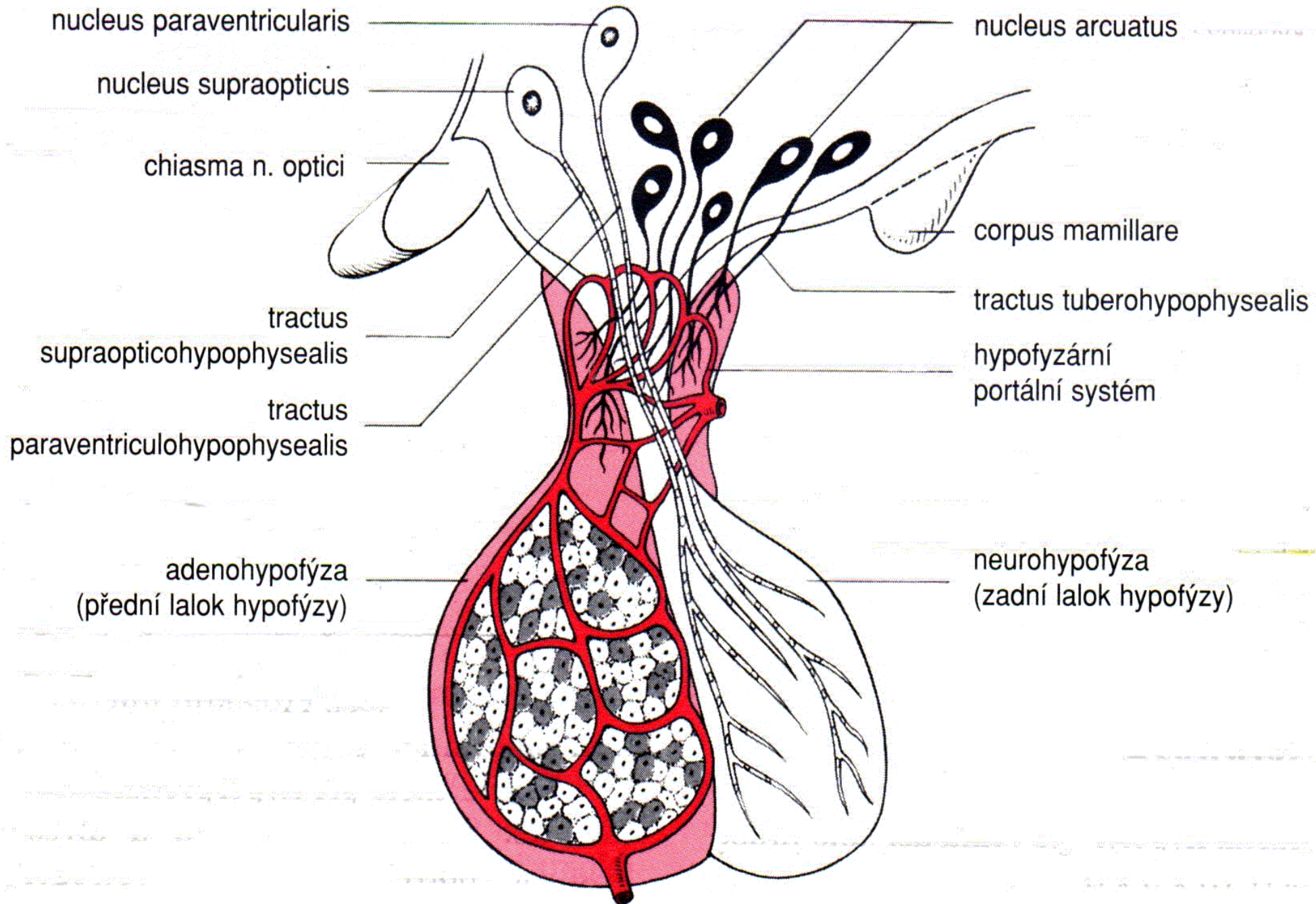
a

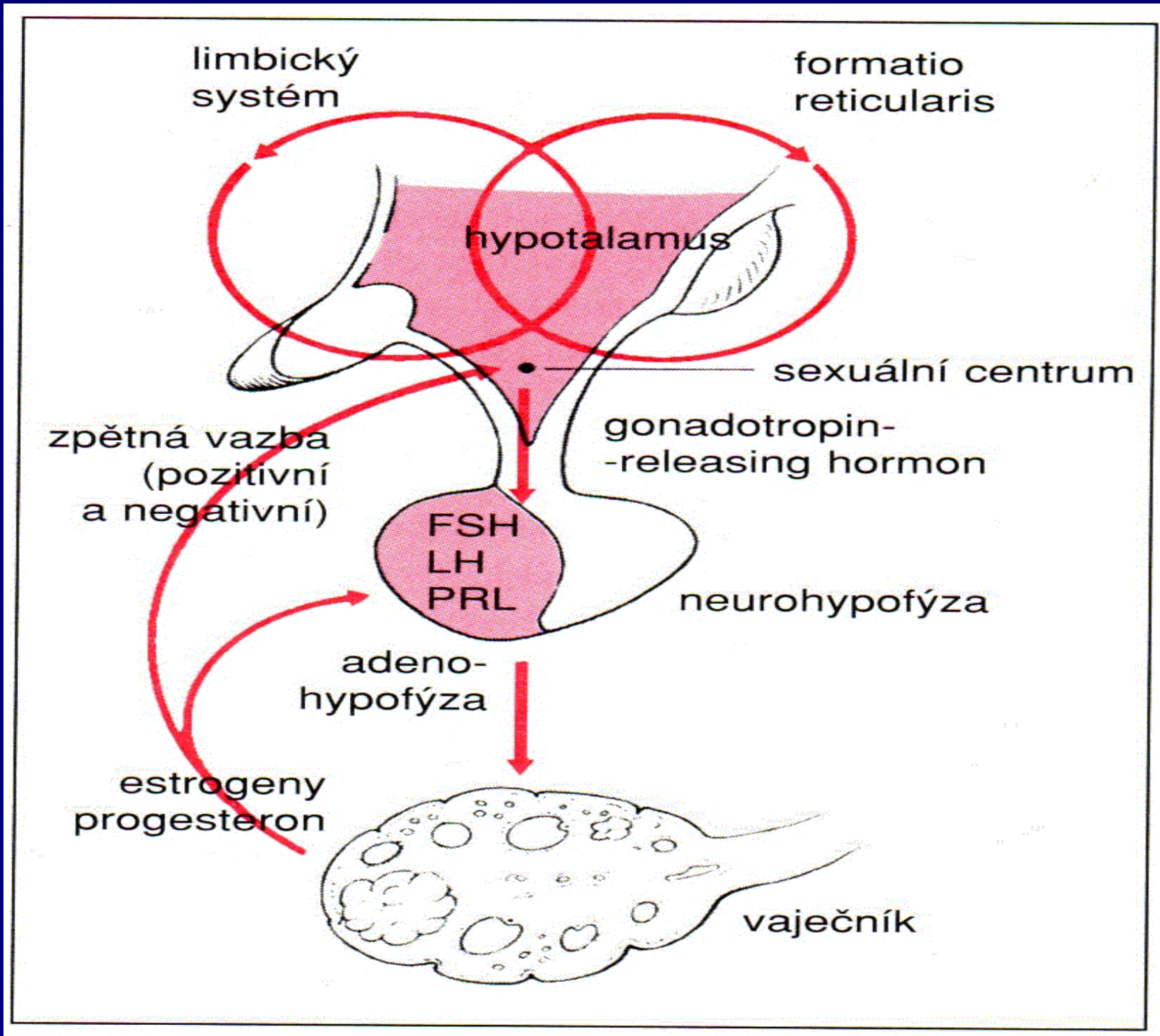
b

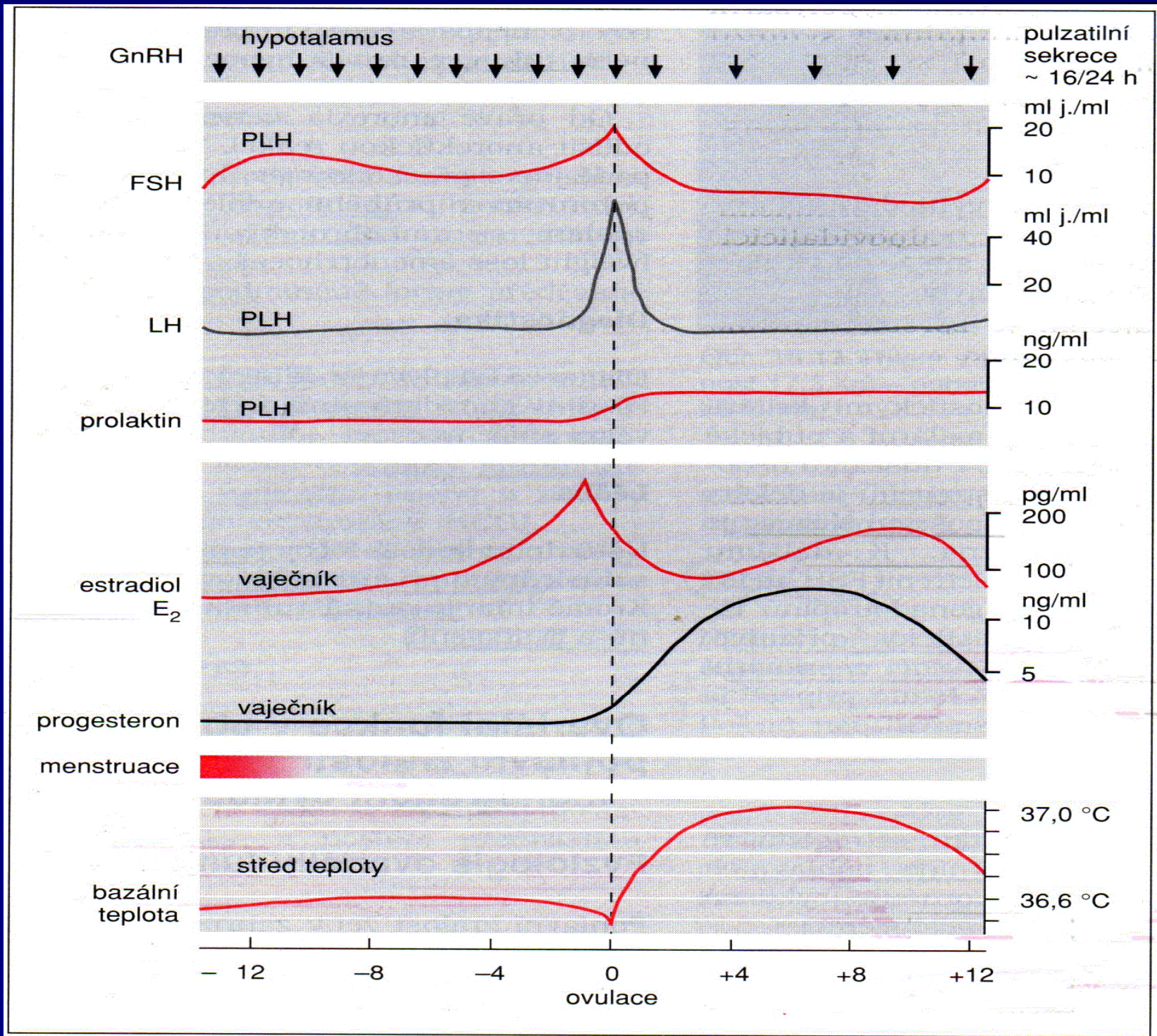
c

d

e







# Menstrual cycle disorders

- **symptomatic** (according to the clinical symptoms)
- **pathogenetical** (according to pathogenesis)
- **ethiological** (according to the ethiology)



# Frequency disorders

- **Polymenorrhoea** (less than 22 days)
- **Oligomenorrhoea** (more than 35 days)
- **Amenorrhoea** (no bleeding)
  - primary amenorrhoea
  - secondary amenorrhoea

## Intensity and length disorders

- **Hypomenorrhoea** (less than 2 tampons/day)
- **Hypermenorrhoea** (more than 5 tampons/day, more than 8 days)
- **Menorrhagia** (more than 5 tampons/day, bleeding less than 7 days)

# **Intensity and length disorders**

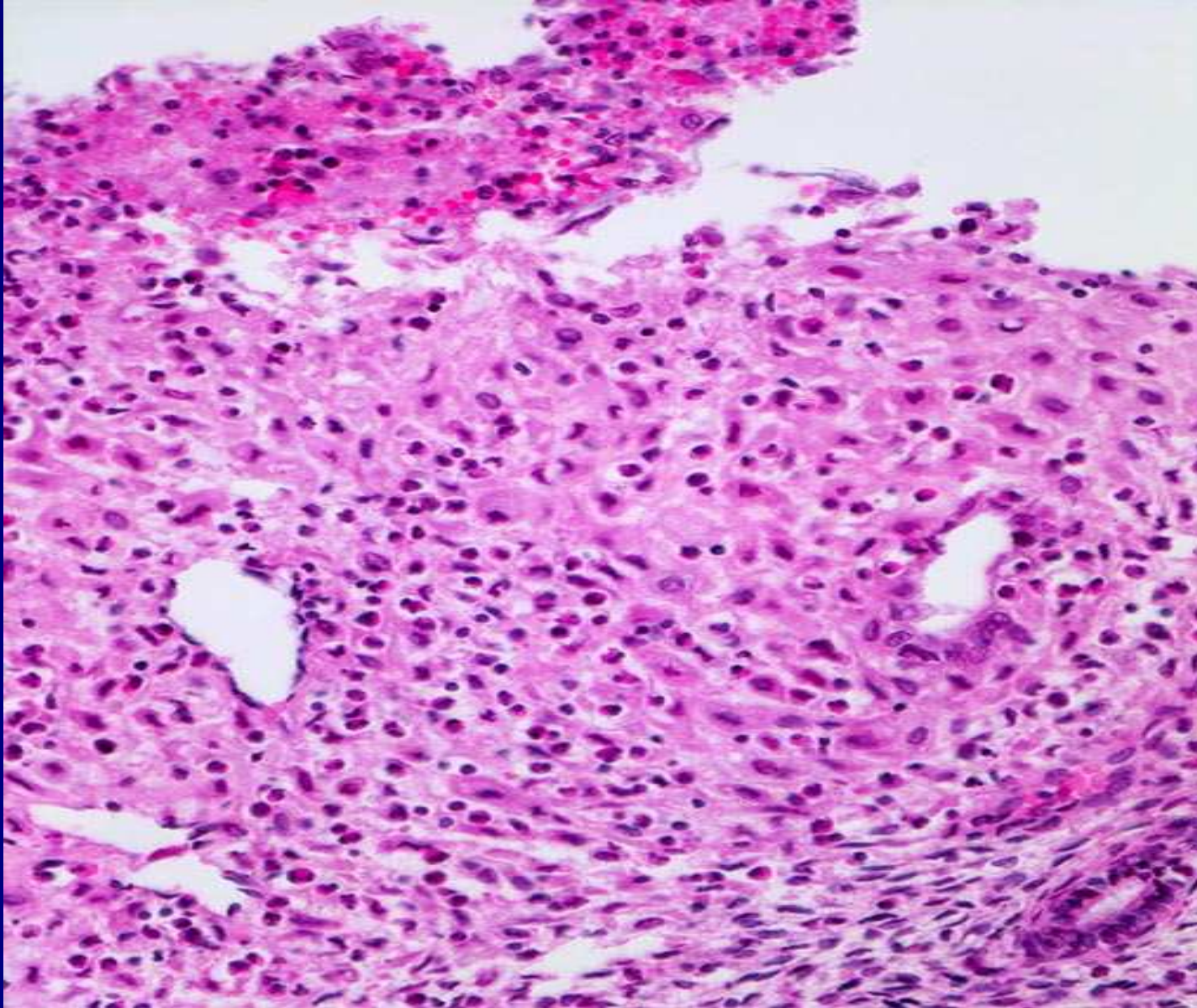
- **Premenstrual bleeding**
- **Ovulation bleeding**
- **Postmenstrual bleeding**

# Irregular uterine bleeding

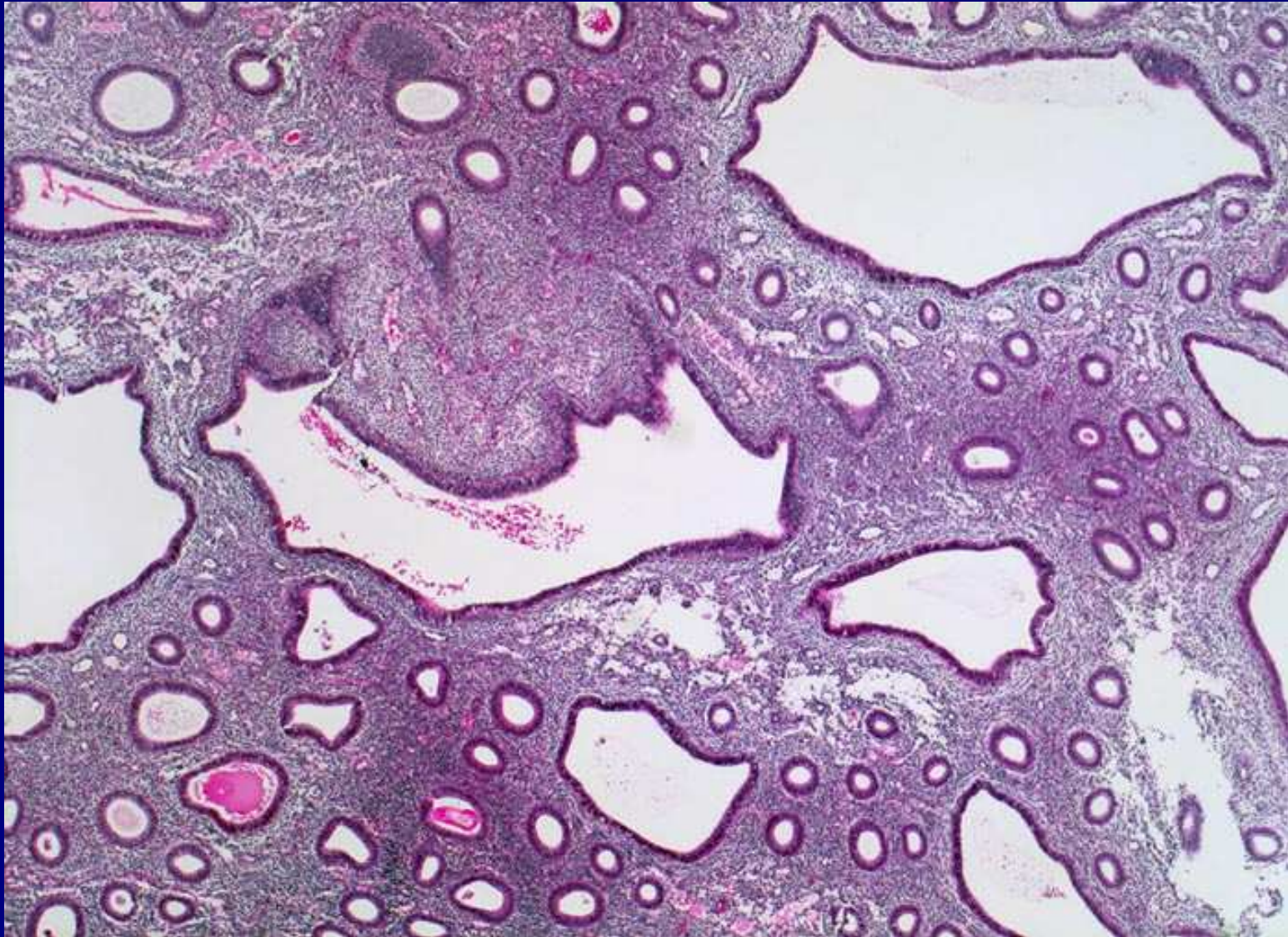
## Metrorrhagia - dysfunctional bleeding

- ovarian function disorder
- follicle persistence, corpus luteum absence
- estrogens elevation, gestagens shortage
- irregular endometrium shedding
- glandular cystic endometrial hyperplazia

# Stromaglandular dissociation



# Cystic glandular hyperplasia



# Amenorrhoea

**Physiological** (before menarche, gravidity, post menopause)

**Pathological** (primary, secondary)

## A. according to disorder level

- anatomical malformations
- ovarian disorders
- pituitary gland disorders
- CNS disorders (hypothalamus, suprahypothalamus)

# Amenorrhoea

## B. according to ovarian structure

- normal ovulating ovaries
- anovulating ovaries (regulation centres disorders)
- afunctional ovaries (dysgenesis)

**Cryptomenorrhoea** - anatomical obstruction



# Menstrual cycle classification according to WHO

- I. Hypogonadotropical normoprolactinemia ovarian insufficiency**  
(Kallman syndrom, anorexia nervosa, Sheehan syndrom)
- II. Normogonadotropical normoprolactinemia ovarian insufficiency**
  - IIa.-** anovulation, corpus luteum insufficiency
  - IIb.-** normogonadotropin normoprolact. amenorea (hyperandrogenemia)
- III. Hypergonadotropin ovarian insufficiency** (Turner sy, POF)
- IV. Anatomical amenorea** (Rokytanski sy)
- V. Hyperprolaktinemia** (prolactinoms)
- VI. Dysfunctional hyperprolactinemia** (thyreoid gland, stress)
- VII. Organic destruction of hypothalamus** (kraniofaryngeom)

# Diagnosis

**Menstrual calendar** (basal temperature)

**Hormonal examinations**

- **basal:** FSH, LH, prolactin, 17-betaestradiol, progesteron, testosteron, SHBG
- **comprehensive:** štítná žláza, nadledvina
- **functional cytology**

**Ultrasound** - morphology of endometrium, uterus, ovaries

**Endometrial biopsy** - abrasion, microabrasion

# Diagnosis

## Endometrial histology

menstruation	1. - 4. day
early proliferation	5. - 8. day
advanced proliferation	9. - 11. day
late proliferation	12. - 14. day
early secretion	16. - 18. day
advanced secretion	19. - 22. day
late secretion	23. - 24. day
secretion in regresion	25. - 28. day

# Diagnosis

**Hysteroscopy** (diagnostical, operative)

**Laparoscopy** (diagnostical, biopsy)

**X-ray methods - CT, MRI**

**Genetics**

**Endocrinology**

**Hematology**

# Diagnosis

## Funktional tests

- Progesteron test
- Estrogen - progesteron test
- Gonadotropin test
- Clomifen citrate test
- Metoklopramid test

# Therapy

## Stop the bleeding

- **hormonal** - estrogens, gestagens
- **surgery** - uterine abrasion,  
hysteroskopie

**Prevention** - gestagens