

THE NORMAL CERVIX

Teresa M. Darragh, M. D.
UCSF, Depts. Of pathology & Ob/GYN

Normal Cervix: Anatomic Landmarks

- Fibro-muscular cylinder, 3 x 5 cm
- Exocervix
- External os
- Endocervical canal
- Internal os

Normal cervix

- Size and shape of the cervix varies:
 - Age
 - Hormonal status
 - Parity

Exocervix

- Ectocervix
- Portio vaginalis
- Anterior and posterior lips
- Vaginal surface of the cervix
- Extends from the external os to the vaginal fornix

External Os

The external opening of the endocervical canal
(as seen on speculum exam)

Endocervix

- Endocervical canal
- Extends from the:
 - Internal os (proximal)
 - External os (distal)

The Normal Cervix: Histology

- Exocervix
 - Stratified squamous epithelium
- Transformation Zone
 - Squamous-columnar junction
 - Metaplastic squamous epithelium

- Endocervical canal
 - Single layer mucin-producing columnar cells

Exocervix

- Original squamous epithelium
- Stratified squamous epithelium
 - Estrogen responsive
 - Usually contains glycogen
 - Basis of Lugol's examination
- Fine reticular vascular plexus

Original squamous epithelium

- Proximal extent
 - Original squamous-columnar junction of cervix
- Distal extent
 - Hart's line
 - Vulvo-vaginal junction
 - Junction between
 - + glycogenated squamous epithelium of vagina
 - + non-glycogenated squamous epithelium of vulva

Endocervical Canal

- Columnar epithelium
- Arranged in longitudinal folds or clefts
 - Extent to depth of 5-8 mm
- Not true glands
- Single layer of mucin producing columnar cells
- Occasional ciliated cells

Original squamocolumnar junction

Line of demarcation between original squamous epithelium and original columnar epithelium

Squamocolumnar junction

- Changes location over lifetime of woman
- Estrogen dependent alteration in bulk of cervical stroma
- Squamous metaplasia
- Leads to development of the cervical **transformation zone**

Cervical Transformation Zone

Original squamocolumnar junction

Squamous metaplasia

Current squamouscolumnar junction

Squamous metaplasia

- “Normal” physiologic process
- Columnar epithelium replaced by squamous epithelium
 - Ingrowth from original SCJ
 - Reserve cell hyperplasia
- Triggered by exposure to acid environment of vagina
- Mature squamous metaplasia
 - Glycogenated
- Immature
 - Non-glycogenated
 - Hypothesized to be especially vulnerable to oncogenic HPV

Majority of Cervical Cancers and Precursor Lesions

Arise In

Immature Squamous Metaplasia

of the

Cervical Transformation Zone