High-Grade Squamous Intra-Epithelial Lesion

EPITHELIAL CELL ABNORMALITY OF SQUAMOUS CELL TYPE

- There is wide variation in the cytological appearance of HSIL.
- As the severity of dysplasia increases, the cell appears more immature. There is an increase in the nuclear size and atypia therein, a decrease in the cytoplasm, and an increase in the nuclear-to-cytoplasmic (n:c) ratio.
- High-risk HPV is found in 97% of women with HSIL.

DIAGNOSTIC CRITERIA OF HSIL (FIGS. 12.1–12.7)

- Cells appear singly, in sheets, or in syncytial fragments.
- Cells are of parabasal, basal, or metaplastic type.0
- Nuclei are three times the size of intermediate cell nuclei (same range as low-grade squamous intra-epithelial lesion). There is variation in the size and the shape of the nuclei.
- Nuclei are hyperchromatic with coarse, evenly distributed chromatin.
- Nuclear membrane is markedly irregular.
- Nucleoli may be present.
- Cytoplasm is “immature,” dense or lacy, and delicate.
- Cytoplasm is eosinophilic/orangeophilic in keratinizing dysplasia.
- High n:c.
- Hyperchromatic crowded groups are mostly seen in carcinoma in situ.
- On liquid-based preparations, nuclear abnormalities are more pronounced because of the absence of obscuring features, single cells are more common, and streaking of abnormal cells is not seen because of specimen processing.

HSIL INVOLVING ENDOCERVICAL GLANDS (FIGS. 12.5 AND 12.7)

- Hyperchromatic-crowded groups or large syncytial aggregates with ill-defined cell borders.
- Cells within the cluster show overlapping loss of polarity.
- Peripheral flattening of cells.
- Nucleoli are not seen.

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Fig. 12.1. Small group of high-grade squamous intra-epithelial lesions. Nuclei are hyperchromatic and irregular (SurePath; Papanicolaou stain).

Fig. 12.2. Loose sheet of high-grade squamous intra-epithelial lesions (conventional smear; Papanicolaou stain).