EIN
Atypical Hyperplasia/EIN

Based on scientific and diagnostic advances, in 2014 the WHO moved that the precursor lesion for endometrioid carcinoma be “atypical hyperplasia/EIN,” rather than what was previously set forth in 1994 (simple/complex hyperplasia with/without atypia).
Terminology: EIN

EIN: endometrial intraepithelial lesion or endometrioid intraepithelial lesion

EIN is a precursor lesion comprised of a clonal proliferation of architecturally and cytologically altered glands that are prone to malignant transformation into endometrioid adenocarcinoma.
Histologic criteria for EIN

1. The gland to stroma ratio exceeds 1:1.
2. There is a cytologic difference between the area of crowded glands and the background or be clearly abnormal.
3. The size must exceed 1 mm in maximum linear extent.
EIN

Cytologically altered endometrial gland

Normal endometrial gland
EIN

Endometrial stroma
Endometrioid adenocarcinoma
Terminology: Endometrioid Adenocarcinoma
Endometrial adenocarcinoma, endometrioid type.

Endometrioid adenocarcinoma.

“a cancer in which the glandular pattern, when well differentiated, has cytologic features most like normal proliferative endometrium”

- Robboy’s Pathology of the Female Reproductive Tract 2nd ed. Pg. 396
Endometrioid adenocarcinoma
Histology of endometrioid carcinoma

Individual cells are larger with more rounded nuclei and prominent nucleoli.

Architecturally the glands appear more complicated than those of a benign proliferative endometrium.

They often display maze-like interconnected lumens, and areas of cribriform, villoglandular, or solid growth with no intervening stroma.
Grading of endometrioid carcinoma

Tumors are graded by the amount of non-squamous solid component observed by the pathologist.

FIGO Grade 1 = Less than 5%
FIGO Grade 2 = 5% to 50%
FIGO Grade 3 = Greater than 50%

Caveat: High-grade nuclei (marked atypia) may increase the FIGO grade by 1.
Immunostains for estrogen receptor (ER), progesterone receptor (PR), p53 and p16 may be performed on the tumor.

Endometrioid tumors are usually ER and PR positive.
The p16 usually shows a mottled or mosaic pattern.
The p53 usually shows a wild-type staining pattern.
Myoinvasion

In a biopsy the presence or absence of myoinvasion is usually not mentioned.

Tumor may be arising within or limited to a polyp.

Upon review of a hysterectomy specimen, it is expected that the pathologist comment on whether or not the tumor invades the myometrium.
Myoinvasion

No myoinvasion or myoinvasion that is less than \( \frac{1}{2} \) of the thickness of the myometrium.

Myoinvasion that is greater than \( \frac{1}{2} \) the thickness of the myometrium.
Serous adenocarcinoma
Terminology: Serous adenocarcinoma

Although serous adenocarcinoma is the official name, “papillary” serous carcinoma and serous carcinoma may be used in pathology reports and in the literature.
Histology of serous adenocarcinoma

Tumor cells have high-grade and pleomorphic nuclei.

Tumors can exhibit papillary, solid or glandular growth patterns.

The p53 immunostain can be used: null-pattern or strong positive nuclear staining.
p53
Grading of serous adenocarcinoma

All endometrial serous carcinomas are considered high-grade.

This is different than ovarian serous tumors that are divided into low-grade/high-grade.
Carcinosarcoma
Terminology: Carcinosarcoma

The WHO classification uses the term carcinosarcoma to characterize tumors that have both malignant epithelial and malignant mesenchymal components.

Malignant mixed mullerian tumor is another name used for these tumors.
Histology of Carcinosarcoma

The epithelial component is usually a high-grade endometrioid or serous adenocarcinoma.

The mesenchymal component may be either a homologous or heterologous sarcoma.

The two tumors are often seen admixed together within the histologic sections.
Carcinosarcoma