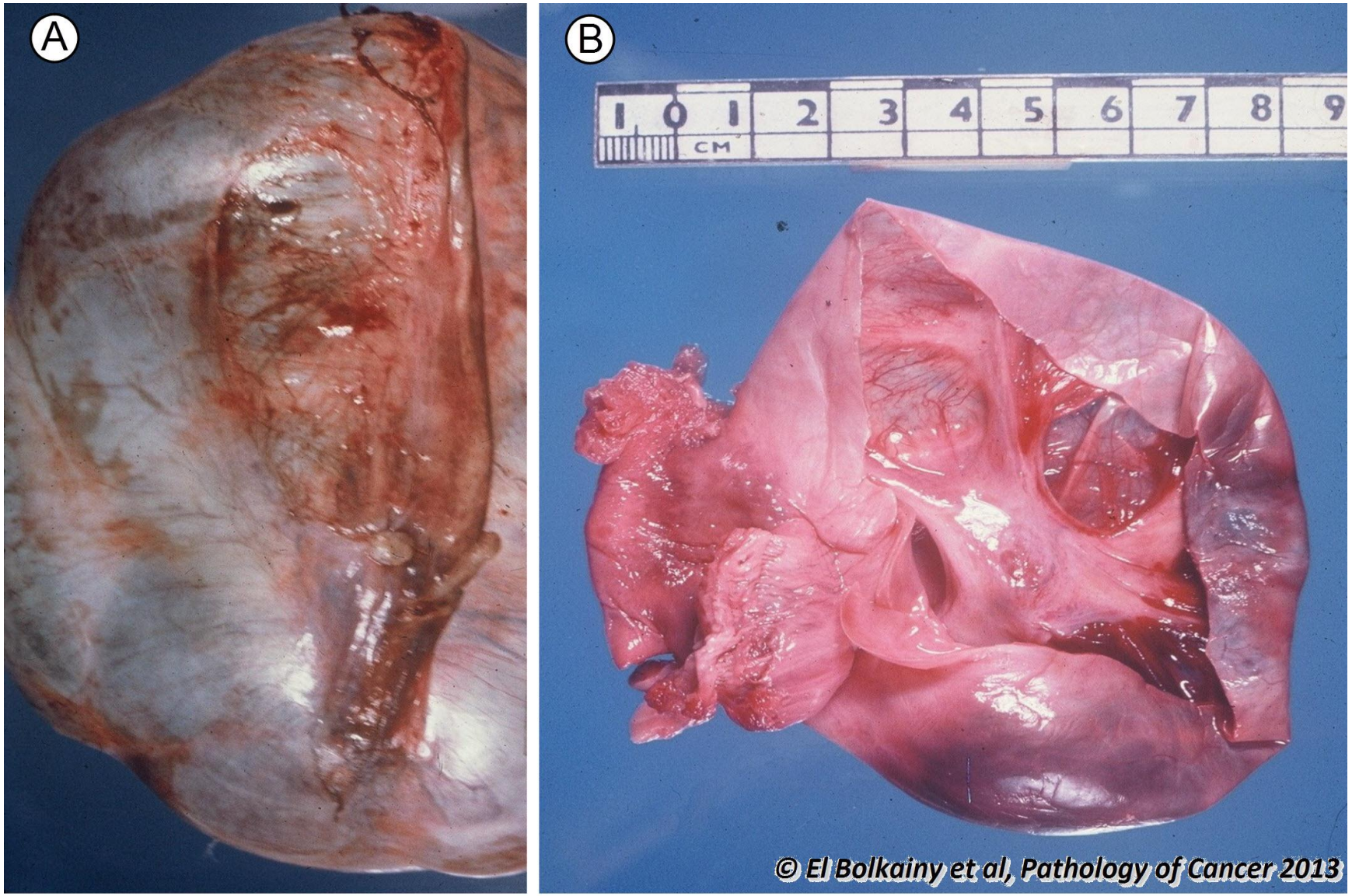
Chapter 17

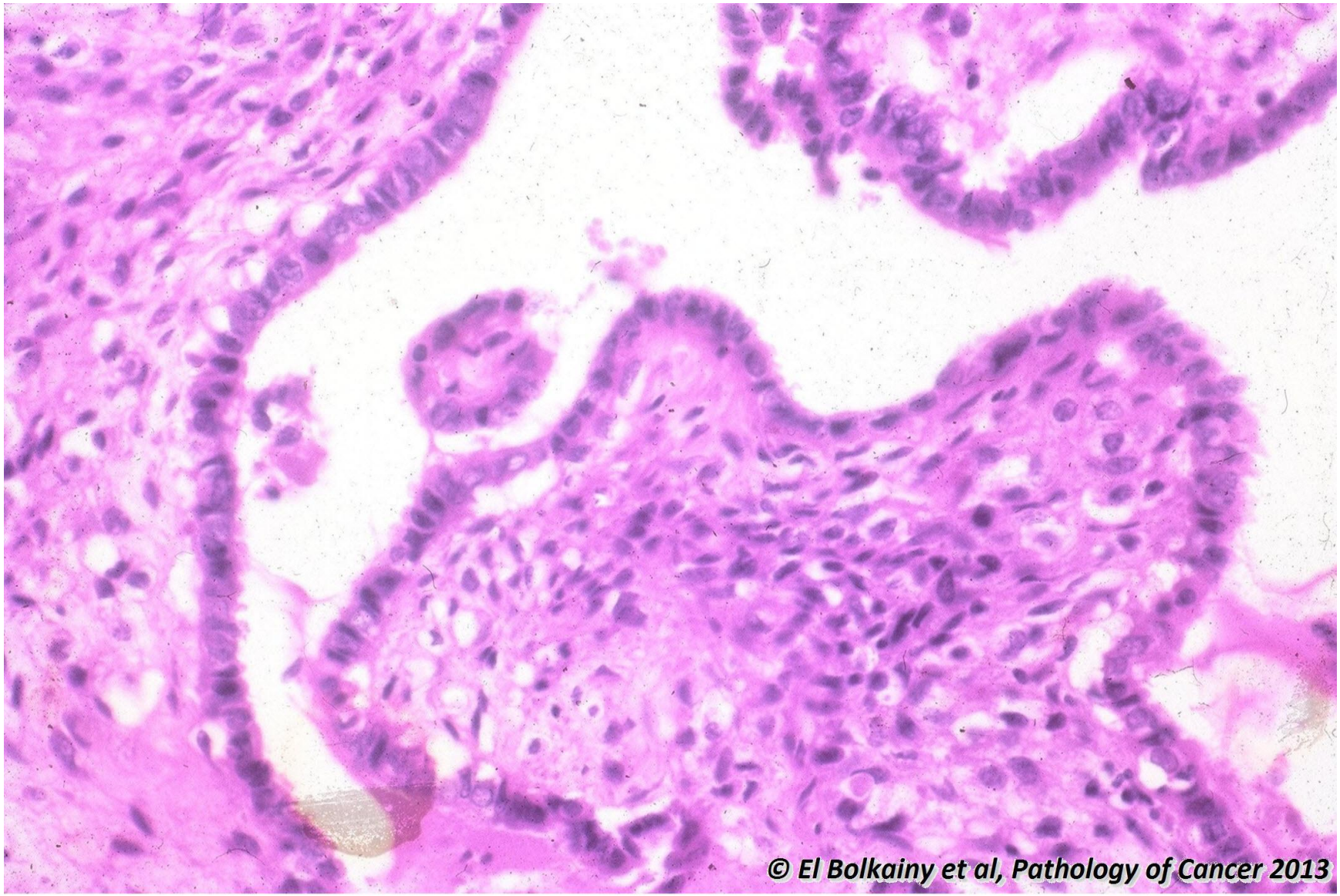
Gynecologic malignancies

17.1 Ovary, benign serous cystadenoma, gross features.



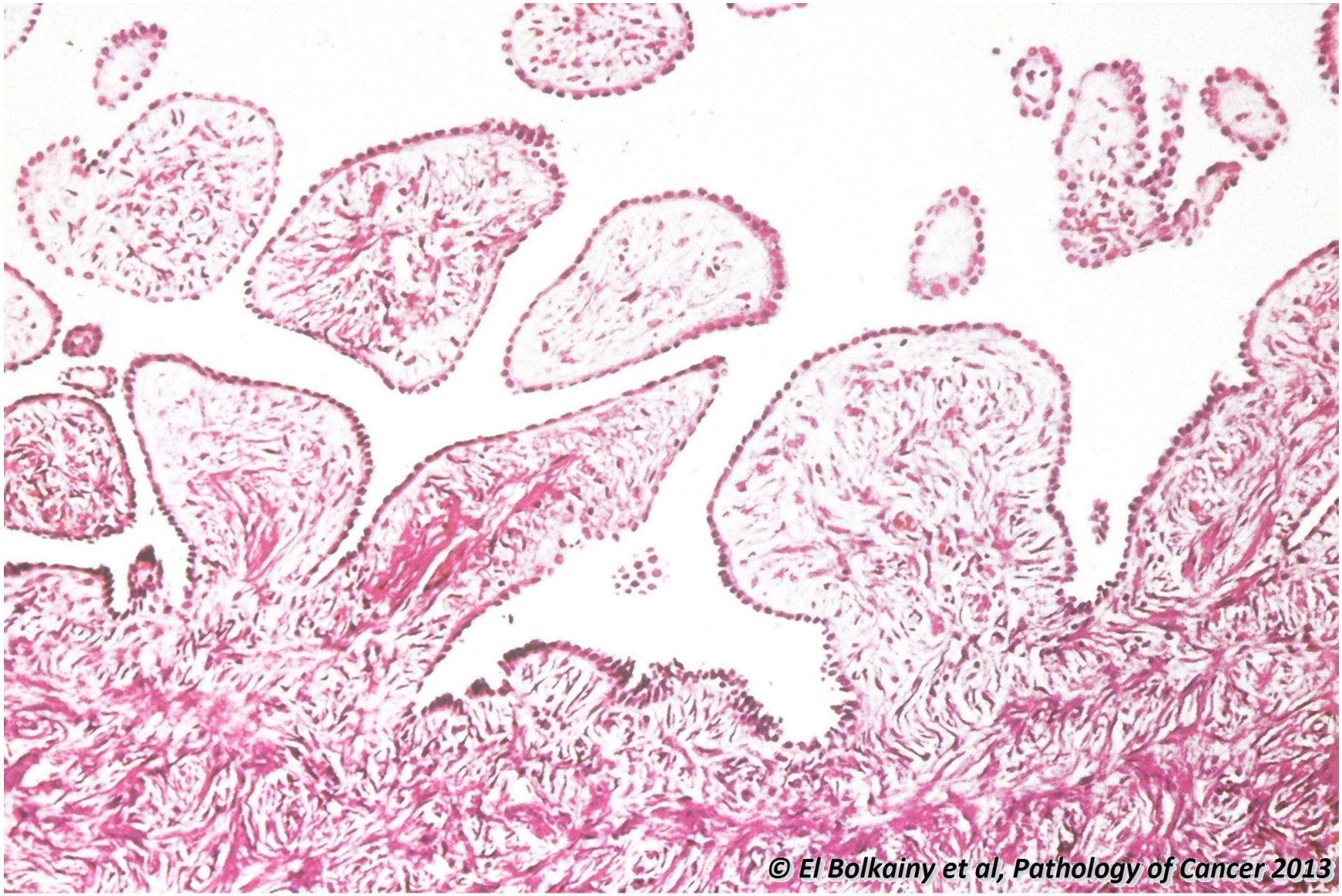
Picture 17-1 **Ovary, benign serous cystadenoma, gross features. A** and **B** Note the thin wall of cyst, smooth inner and outer surface, as well as, absence of any solid mass components.

17.2 Ovary, benign serous cystadenoma, histology.



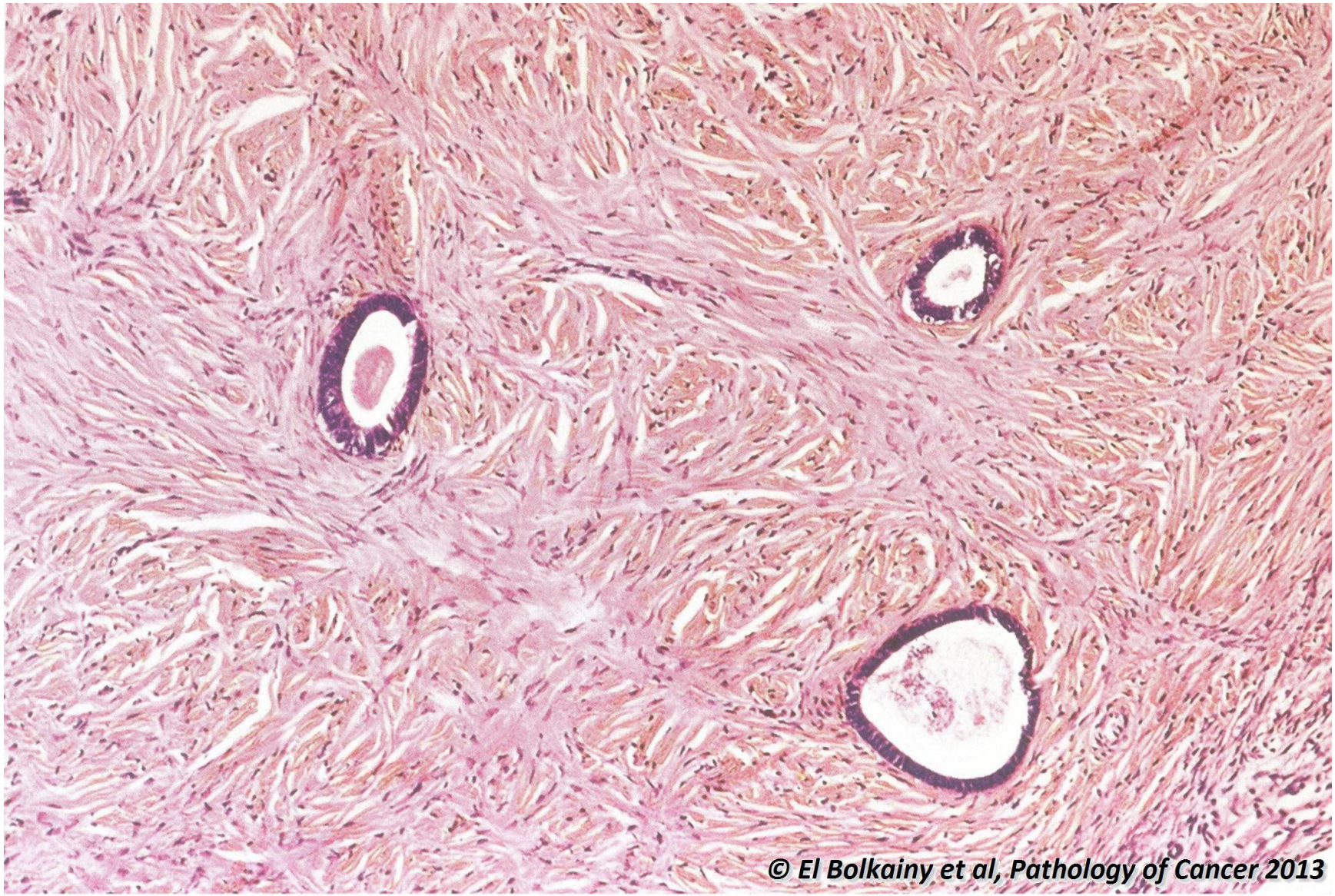
Picture 17-2 **Ovary, benign serous cystadenoma, histology.** The cyst is lined by a single layer of ciliated epithelium (resembling fallopian tube lining). No nuclear atypia.

17.3 Ovary, benign serous papillary cystadenofibroma, histology.



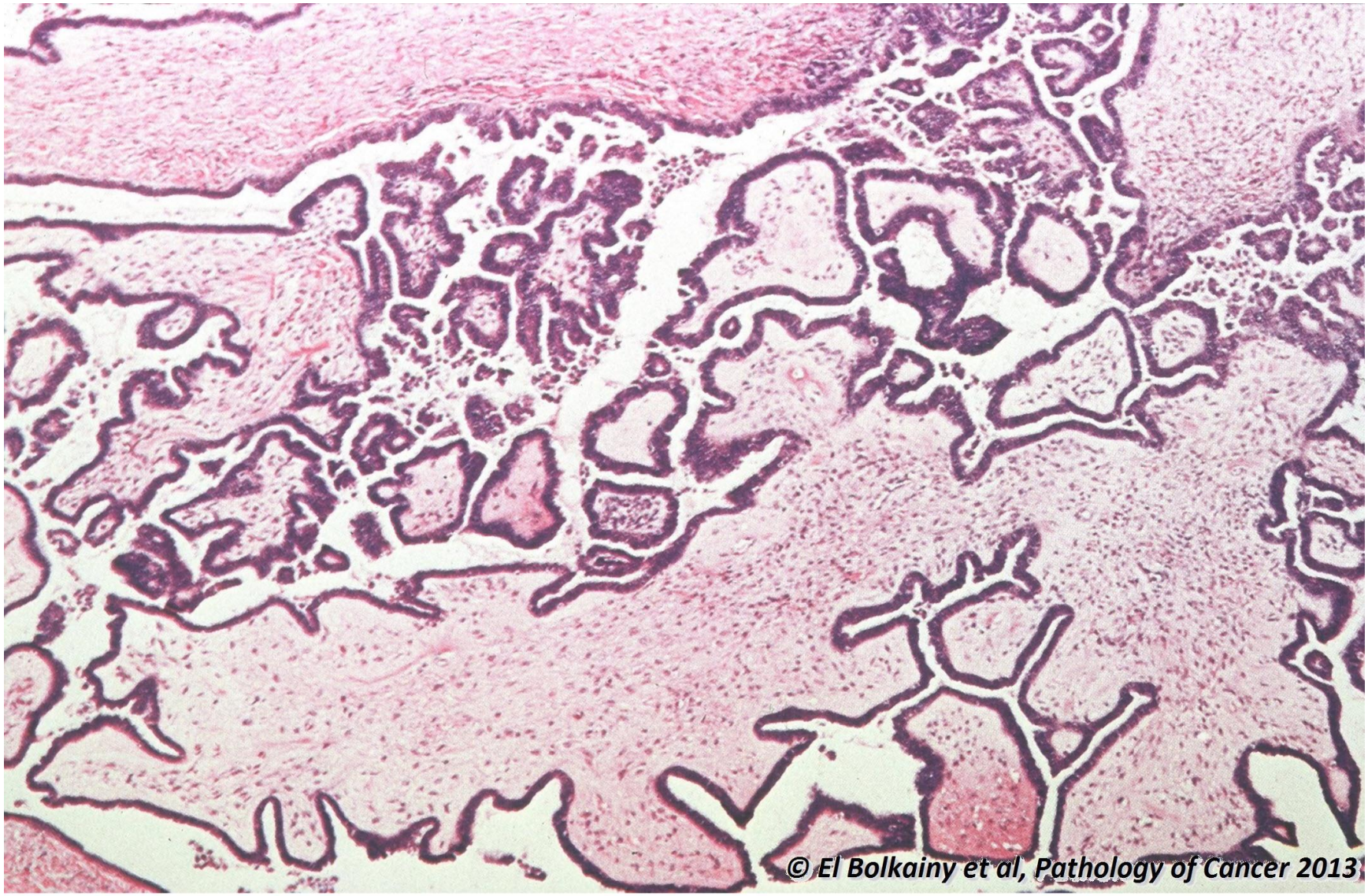
Picture 17-3 **Ovary, benign serous papillary cystadenofibroma, histology.** The inner surface of the cyst shows stroma-rich micronodules covered by a single layer of bland serous epithelium.

17.4 Ovary, benign serous adenofibroma, histology.



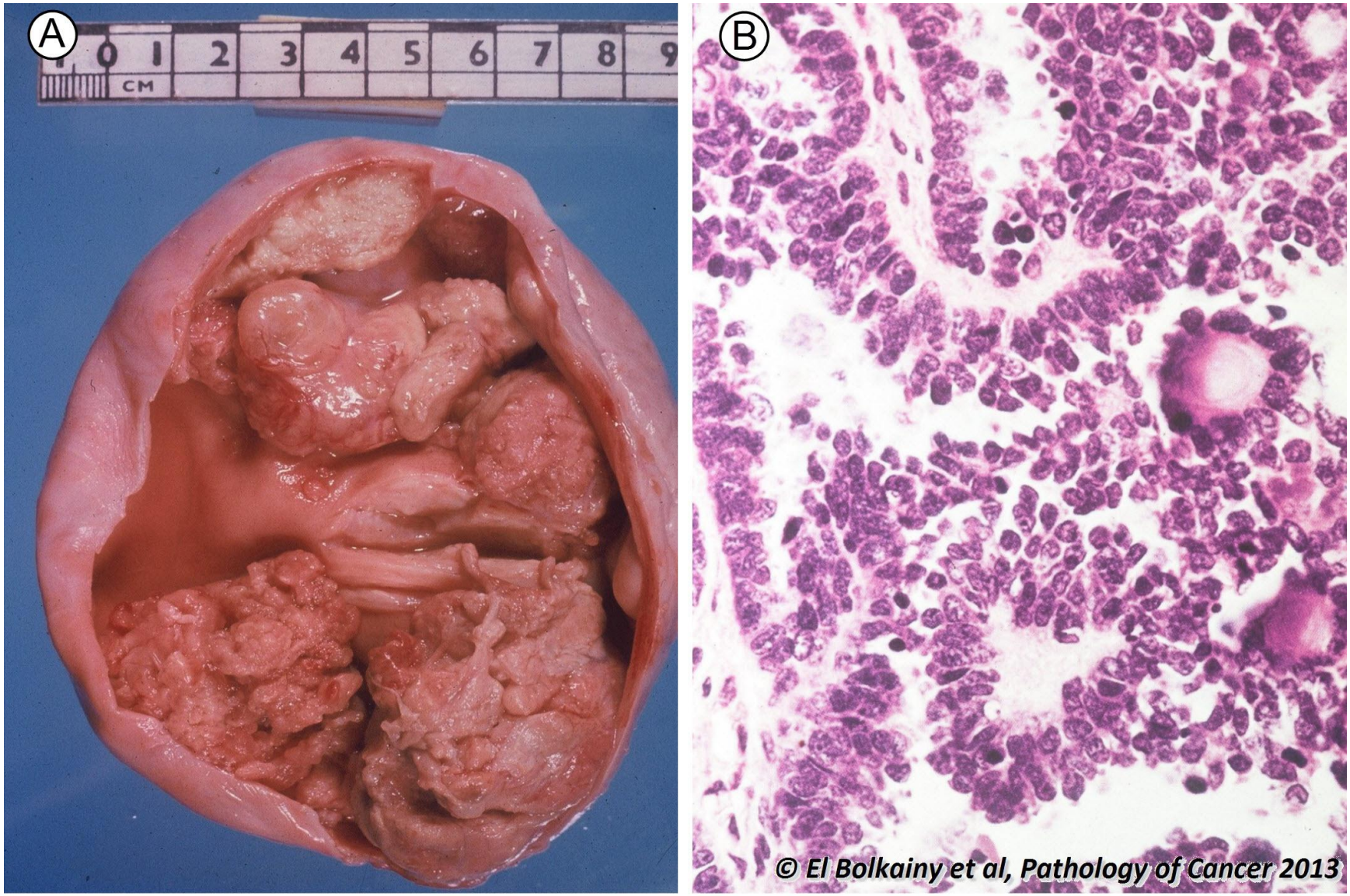
Picture 17-4 **Ovary, benign serous adenofibroma, histology.** The tumor is solid. Note the abundant fibrous stroma containing few epithelial microscopic structures of serous nature. No atypia or mitosis.

17.5 Ovary, serous borderline tumor, histology.



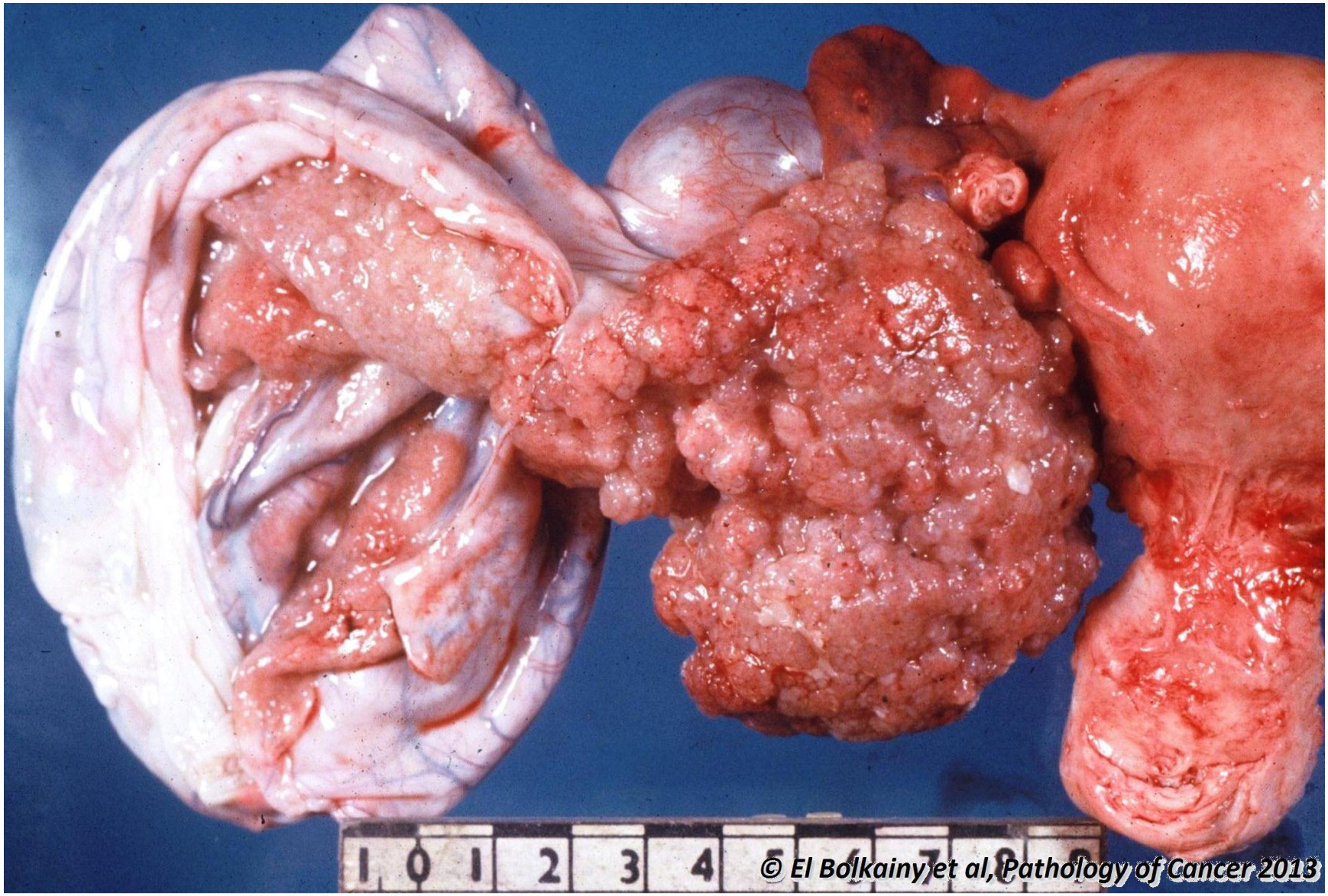
Picture 17-5 **Ovary, serous borderline tumor, histology.** A cystic papillary pattern, covered by multi-layered serous epithelium, with intervening slit-like spaces. Nuclear atypia and mitotic activity are minimal. Microinvasion of stroma must not exceed 5 mm in diameter. The biology is low malignant potential and 35% of cases are associated with implants in the peritoneum.

17.6 Ovary, serous cystadenocarcinoma.



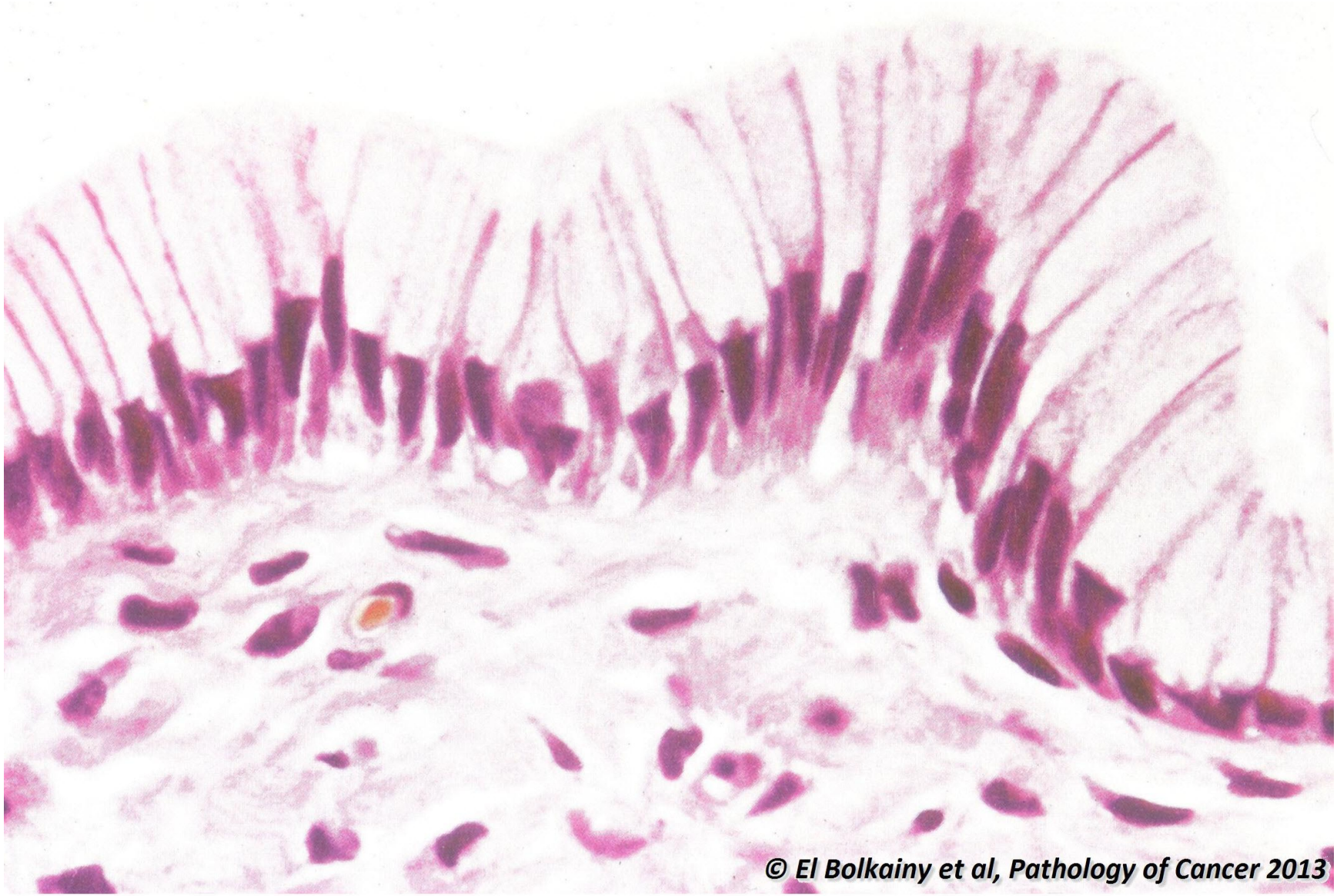
Picture 17-6 **Ovary, serous cystadenocarcinoma. A** Gross, the cyst contains multiple solid and papillary tumors. **B** Histology, irregular glands and nests of tumor cells invading the stroma. Nuclear anaplasia and mitotic activity are moderate. Reporting capsular invasion is essential for FIGO staging.

17.7 Papillary serous adenocarcinoma, gross features.



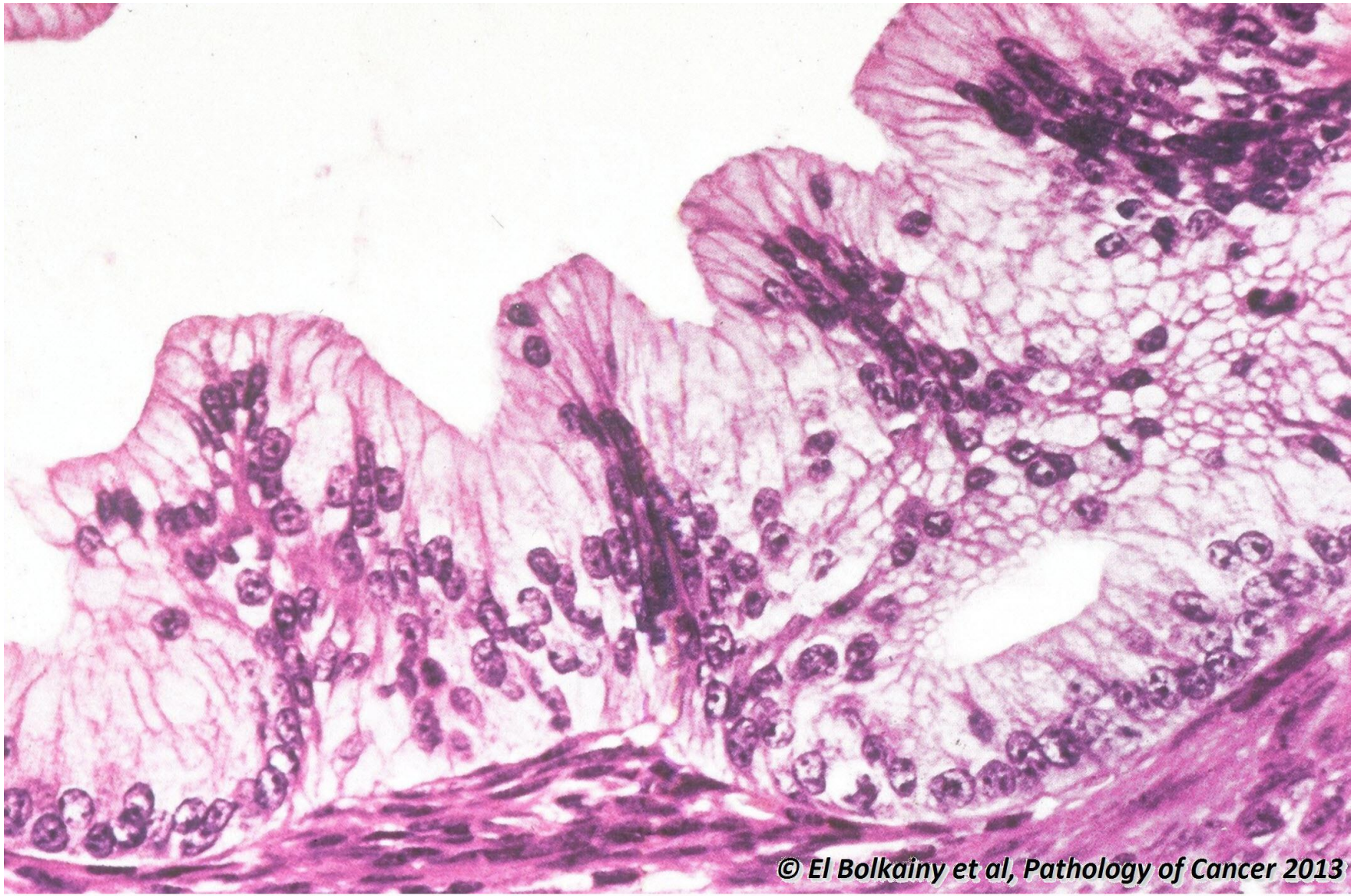
Picture 17-7 **Papillary serous adenocarcinoma, gross features.** A cystic papillary carcinoma with capsular invasion and large tumor implant on pelvic peritoneum (FIGO stage II). Immunostains: CK7+ and CK20-.

17.8 Ovary, benign mucinous cystadenoma, histology.



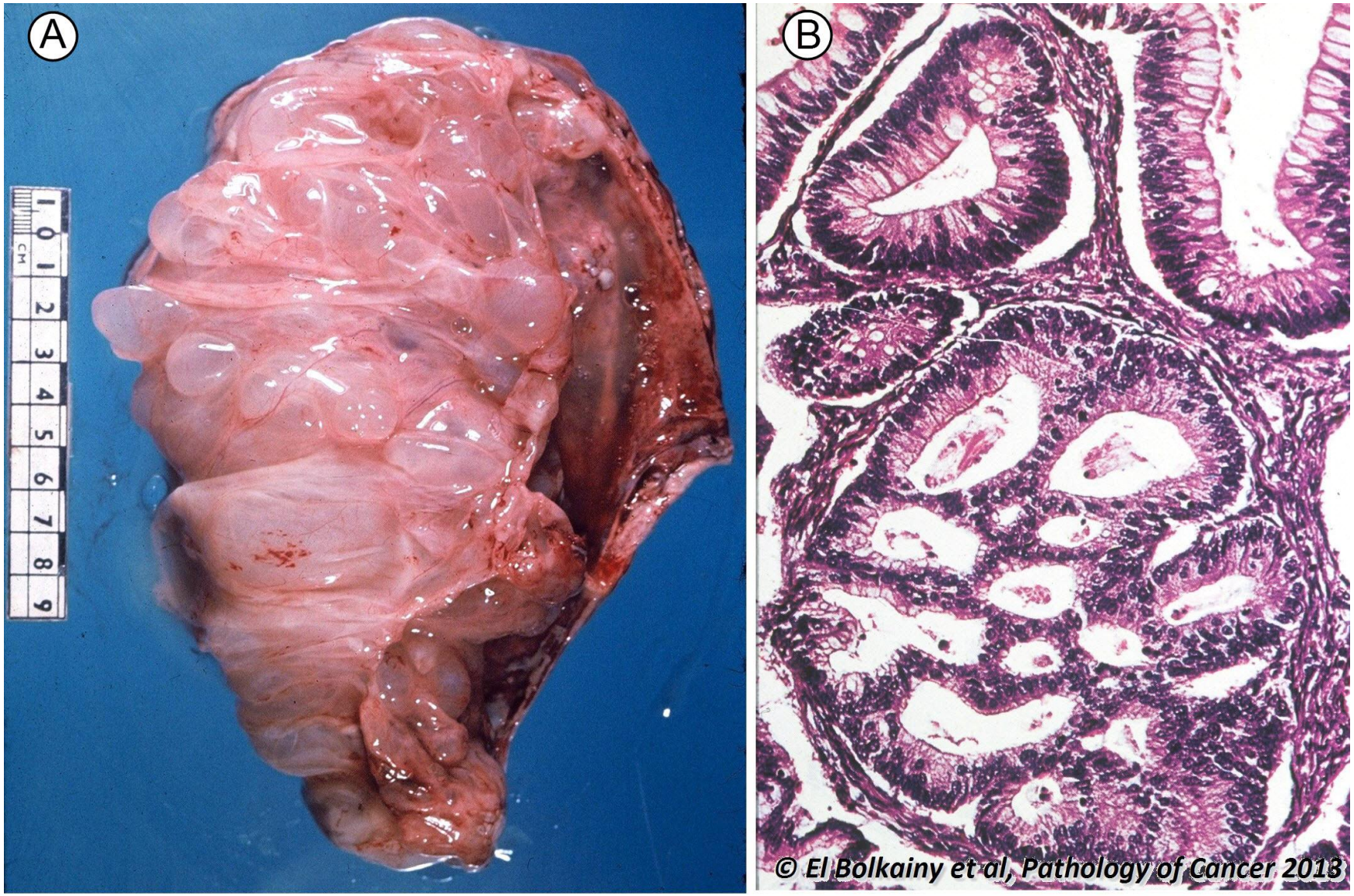
Picture 17-8 **Ovary, benign mucinous cystadenoma, histology.** The cyst wall is lined by a single layer of columnar epithelium with clear mucinous cytoplasm (resembling endocervical epithelium). Atypia and mitosis are absent.

17.9 Ovary, borderline mucinous neoplasm, histology.



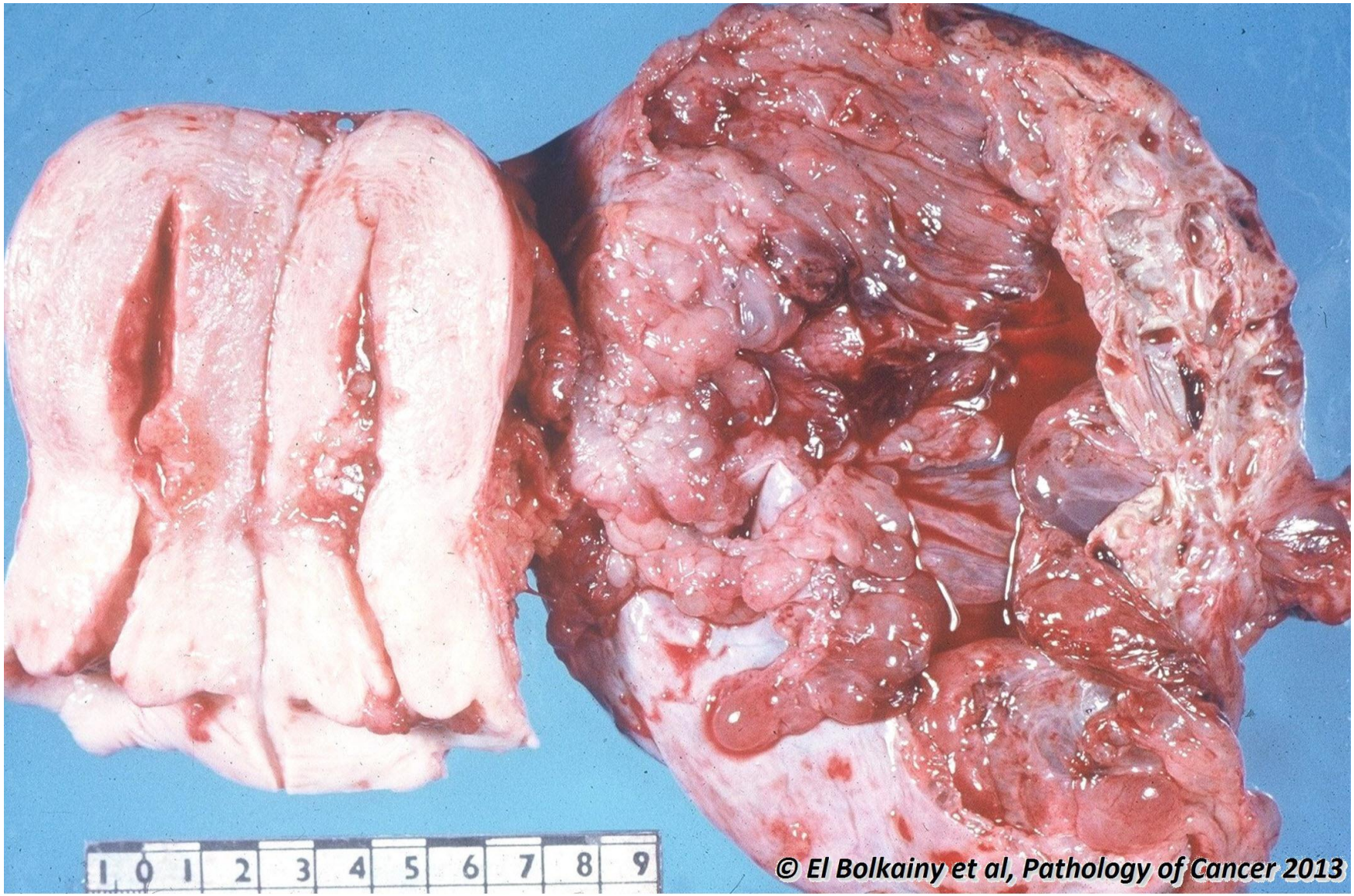
Picture 17-9 **Ovary, borderline mucinous neoplasm, histology.** Cystic tumor with small solid or multinodular areas (1-2 cm). Stratified lining (2-3 layers) of atypical epithelium (intestinal or gastric type). Minimal atypia and mitosis, microinvasion of stroma (< 5 mm). Immunostains: CK7+ and CK20-.

17.10 Ovary, mucinous adenocarcinoma.



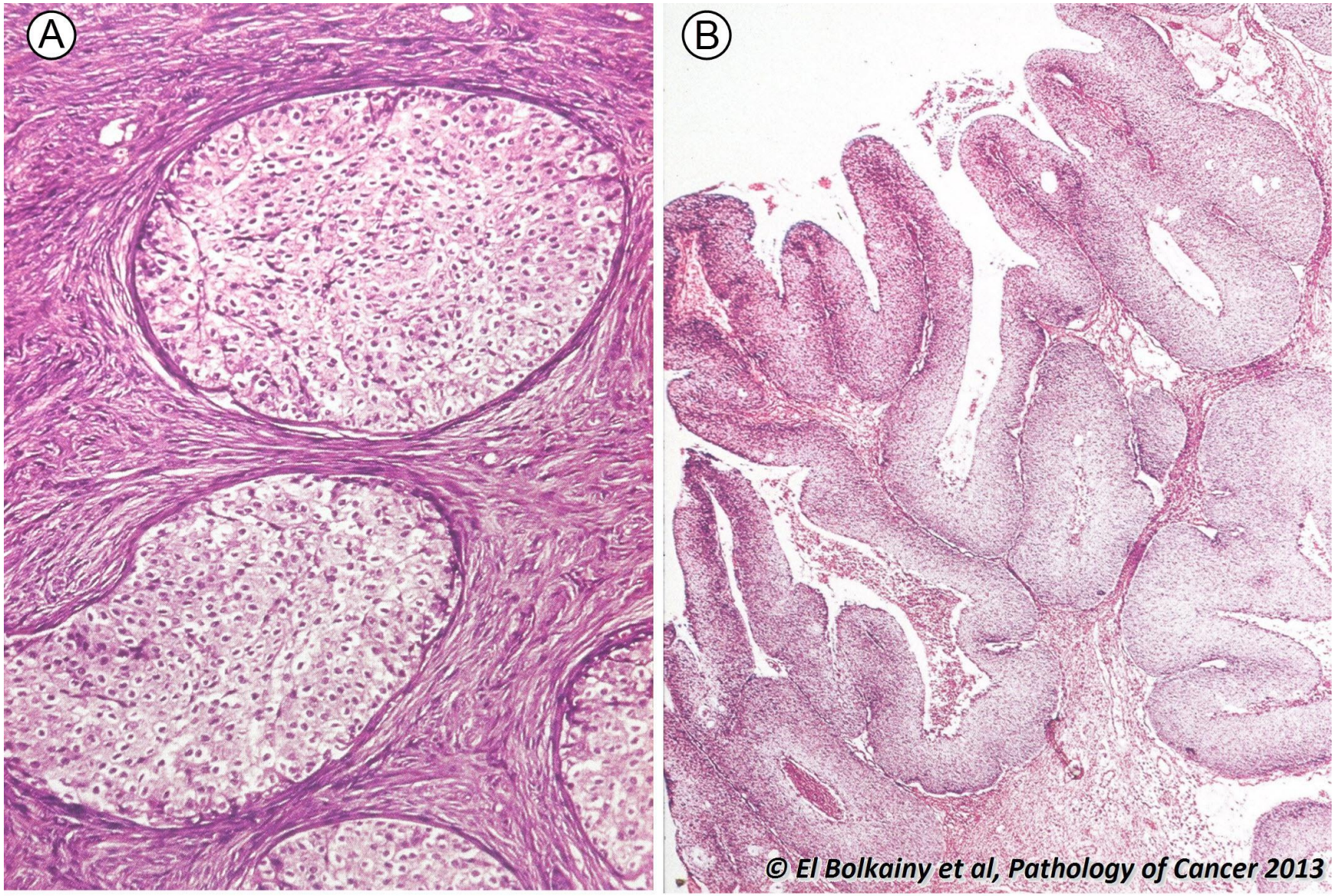
Picture 17-10 **Ovary, mucinous adenocarcinoma. A** Gross, solid tumor with glistening mucinous cut section. **B** Histology, destructive stromal invasion (> 5 mm) with irregular glands showing anaplasia and mitotic activity. Immunostains: show intestinal differentiation, CEA, CK7 and CK20 positivity.

17.11 Association of ovarian mucinous carcinoma and endometrial carcinoma, gross appearance.



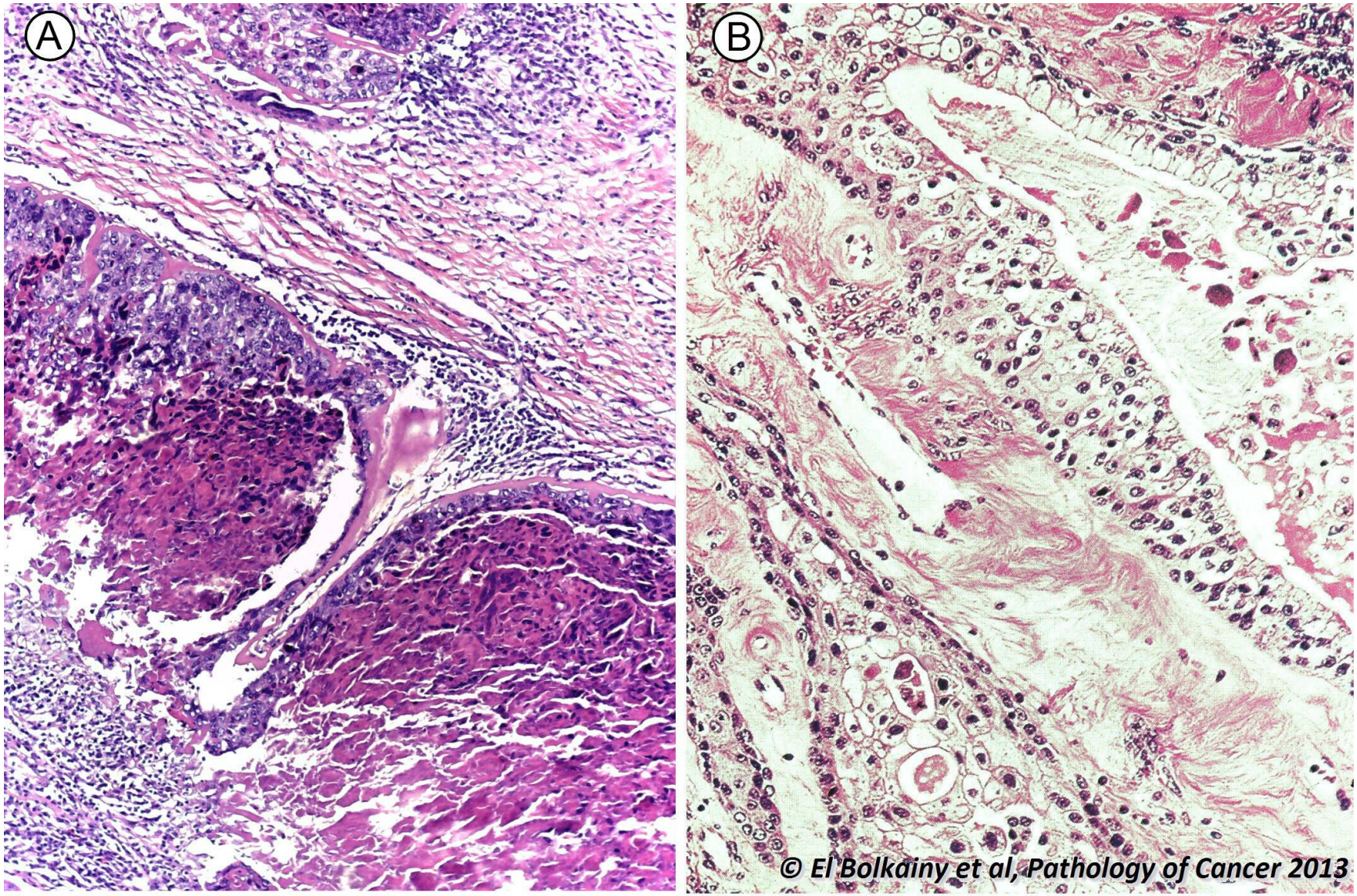
Picture 17-11 **Association of ovarian mucinous carcinoma and endometrial carcinoma, gross appearance.** This may be explained by five possibilities. The two tumors may represent multiple primaries or one metastatic from the other, or both are metastatic from a primary in the colon or they may be a part of lynch II syndrome. In the last case, case mutation of mismatch repair genes will be evident.

17.12 Ovary, Brenner tumor, histology.



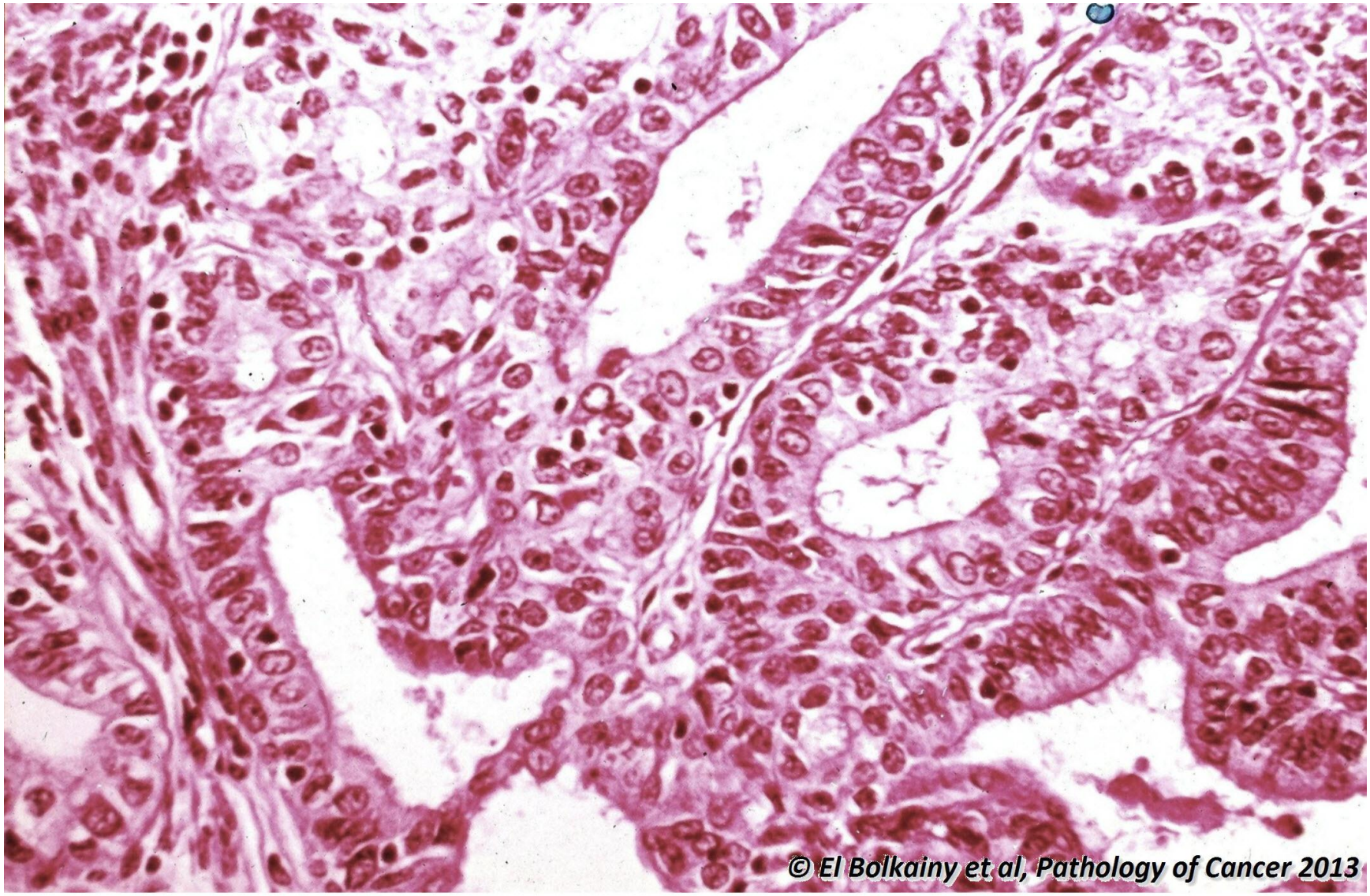
Picture 17-12 **Ovary, Brenner tumor, histology. A** Benign Brenner (96% of cases) solid transitional epithelial nests with small central lumen in dense fibrous stroma. **B** Borderline Brenner, papillary transitional tumor with exophytic or endophytic pattern, low grade atypia and minimal mitosis. Brenner tumors show a strong association with mucinous tumors.

17.13 Ovary, malignant Brenner tumor, histology.



Picture 17-13 **Ovary, malignant Brenner tumor, histology.** It simulates high-grade transitional carcinoma of bladder. **A** Marked tumor necrosis and anaplasia. **B** Squamous , glandular or spindle cell differentiation.

17.14 Ovary, endometrioid adenocarcinoma, histology.

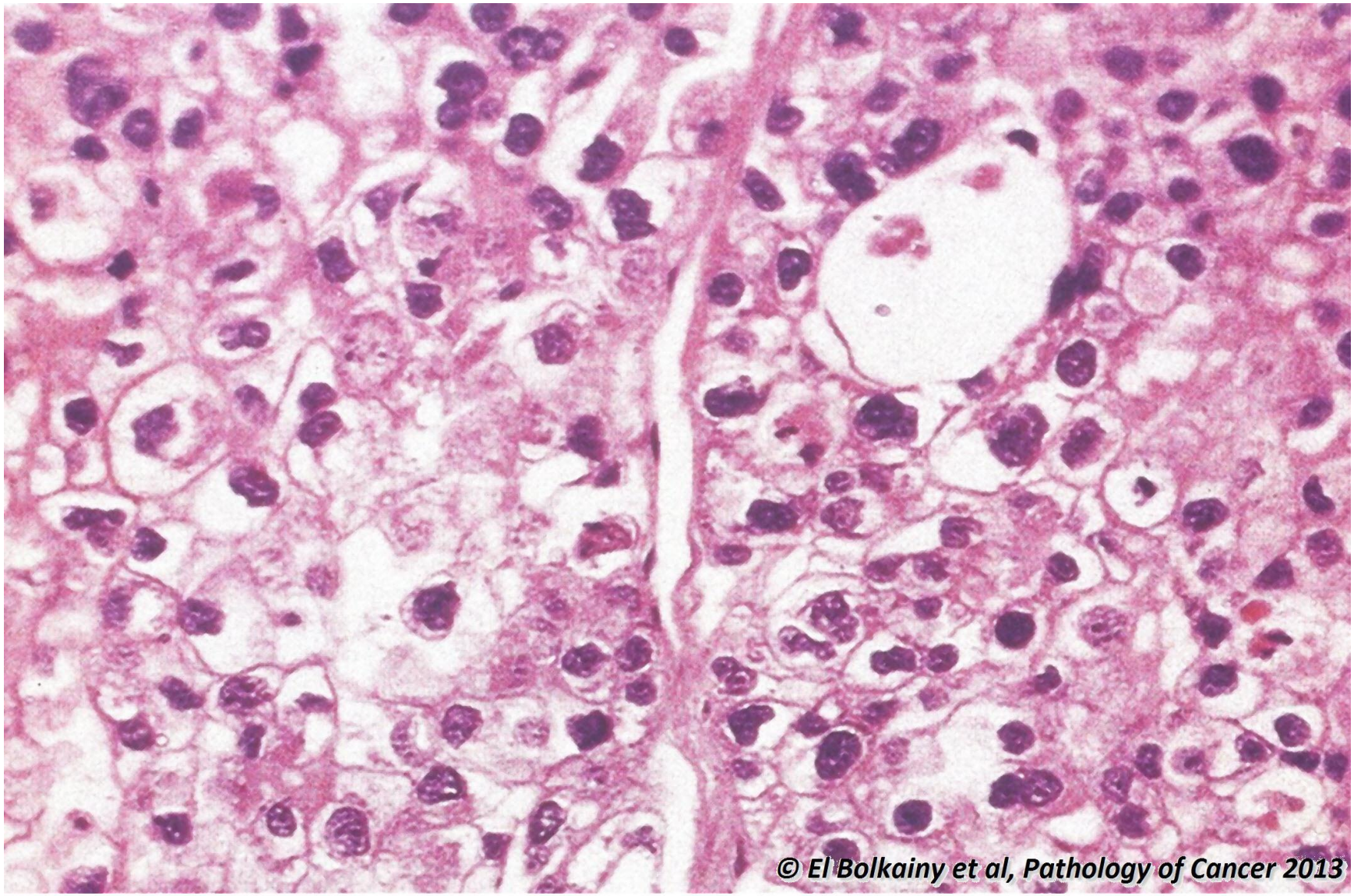


Picture 17-14 **Ovary, endometrioid adenocarcinoma, histology.** Round and elongated glands lined by stratified anaplastic epithelium with mitotic activity. Glands are back to back without intervening stroma. Immunostains: CK7+, CK20-, ER and PR positivity.

17.15 Association of bilateral ovarian endometrioid carcinoma with endometrial carcinoma, gross.

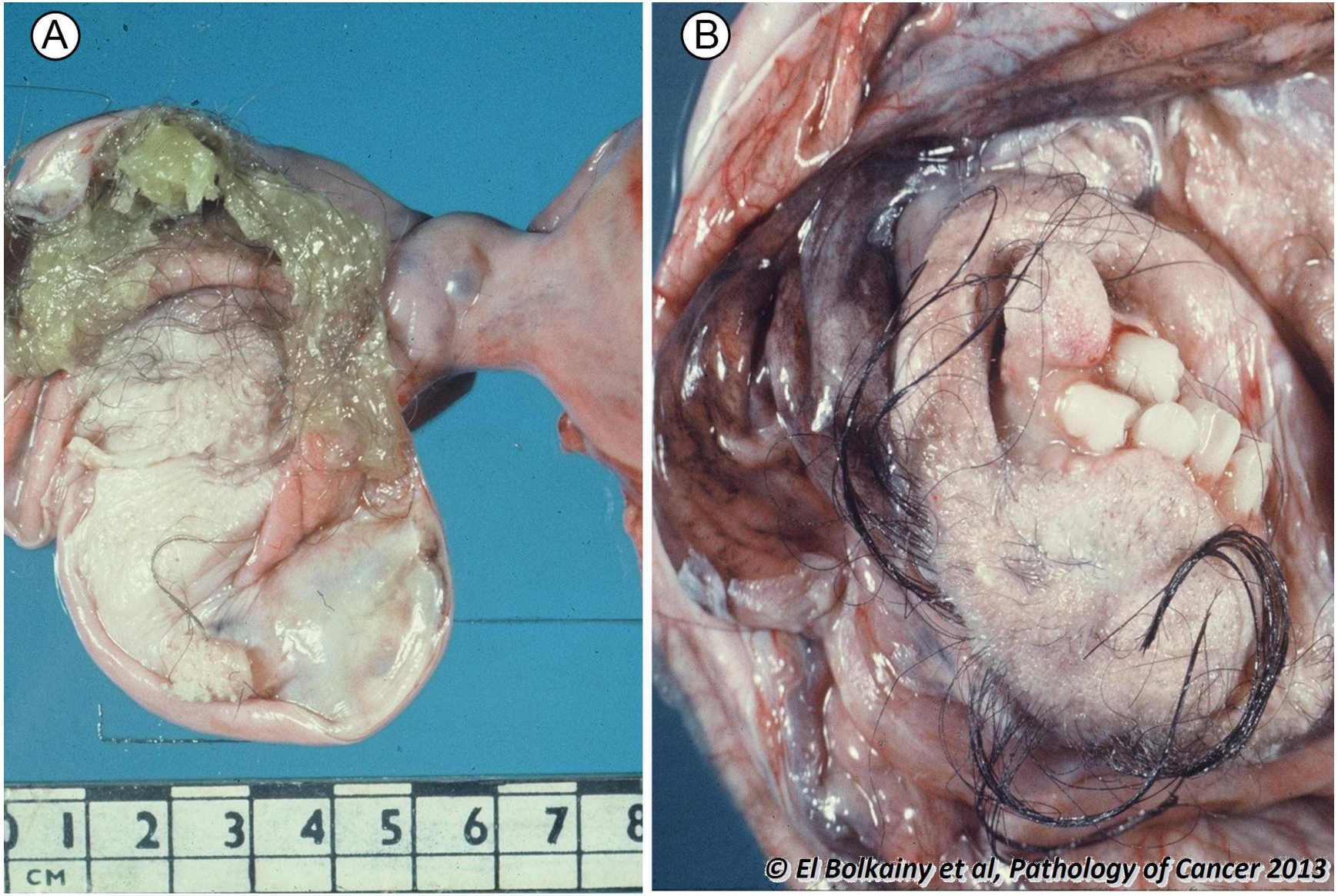
Picture 17-15 **Association of bilateral ovarian endometrioid carcinoma with endometrial carcinoma, gross.** This association is encountered in 20% of endometrioid ovarian carcinoma and represent synchronous multiple primary tumors. Pelvic endometriosis may be also associated in 20% of cases.

17.16 Ovary, clear cell carcinoma, histology.



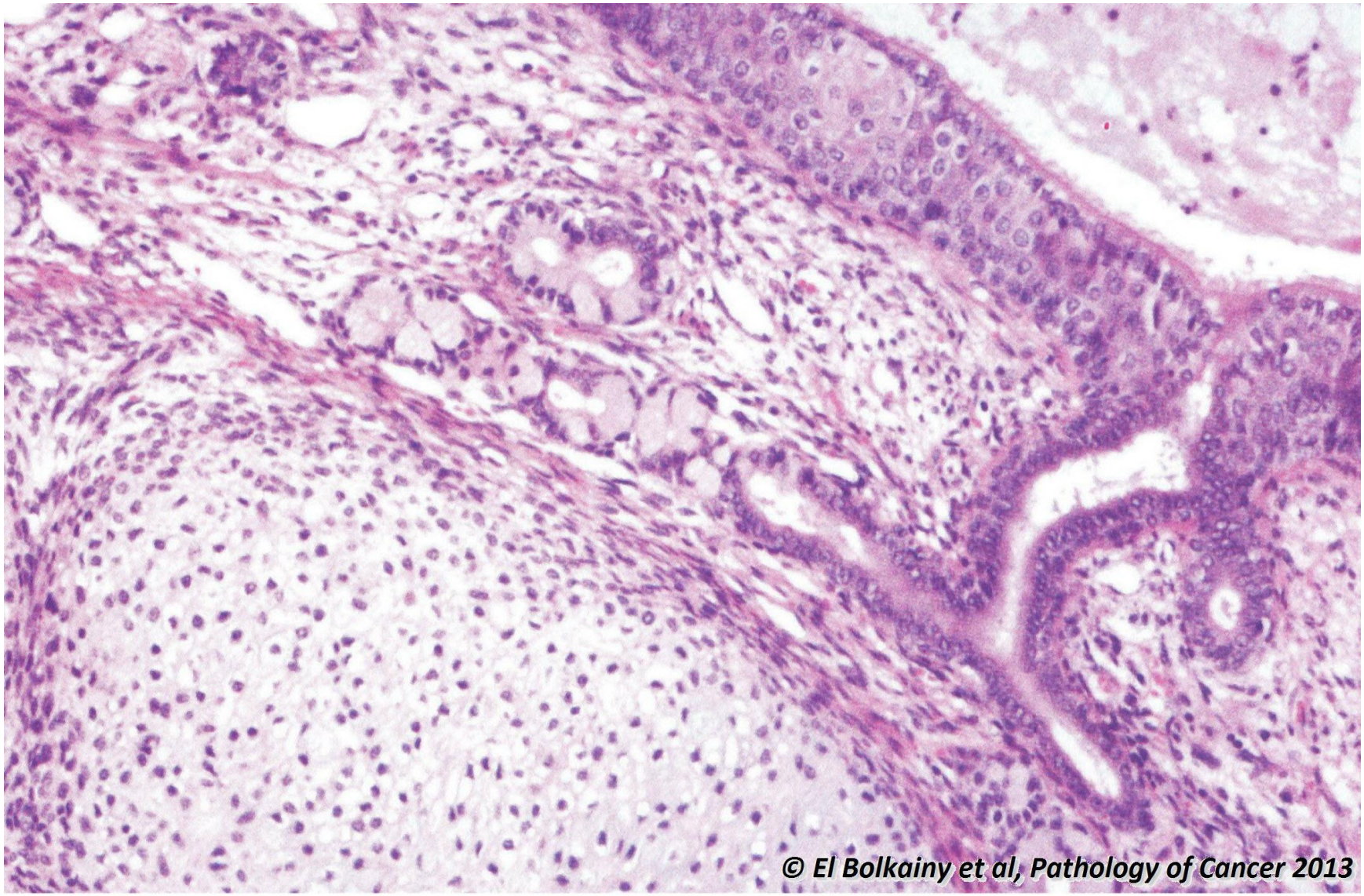
Picture 17-16 **Ovary, clear cell carcinoma, histology.** It is composed of clear, glycogen-rich cytoplasm. It is now recognized as of mullerian not mesonephric origin. Immunostains: CK7+, CK20- and EMA+ (in contrast to renal cell carcinoma of kidney which is EMA negative).

17.17 Ovary, mature cystic teratoma (dermoid cyst), gross features.



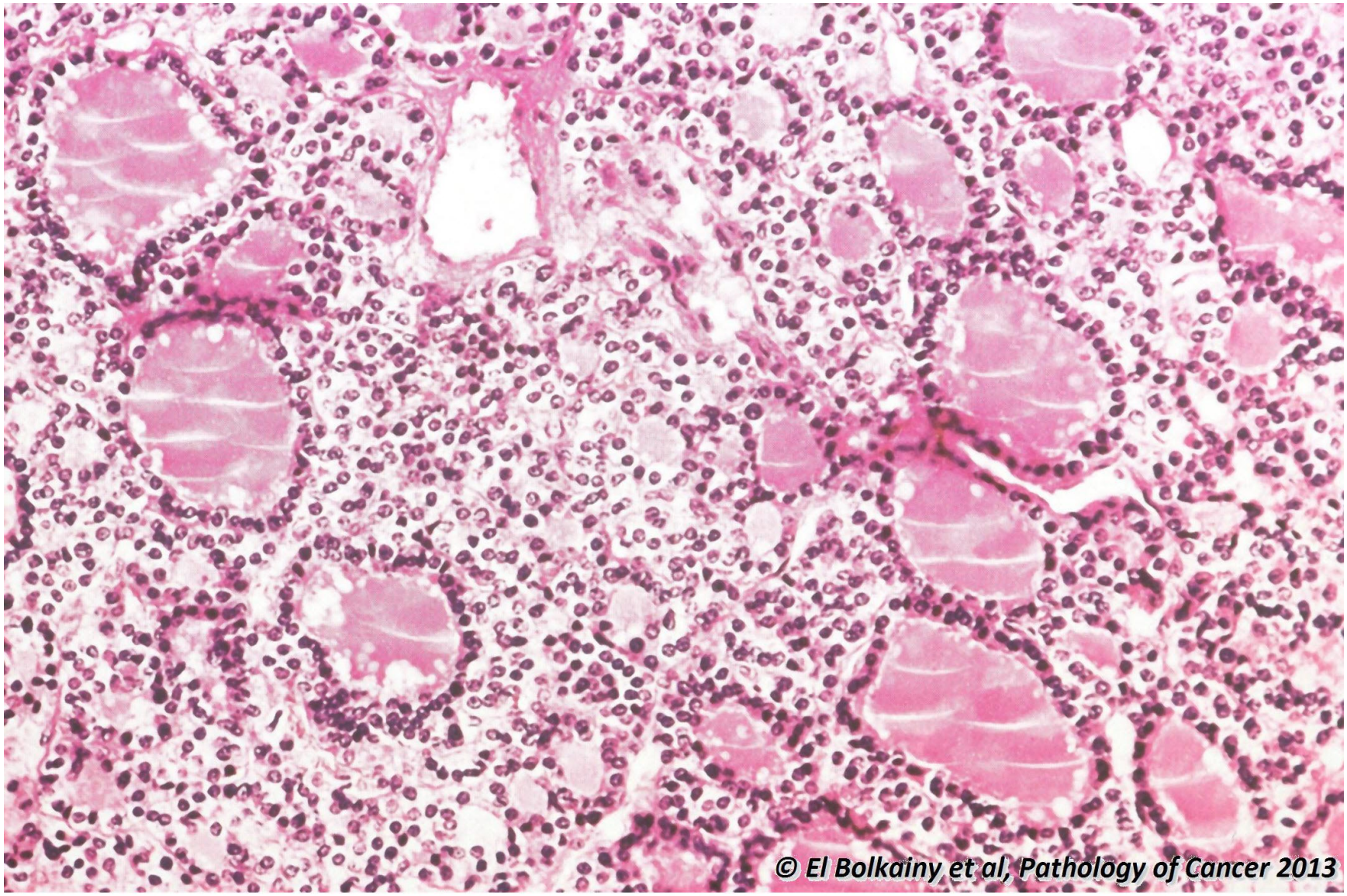
Picture 17-17 **Ovary, mature cystic teratoma (dermoid cyst), gross features. A** and **B** The cyst contains hair and a mural nodule containing teeth and bone. The lumen is filled with a greasy sebaceous material rich in degenerated keratin from the entrapped exfoliated squamous cells.

17.18 Ovary, mature cystic teratoma, histology.



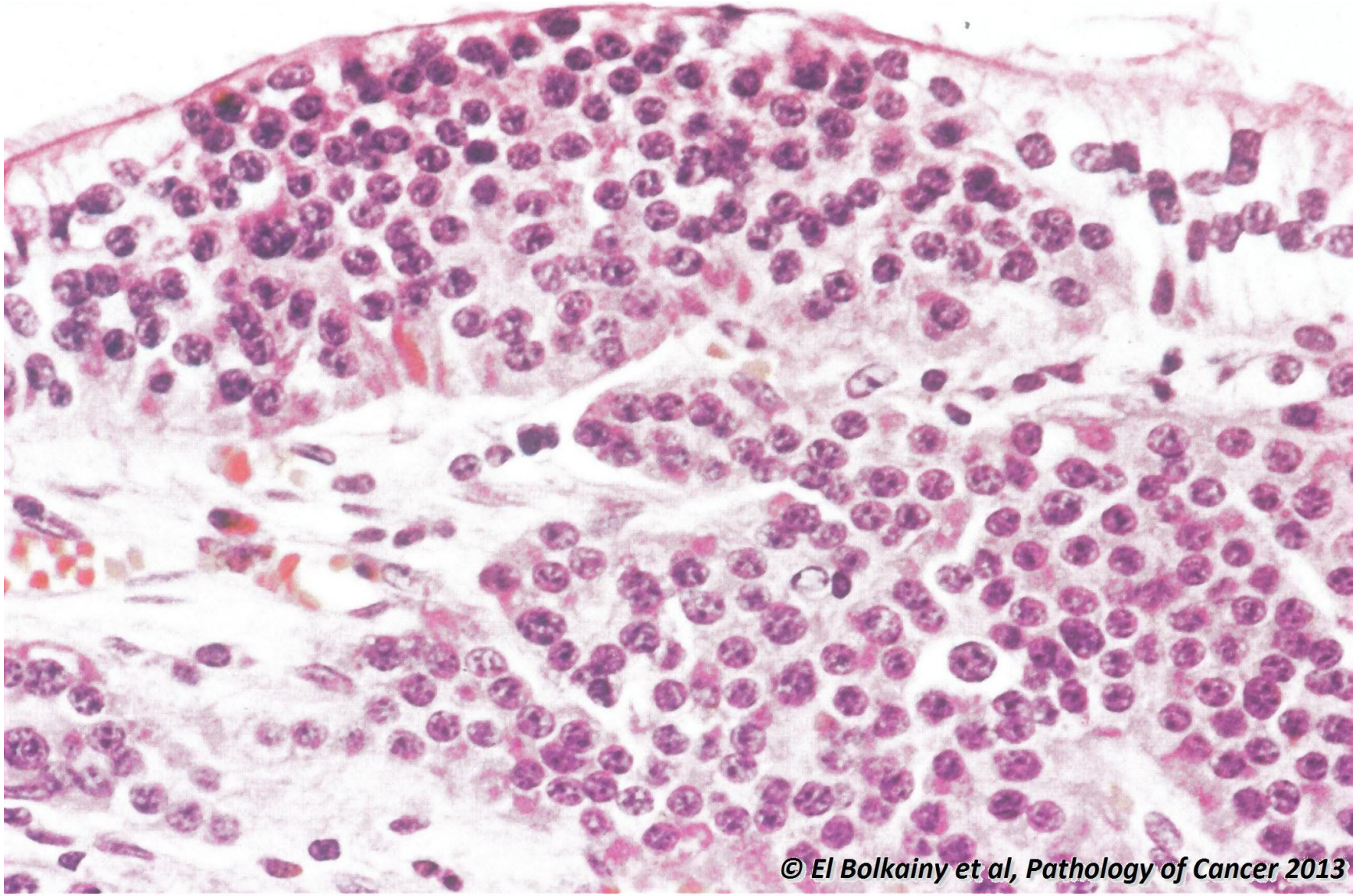
Picture 17-18 **Ovary, mature cystic teratoma, histology.** Complex structure of mature glands and hyaline cartilage. The cyst lining is commonly squamous epithelium with skin adnexal structures.

17.19 Ovary, monodermal teratoma, struma ovarii, histology.



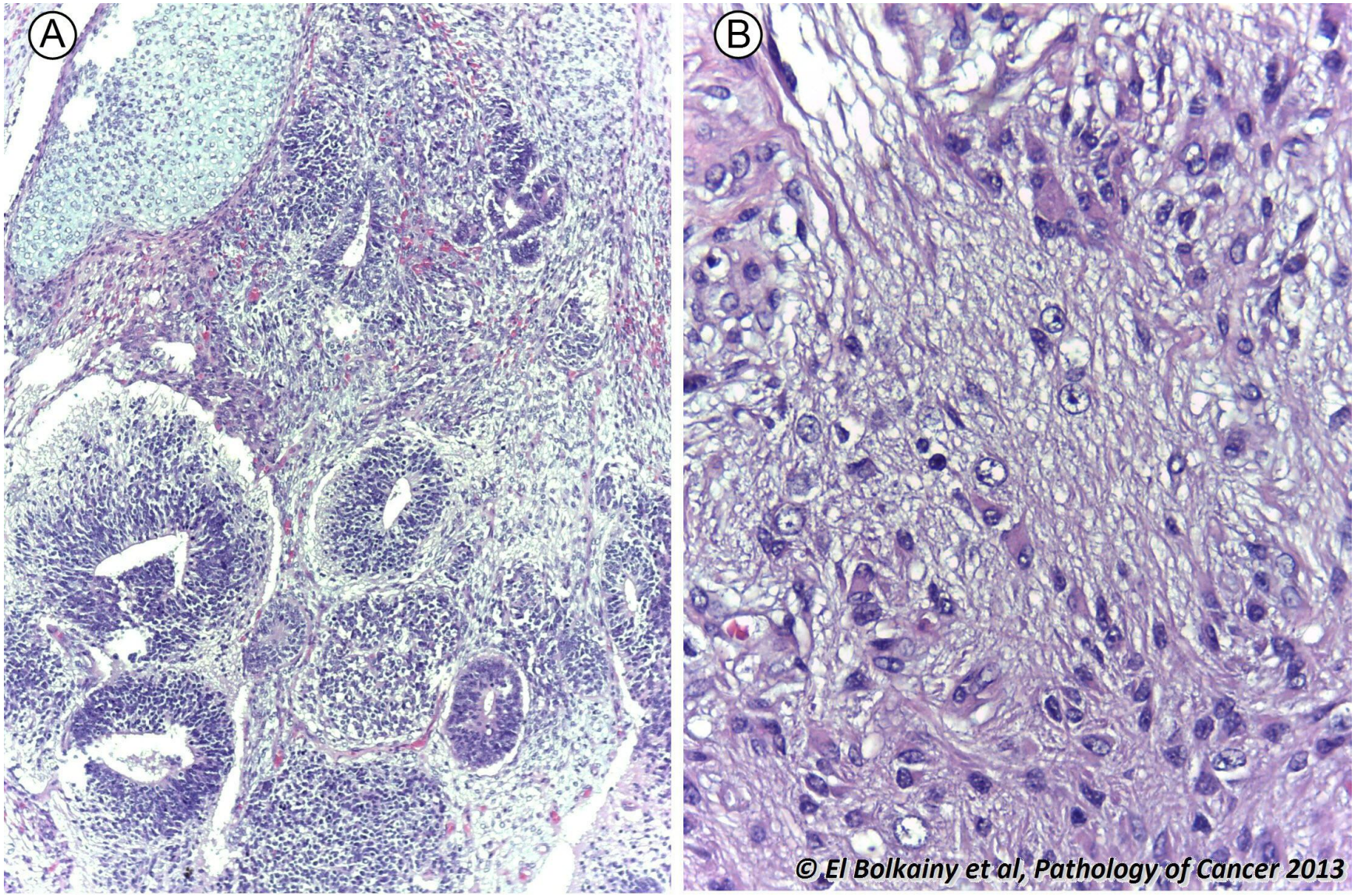
Picture 17-19 **Ovary, monodermal teratoma, struma ovarii, histology.** A monodermal teratoma is composed of tissues derived from a single germ layer. Teratomas composed of thyroid tissue is the most common monodermal teratoma, contributing only 3% of ovarian teratomas.

17.20 Ovary, monodermal teratoma, carcinoid tumor, histology.



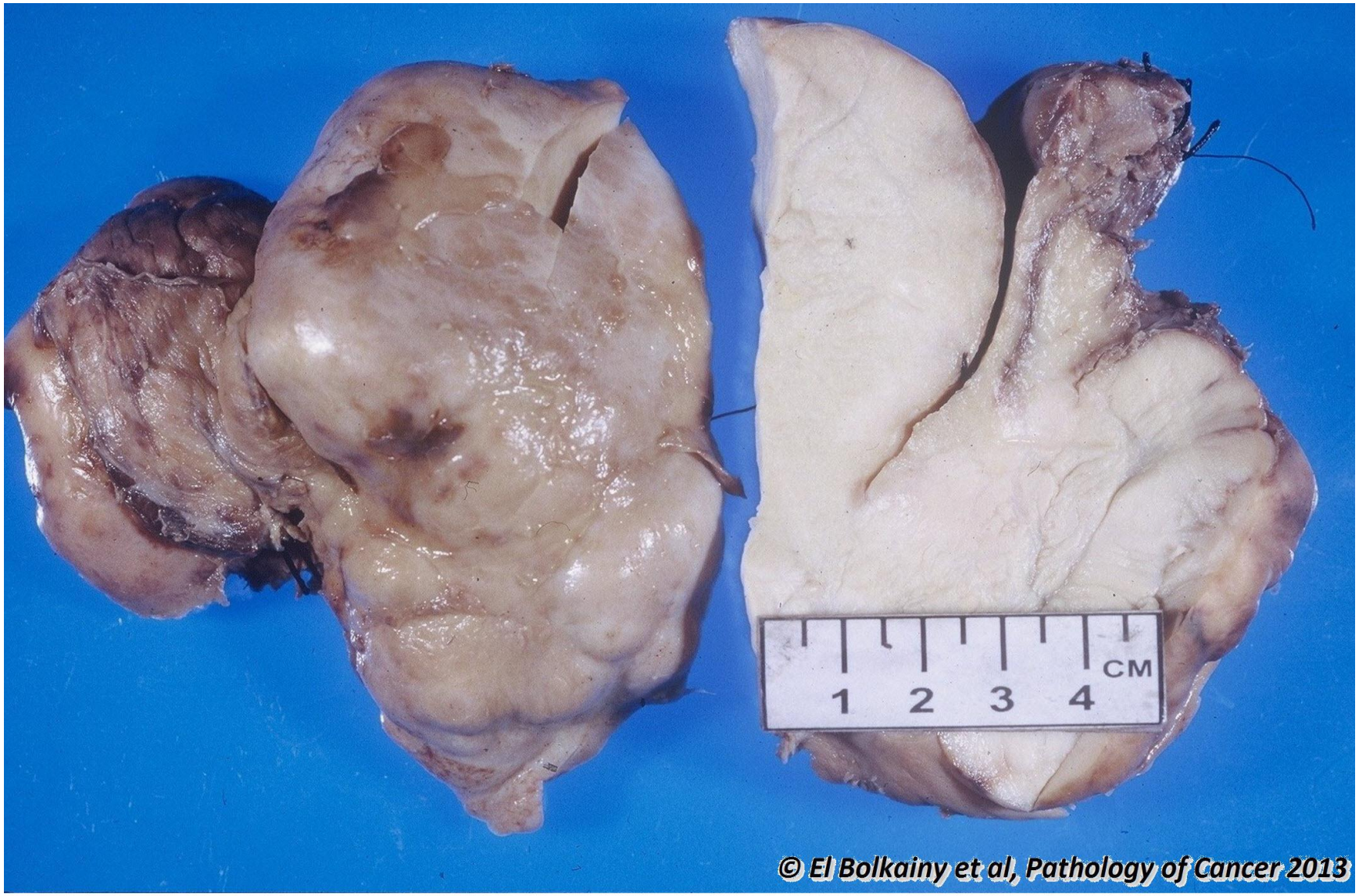
Picture 17-20 **Ovary, monodermal teratoma, carcinoid tumor, histology.** This is the second most common monodermal teratoma, contributing only 1% of all ovarian teratomas. One third of patients present with carcinoid syndrome. Histology, insular pattern of uniform cells that are immunoreactive to chromogranin.

17.21 Immature teratoma, histology. Diagnostic criteria of malignancy include:



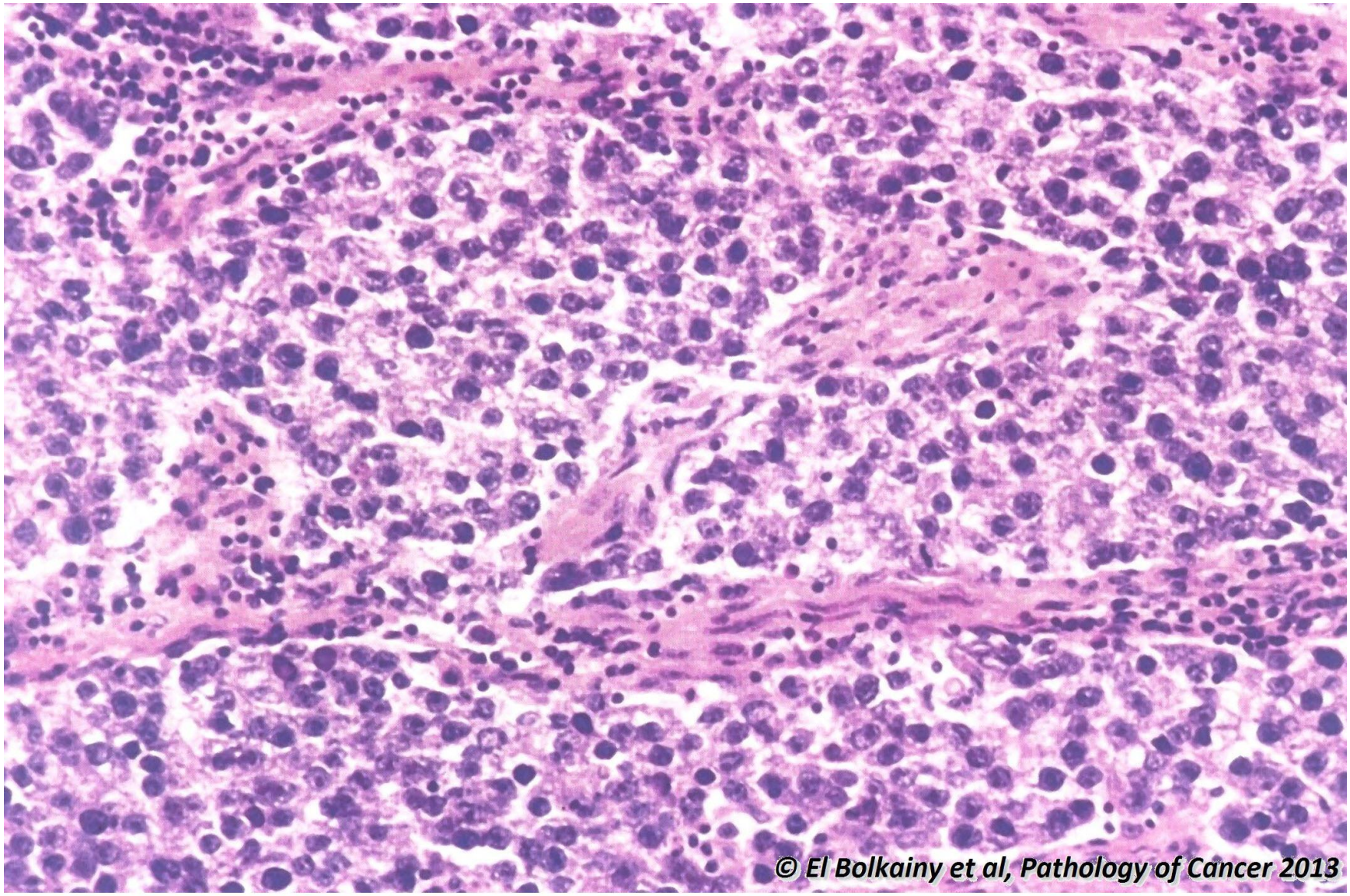
Picture 17-21 **Immature teratoma, histology. Diagnostic criteria of malignancy include: A** presence of primitive neural tube differentiation and/or **B** embryonic mesenchymal differentiation particularly rhabdomyoblasts.

17.22 Ovary, dysgerminoma, gross features.



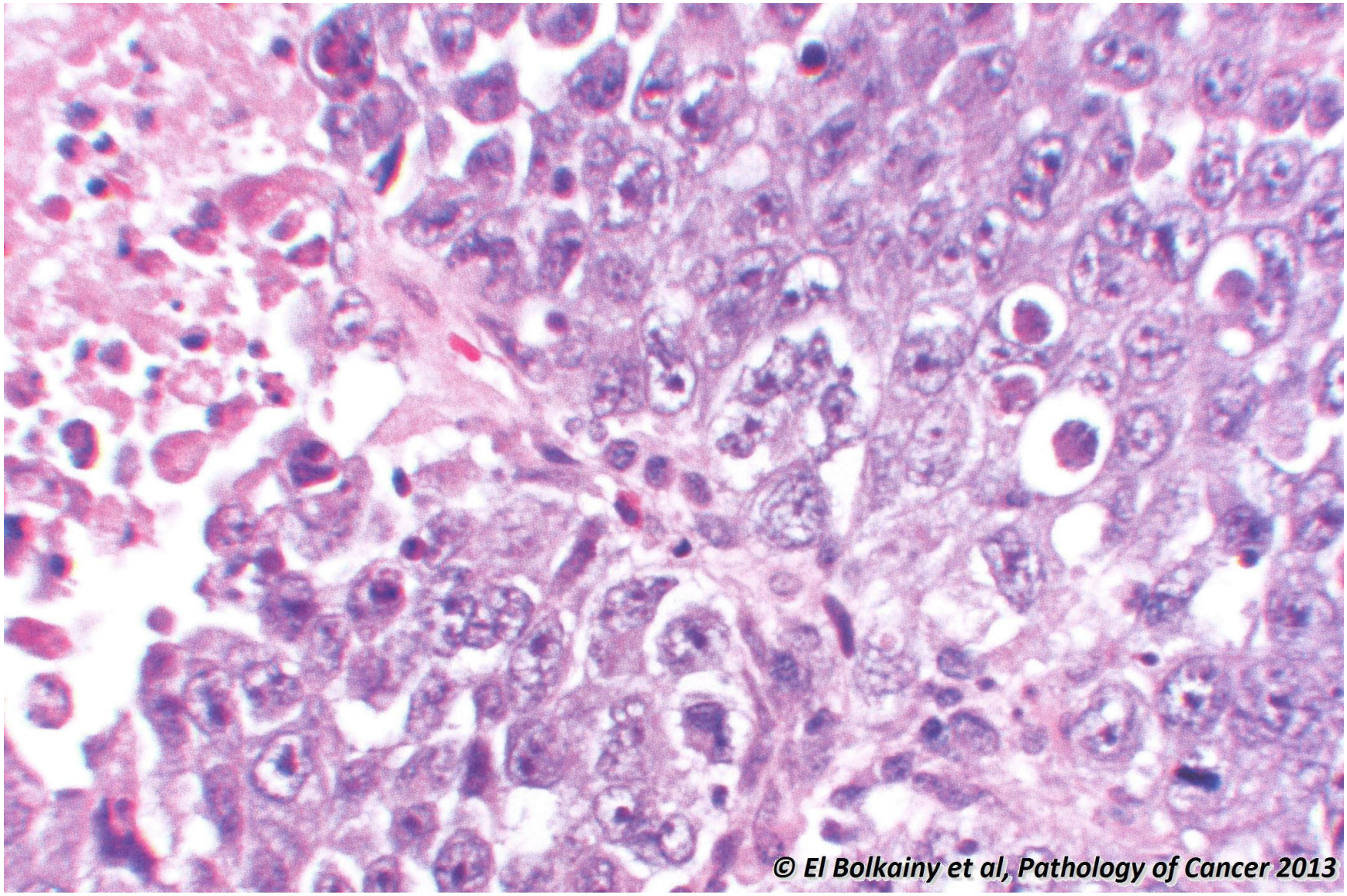
Picture 17-22 **Ovary, dysgerminoma, gross features.** The cut section of the tumor is homogeneous yellowish white (butter-like).

17.23 Ovary, dysgerminoma, histology.



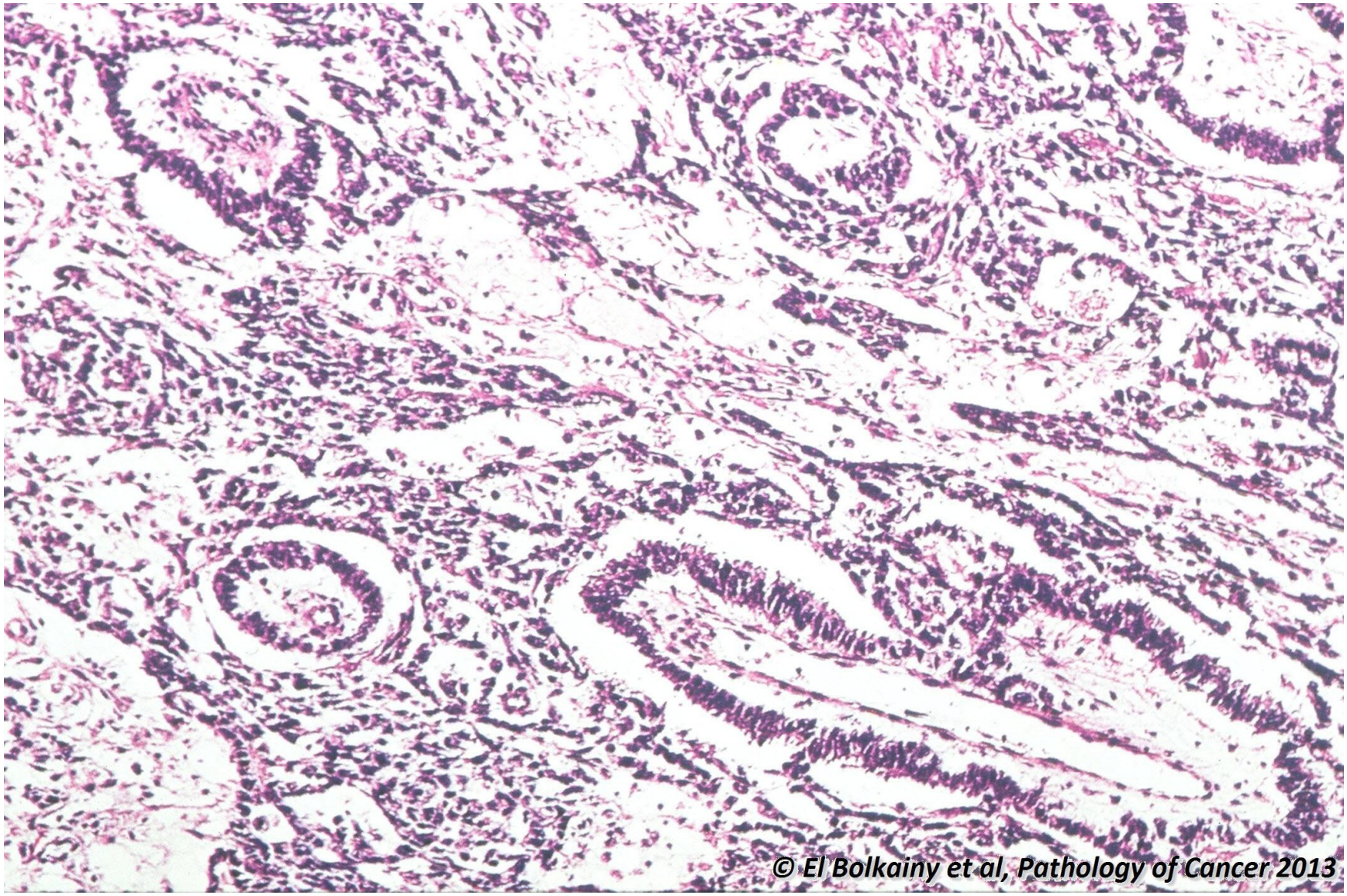
Picture 17-23 **Ovary, dysgerminoma, histology.** Sheets and nests of uniform round cells, rich in cytoplasmic glycogen, fibrous trabeculae rich in lymphocytes. Immunostains: placental alkaline phosphatase (PLAP) and c-Kit (CD117) positivity.

17.24 Ovary, embryonal carcinoma, histology.



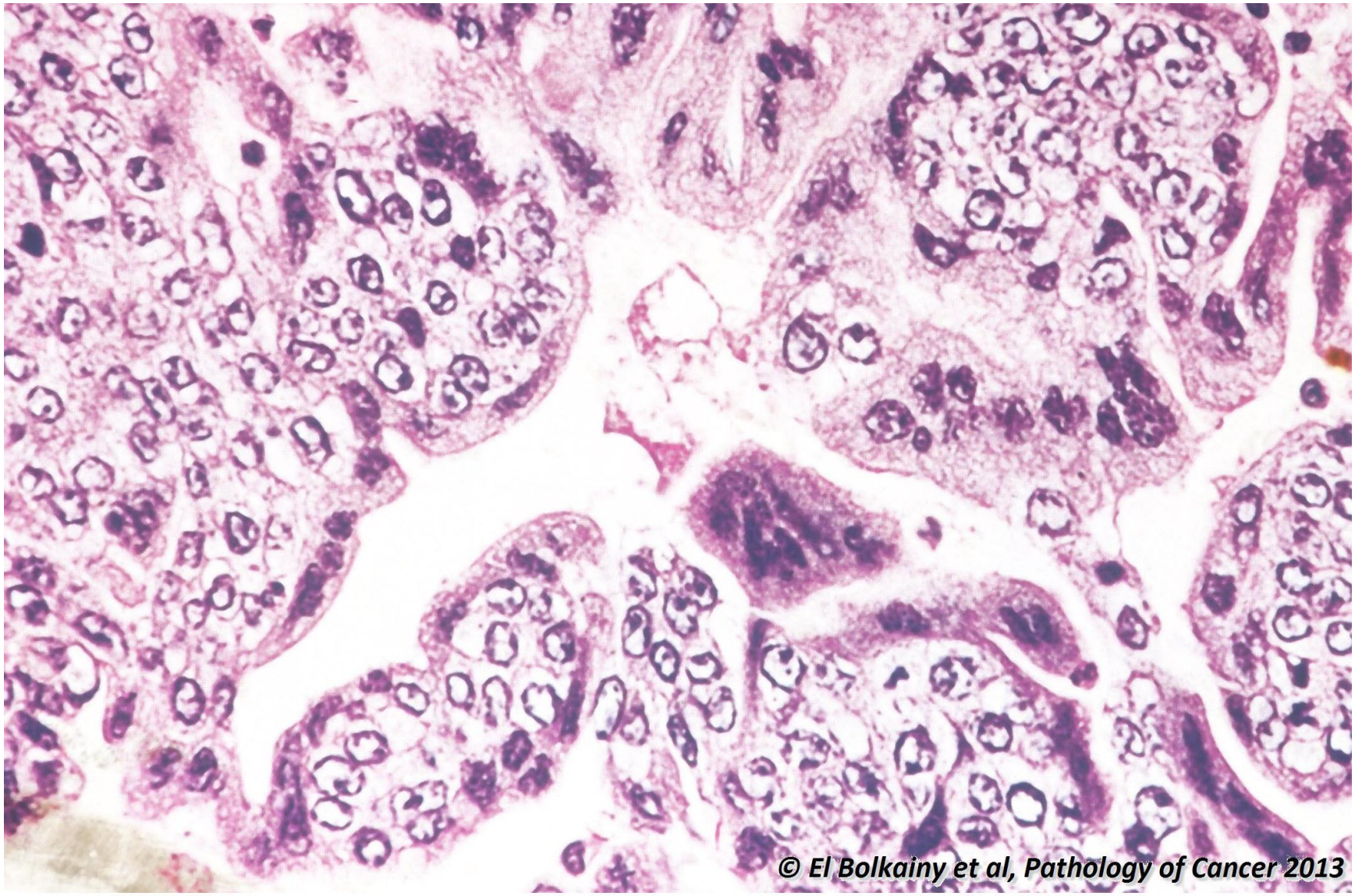
Picture 17-24 **Ovary, embryonal carcinoma, histology.** Solid sheets of undifferentiated epithelium, marked anaplasia and mitosis, pseudoglandular pattern and focal necrosis. Immunostains: PLAP+, CD30+ and CK+.

17.25 Ovary, yolk sac tumor, histology.



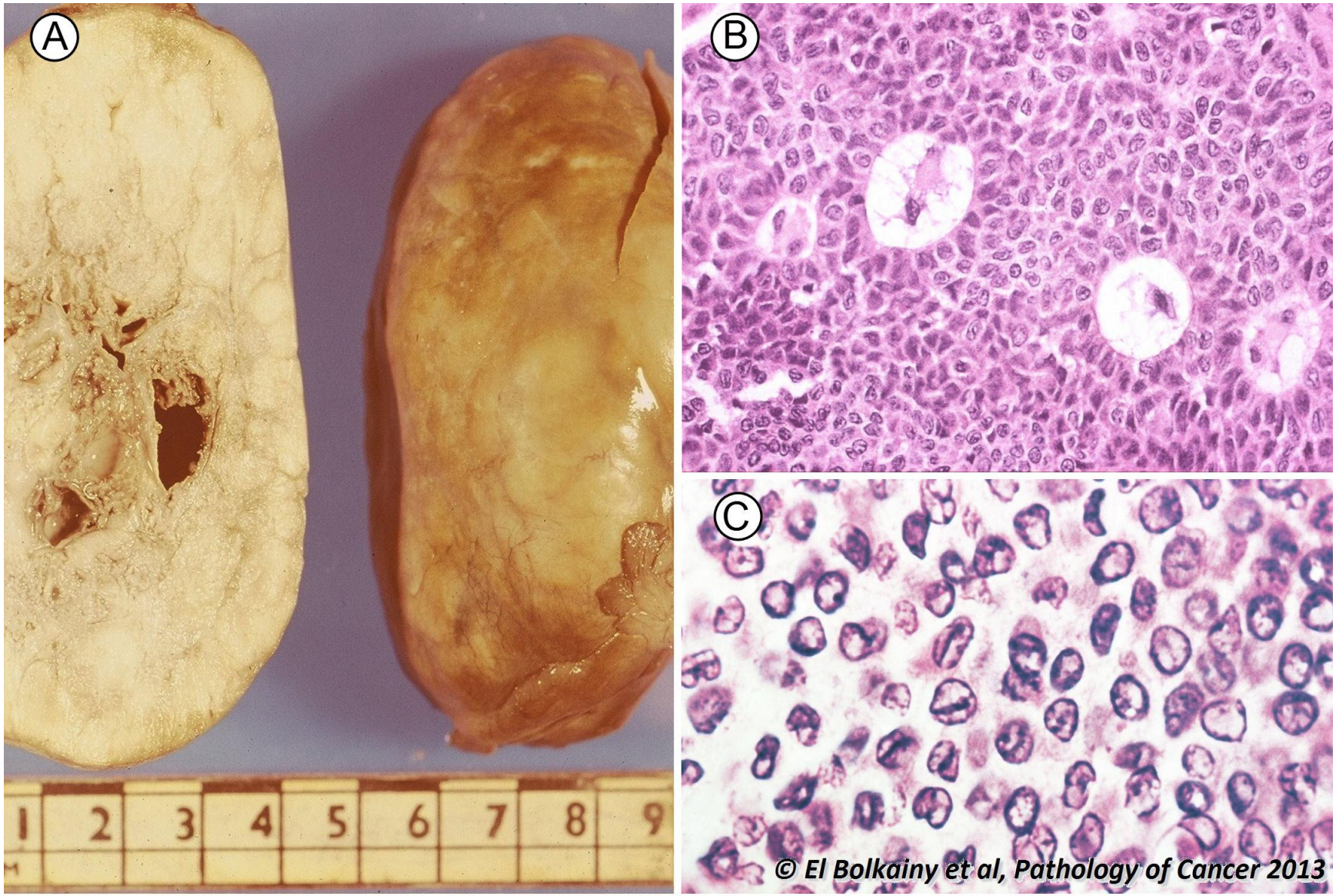
Picture 17-25 **Ovary, yolk sac tumor, histology.** Reticular, microcystic and pseudopapillary patterns. Intracystic glomeruloid structures (Schiller-Duval bodies) in 30% of cases and hyaline globules (PAS+). Immunostains: AFP+, CK+ and CD34+. Cytogenetics: isochromosome 12 (i12p).

17.26 Ovary, choriocarcinoma, histology.



Picture 17-26 **Ovary, choriocarcinoma, histology.** Biphasic structure of syncytiotrophoblasts (giant cells with eosinophilic cytoplasm) and cytotrophoblasts (round cells with vesicular nuclei, prominent nucleoli and active mitosis). Marked hemorrhage and necrosis. Immunostains: β- HCG+, CK+, PLAP+ in only 50% of cases.

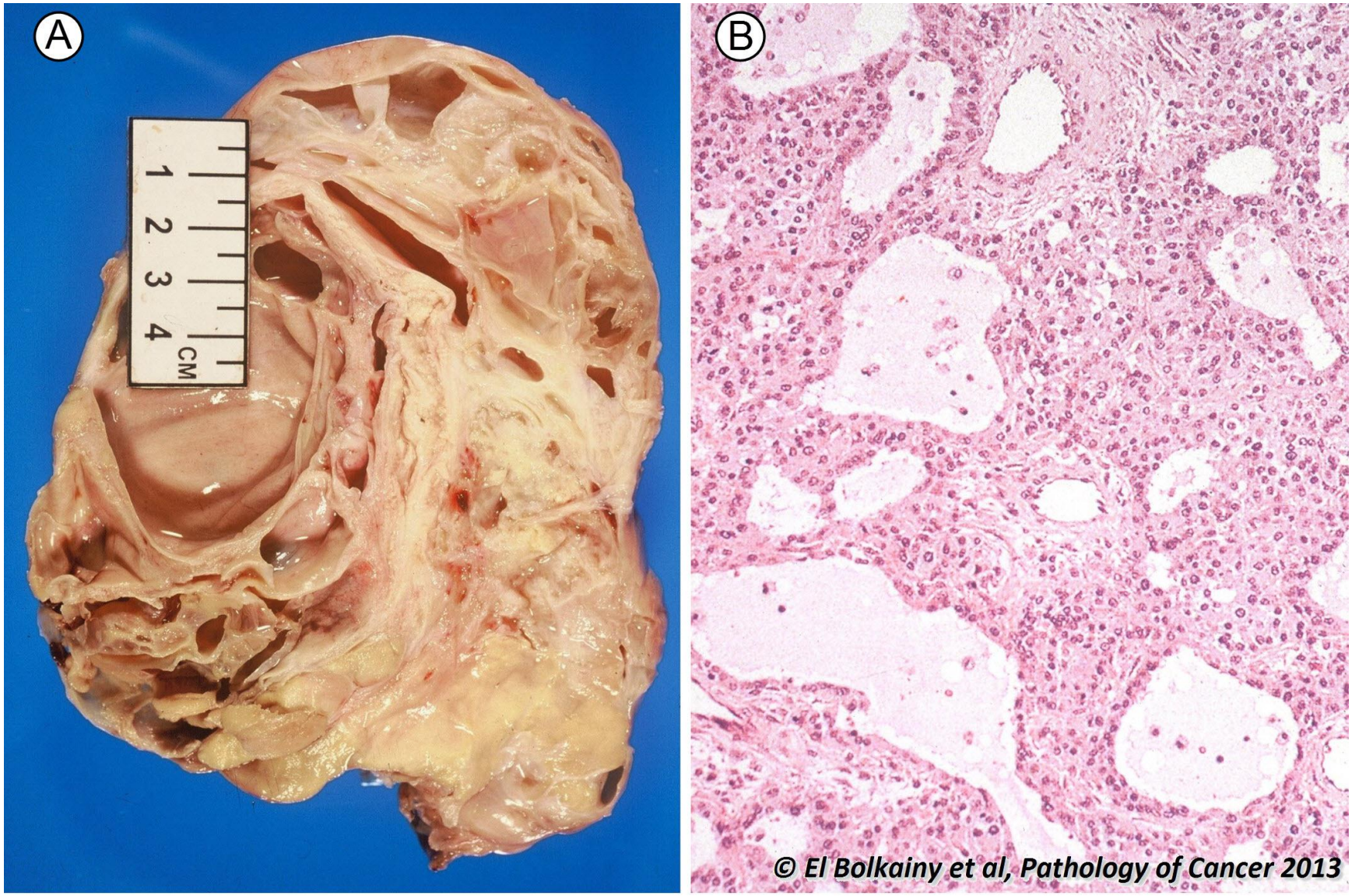
17.27 Ovary, adult granulosa cell tumor.



Picture 17-27

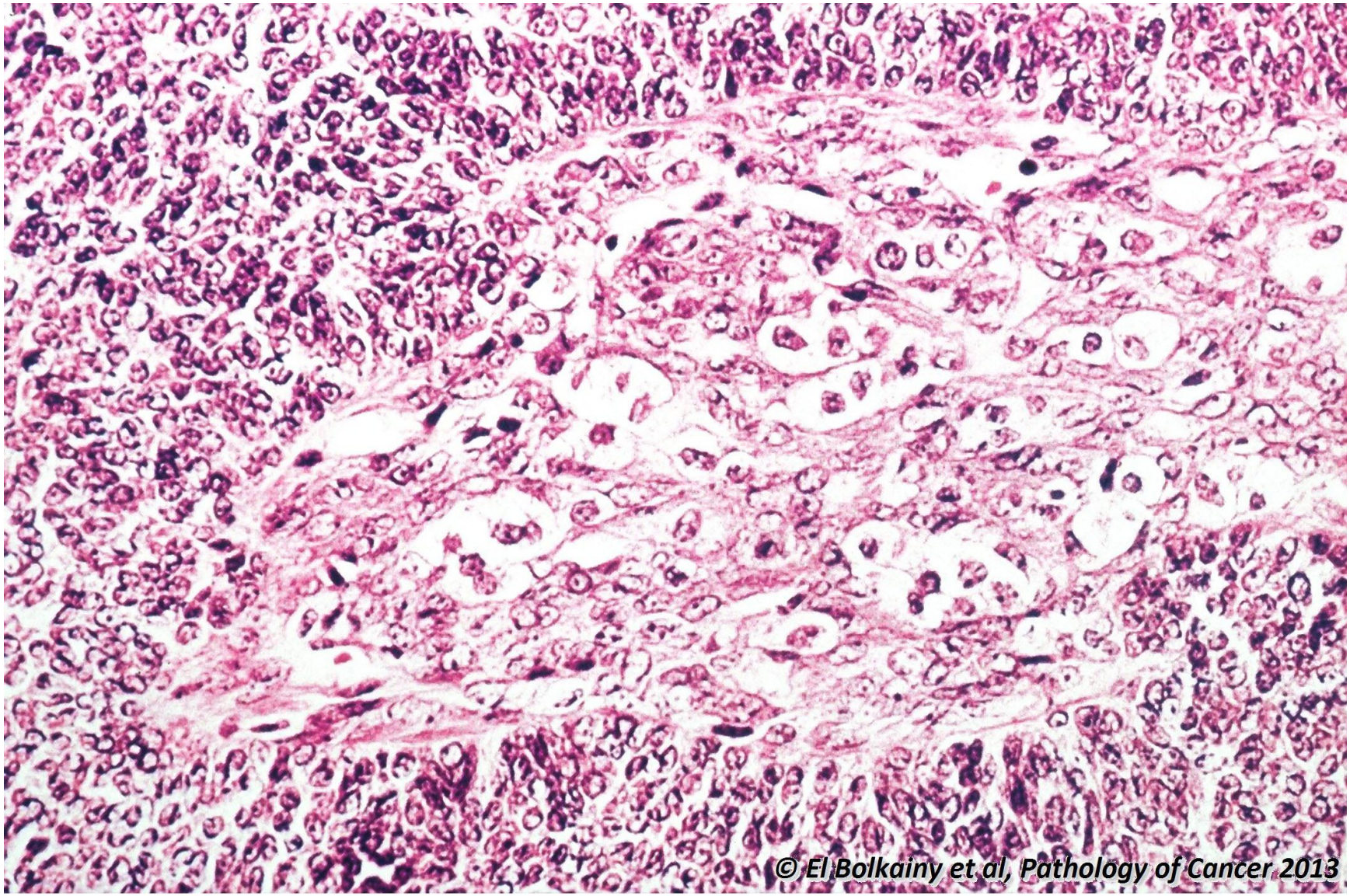
Ovary, adult granulosa cell tumor. A Gross, solid tumor, yellowish grey, focal hemorrhage and cystic change. **B** Histology, sheets of uniform round cells in a background of spindle theca cells, diagnostic folliculoid pattern (Call-Exner bodies), minimal anaplasia and mitosis (< 5/10 HPF). **C** Characteristic nuclear grooves (coffee bean nuclei). Immunostains: Inhibin and calritinin positive, but EMA and CK7 negative.

17.28 Ovary, juvenile granulosa cell tumor.



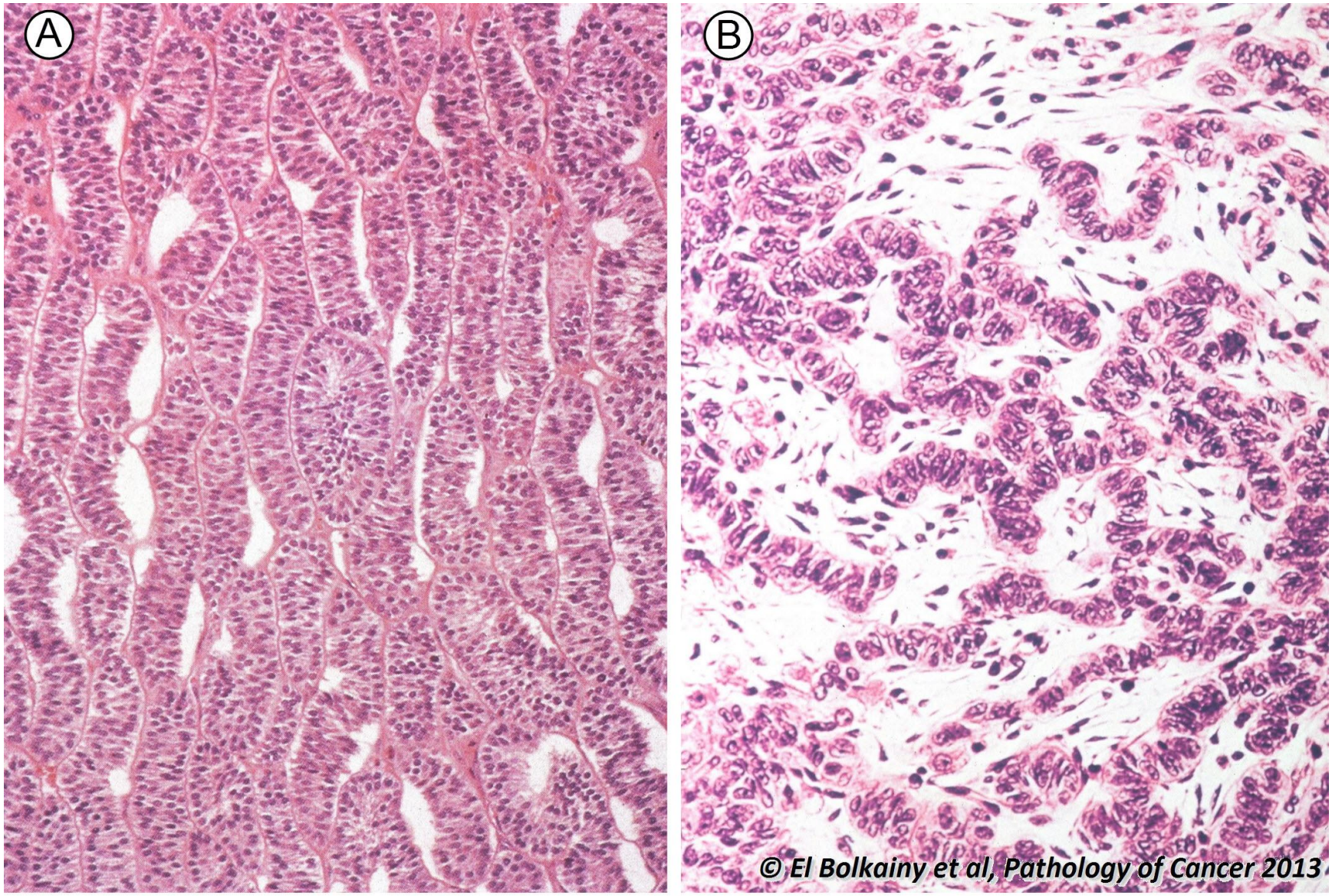
Picture 17-28 **Ovary, juvenile granulosa cell tumor. A** Gross, prominent multicystic cut section. **B** Histology, granulosa cells lining the cysts, rarely folliculoid pattern, active mitosis and myxoid stroma. Immunostains: inhibin and calretinin positive.

17.29 Ovary, granulosa-theca tumor, histology.



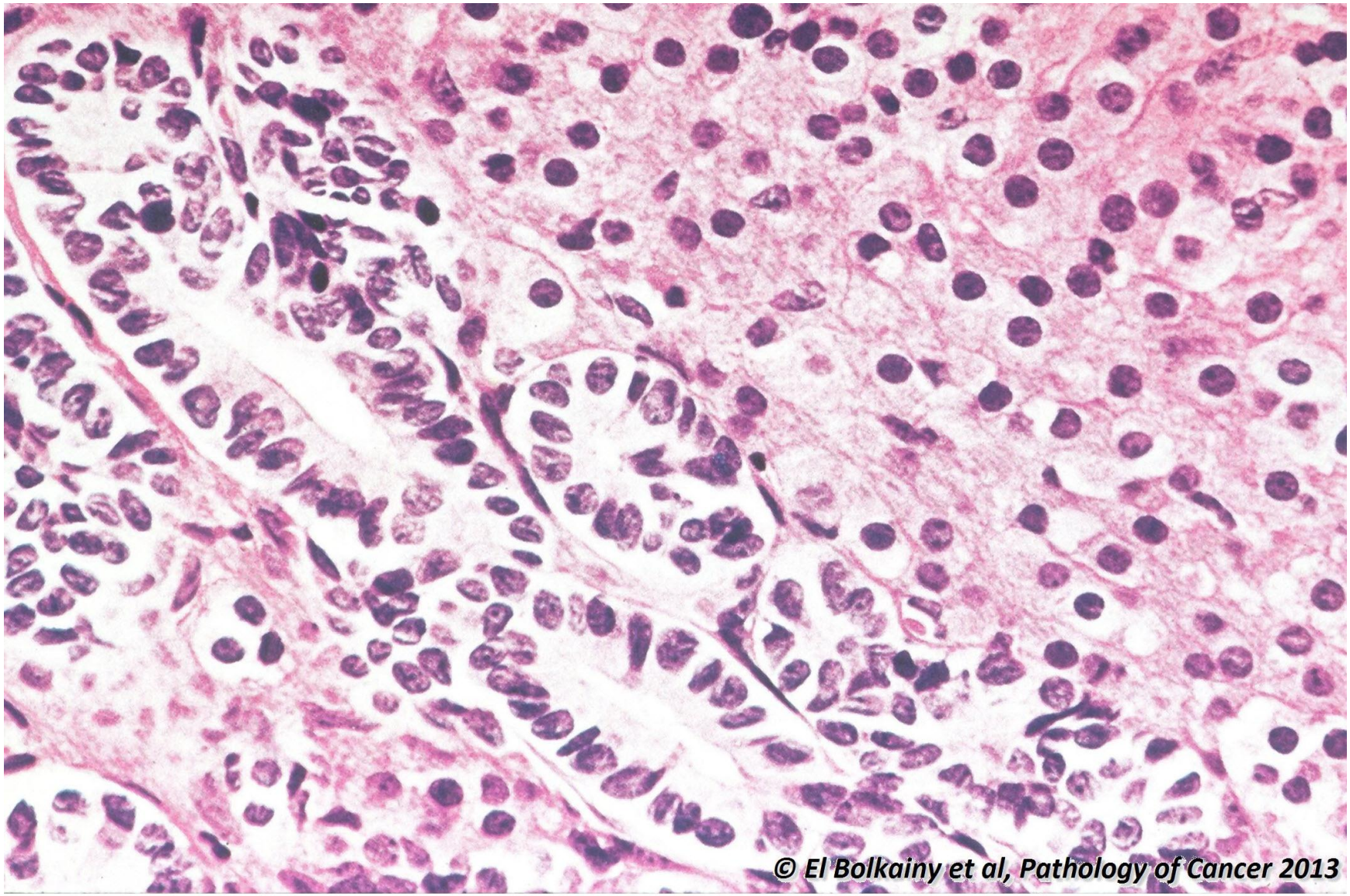
Picture 17-29 **Ovary, granulosa-theca tumor, histology.** It is composed of both round (granulosa cells) and spindle (theca cells), the latter may be luteinized (luteinized thecoma) and acquire more abundant clear or eosinophilic cytoplasm. About 85% of these tumors are benign. Immunostains: inhibin and calretinin positive, luteinized cells are CD56.

17.30 Ovary, Sertoli cell tumor, histology.



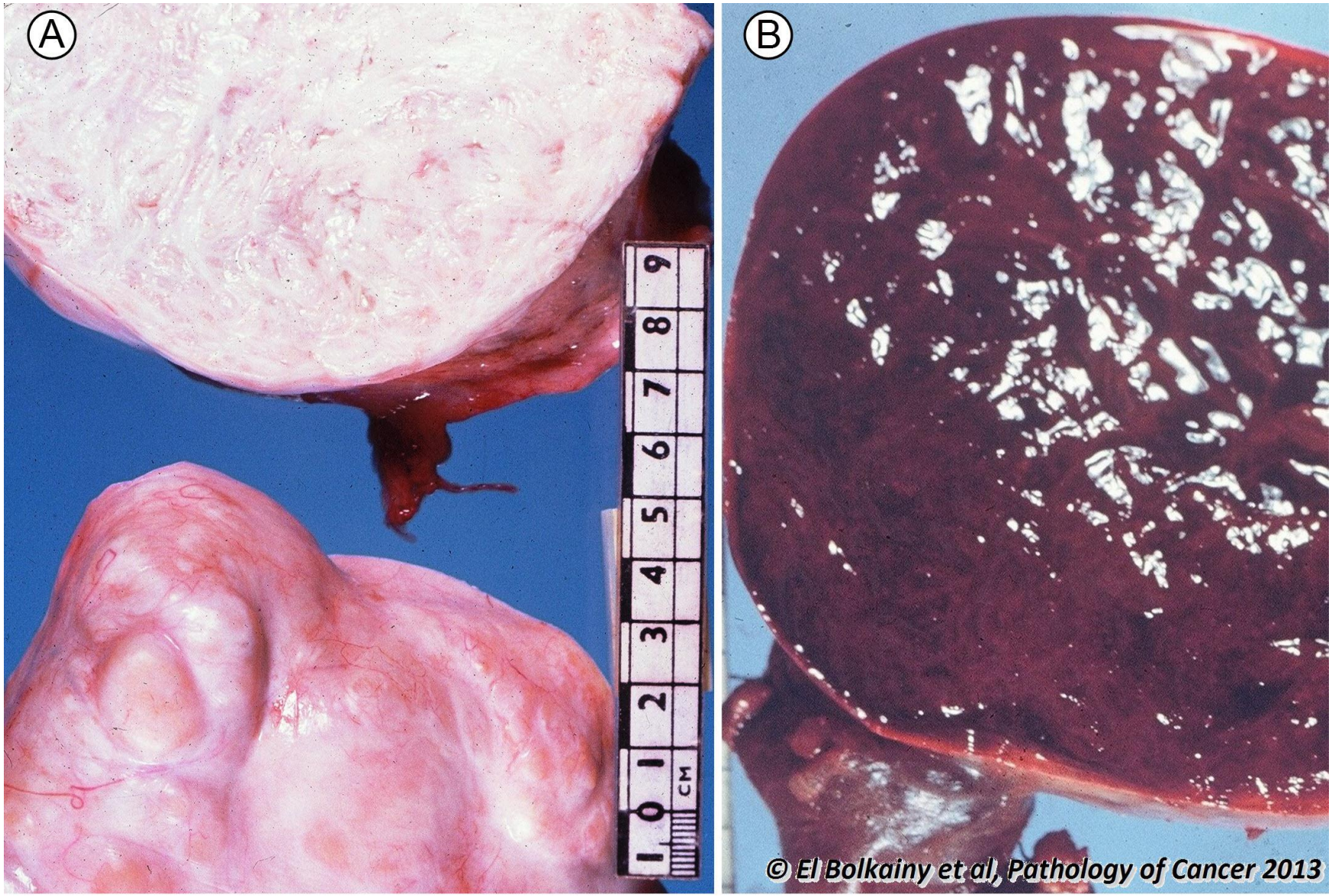
Picture 17-30 **Ovary, sertoli cell tumor, histology. A** Low power. Well-differentiated tumors show tubular pattern with central lumen. **B** High power. Trabecular pattern associated with Leydig clear cells and minimal atypia. Immunostains: inhibin, calretinin, cytokeratin, vimentin positivity.

17.31 Ovary, Sertoli-Leydig tumor, histology.



Picture 17-31 **Ovary, sertoli-leydig tumor, histology.** Well formed sertoli tubules in abundant stroma of leydig cells with abundant pale eosinophilic cytoplasm which may contain Reinke crystals in 20% of cases. The majority (80%) of these tumors are benign. Immunostains: inhibin and calretinin positive, leydig cells are CD56 positive.

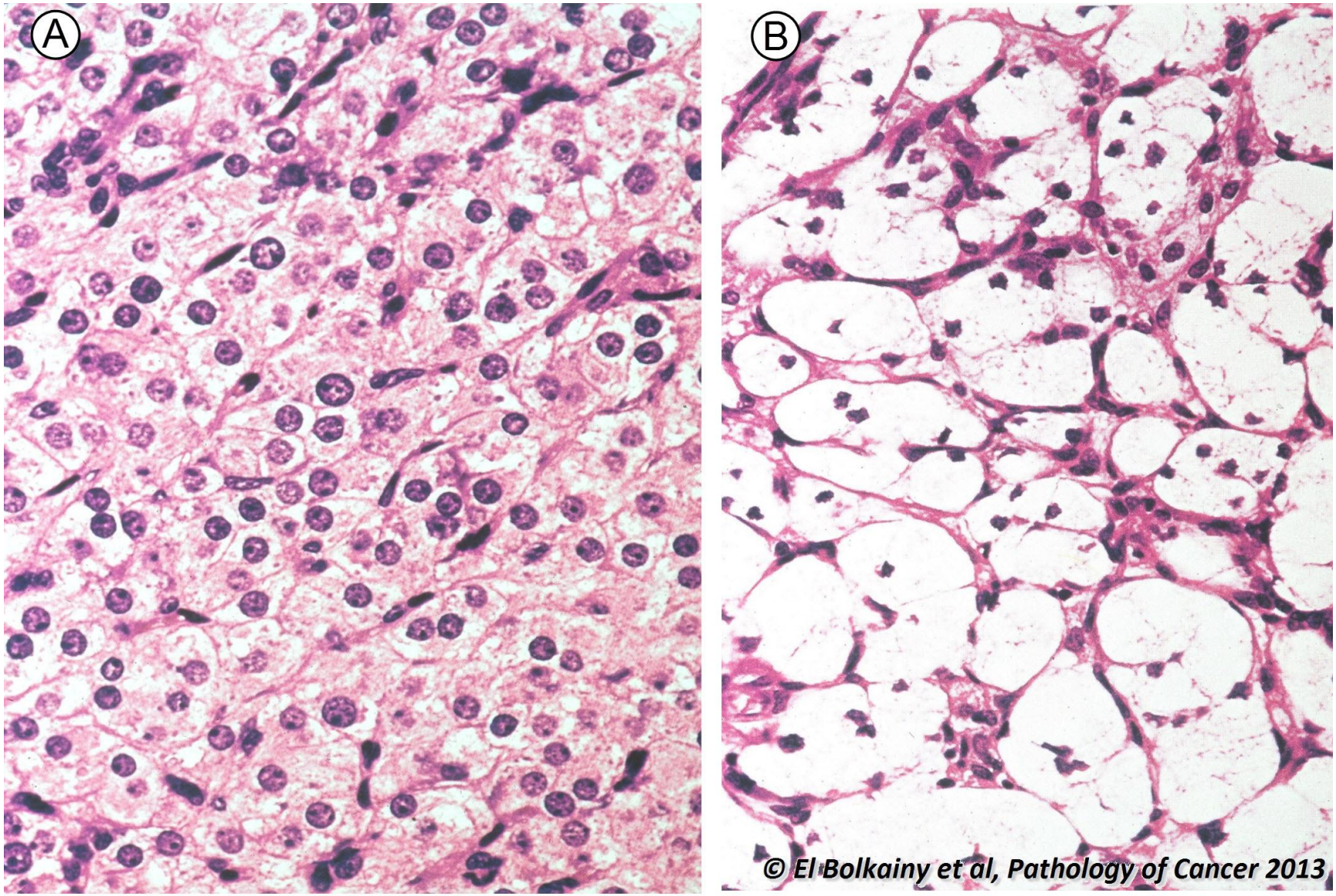
17.32 Ovary, fibroma, gross features.



Picture 17-32

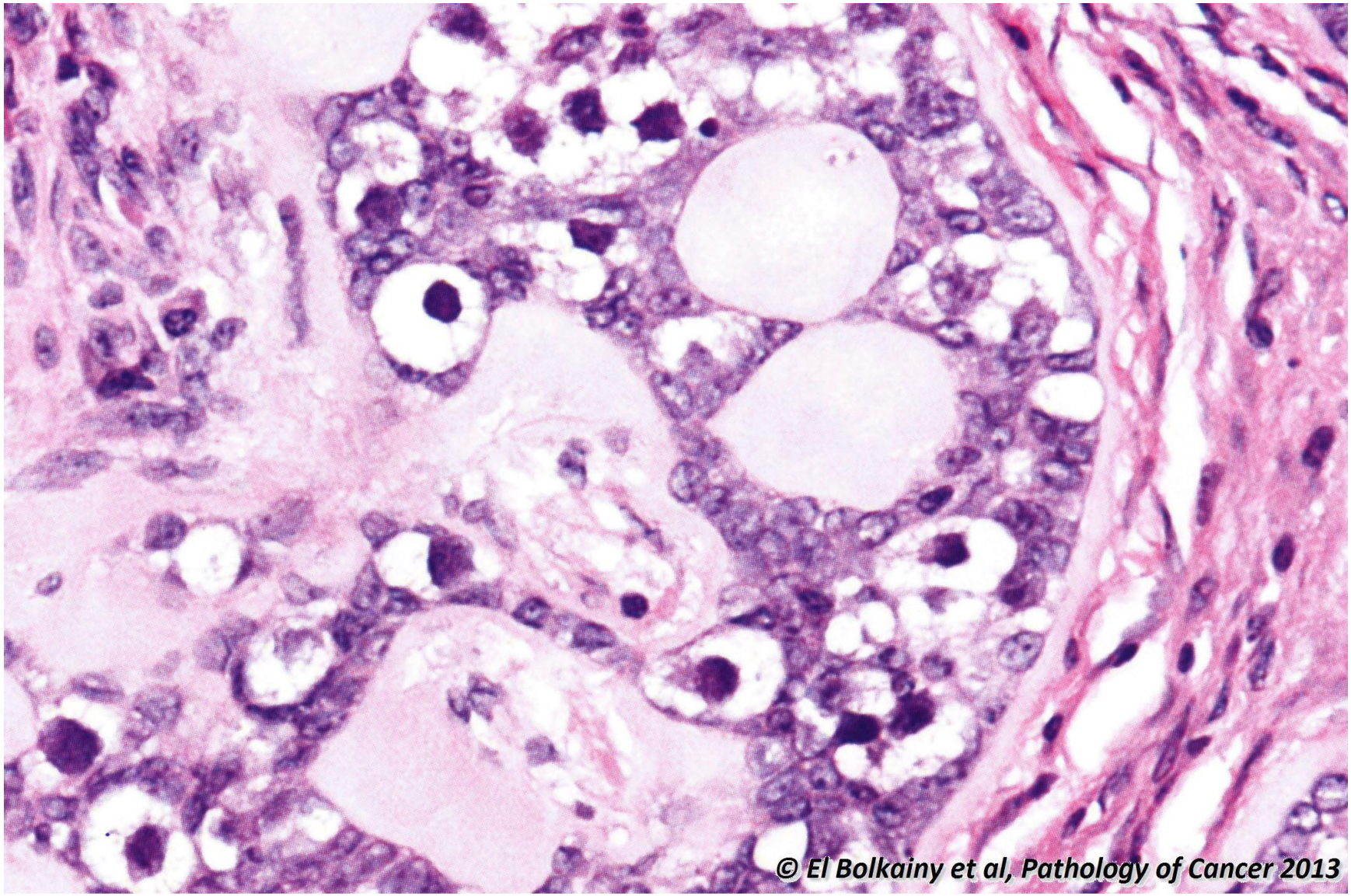
Ovary, fibroma, gross features. A A solid, firm, white and trabeculated tumor. **B** Hemorrhagic necrosis of an ovarian fibroma due to strangulation. The histology is characterized by bland fibrocytes with abundant collagen, arranged in short bundles or storiform pattern. The grand majority are benign, but cellular tumors or active mitosis (5-10/10 HPF) need careful follow-up.

17.33 Ovary, steroid or lipid-cell tumor, histology.



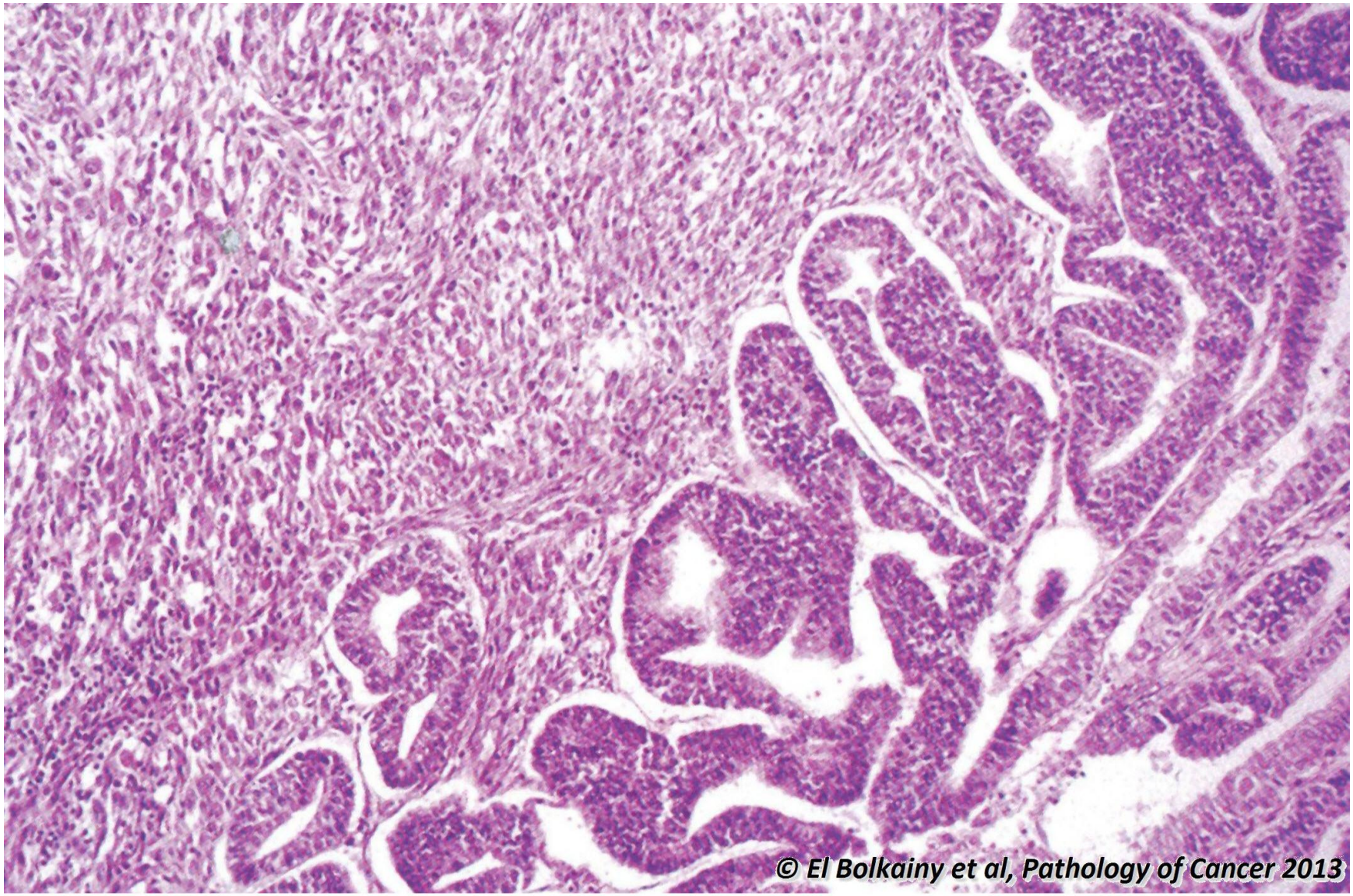
Picture 17-33 **Ovary, steroid or lipid-cell tumor, histology.** This exceedingly rare tumor (0.1%) is composed of **A** eosinophilic or **B** clear cells, positive for fat stains and commonly located at ovarian hilus. The majority (75%) are benign and mostly associated with virilization.

17.34 Ovary, gonadoblastoma, histology.



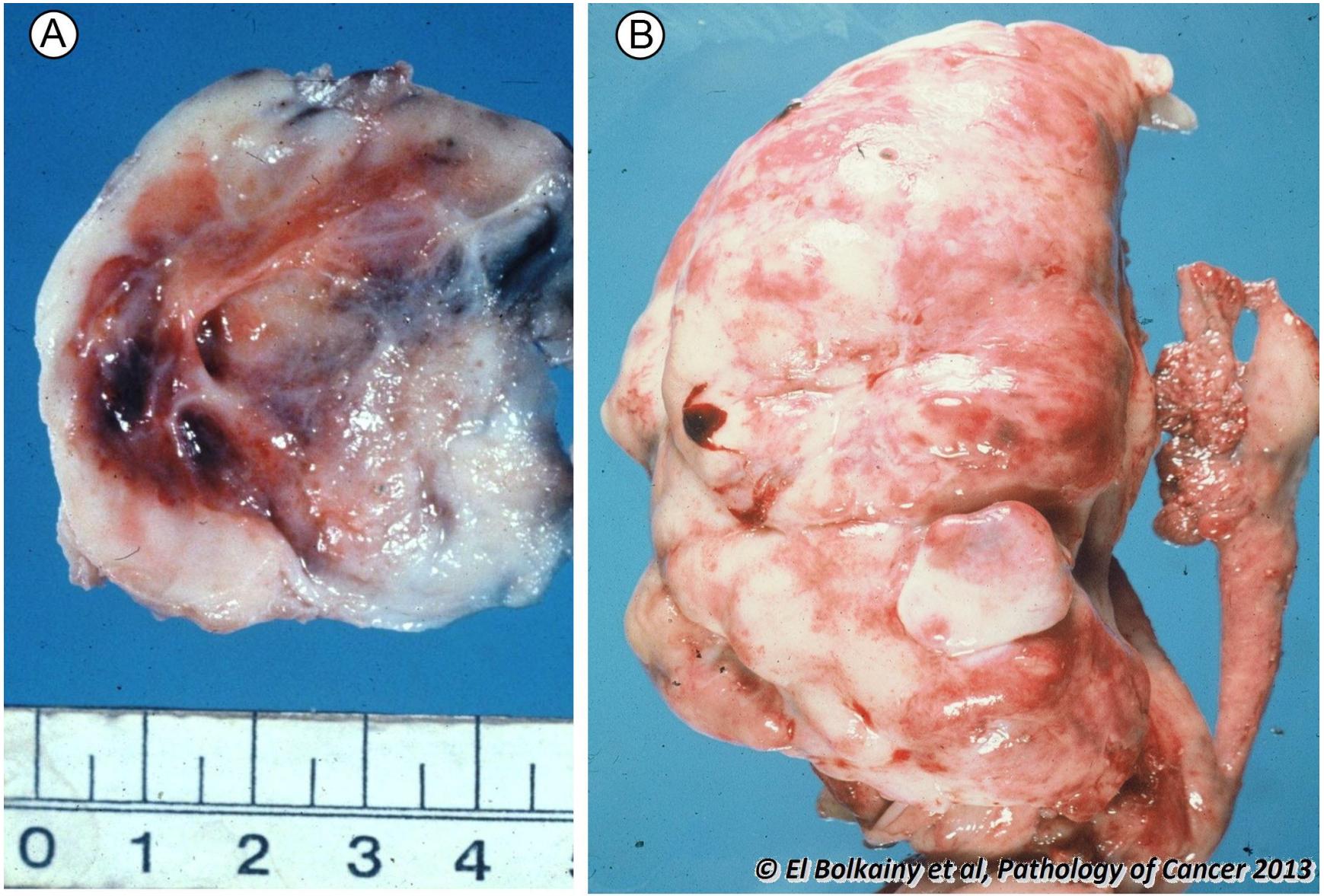
Picture 17-34 **Ovary, gonadoblastoma, histology.** A mixed germ cell /sex cord tumor, showing large cells with clear cytoplasm, smaller sex cord cells and eosinophilic basement membrane material. Immunostains: PLAP and inhibin positive.

17.35 Ovary, mllerian carcinosarcoma, histology.



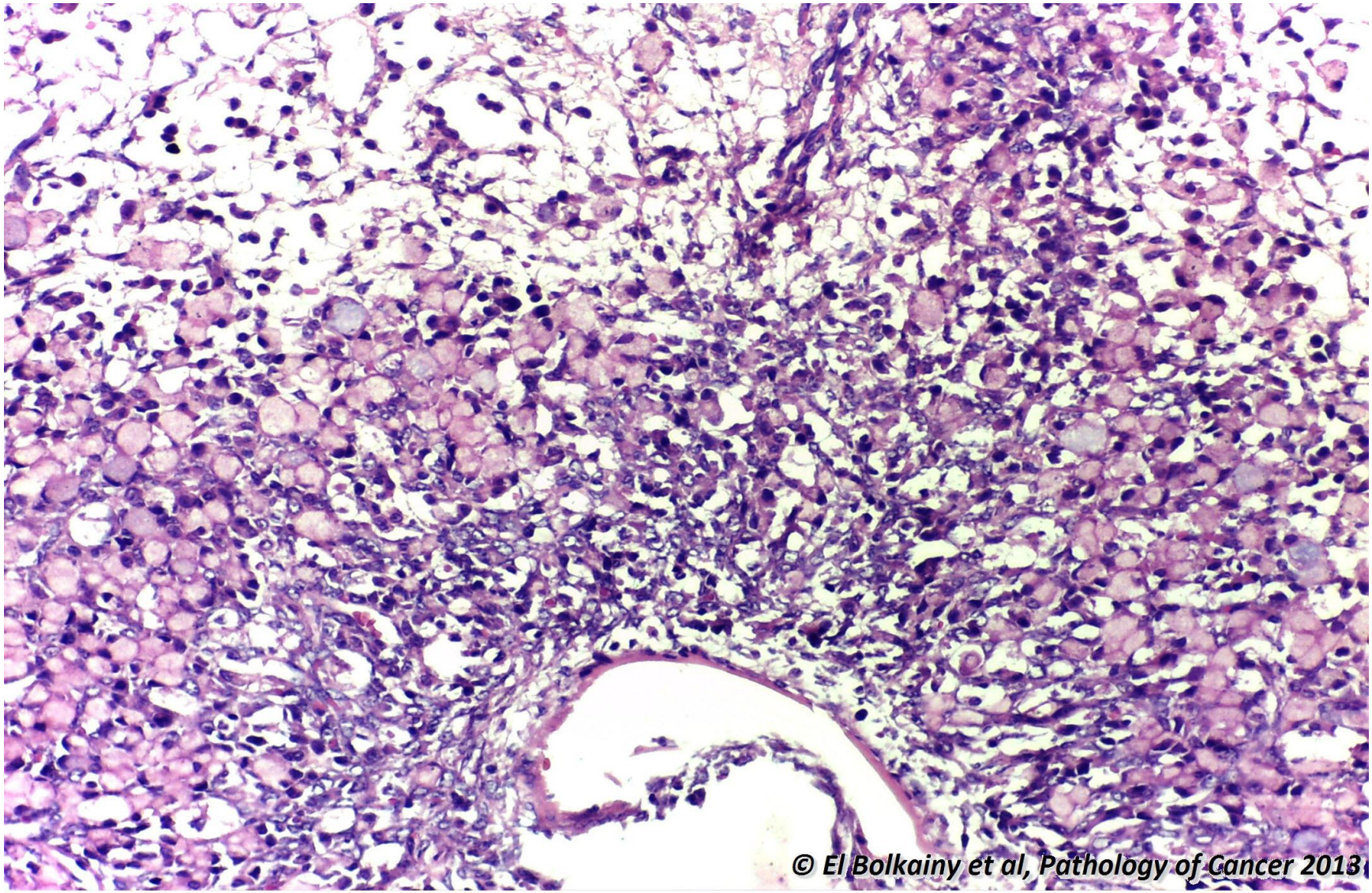
Picture 17-35 **Ovary, mullerian carcinosarcoma, histology.** This highly malignant tumor may affect the ovary in elderly patients. It is composed of both malignant epithelial and sarcomatous components. The latter may be native to the location (fibrosarcoma) or foreign (heterologus) such as chondrosarcoma or rhabdomyosarcoma.

17.36 Ovary, primary non-Hodgkin lymphoma, gross features.



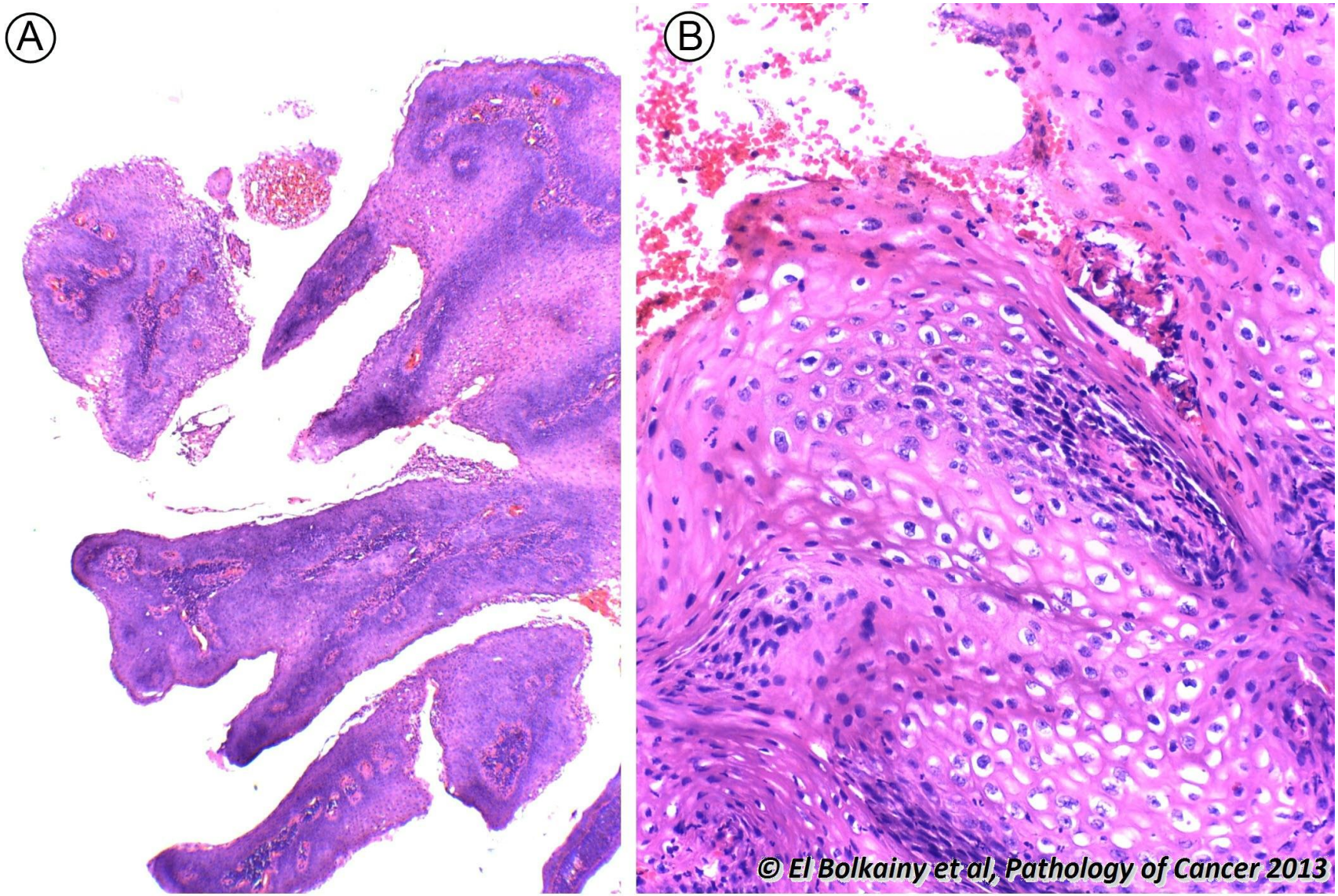
Picture 17-36 **Ovary, primary non-Hodgkin lymphoma, gross features. A** and **B** The cut section is soft and white (fish-meat appearance). In children, the histology is usually Burkitt or lymphoblastic lymphoma, but in adults it is diffuse large B-cell lymphoma.

17.37 Ovary, Krukenberg's tumor, histology.



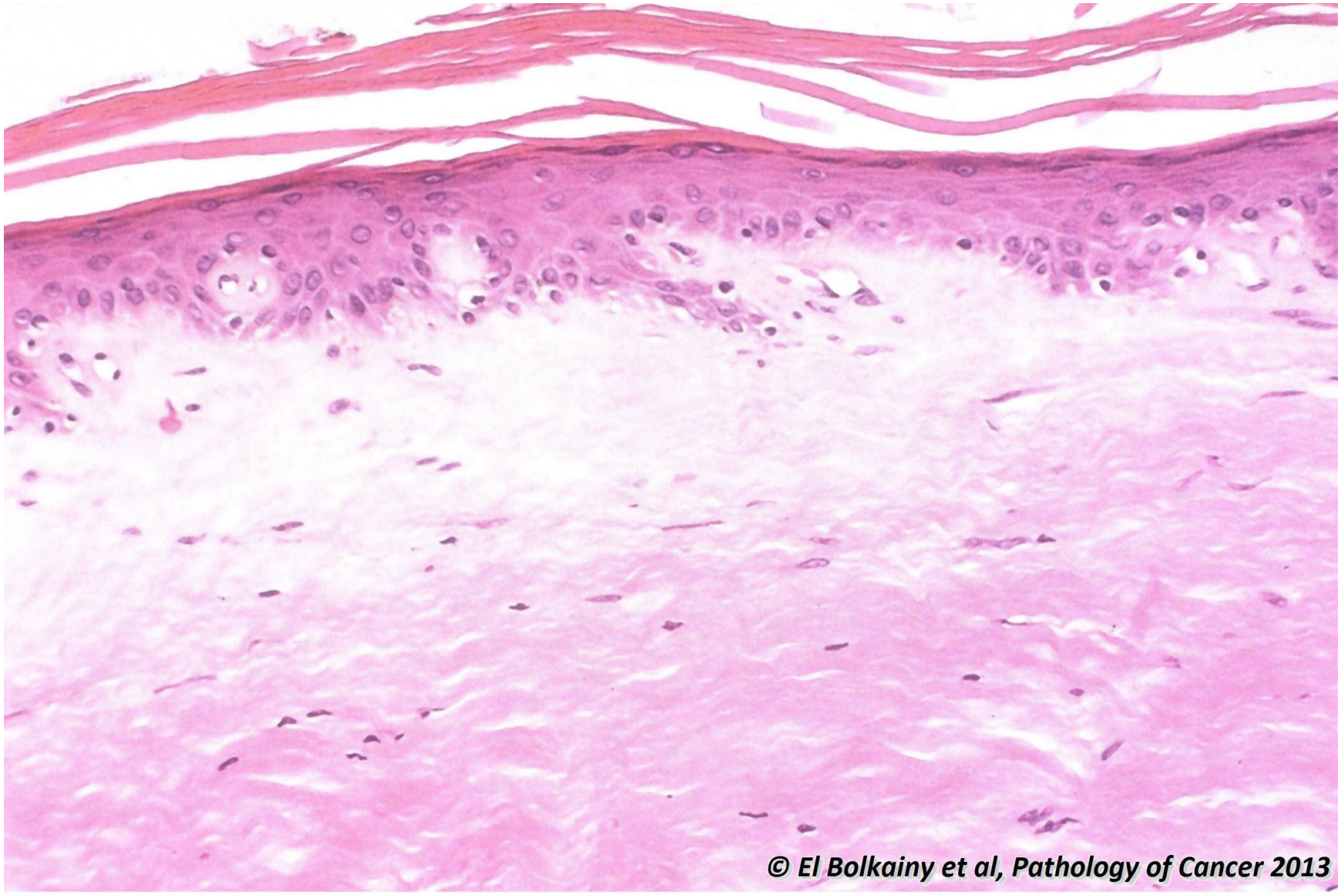
Picture 17-37 **Ovary, Krukenberg tumor, histology.** Scattered signet-ring cells in ovarian stroma from colonic carcinoma. Most common sources are the stomach, colon and breast. About one half of Krukenberg tumors are bilateral. Immunostains: metastases from colon are CD20+, CD7-, CEA+ and CDX2+, whereas, primary mucinous carcinoma of ovary are CD7+, CDX2- and MUC5AC+.

17.38 Vulva, condyloma acuminatum, histology.



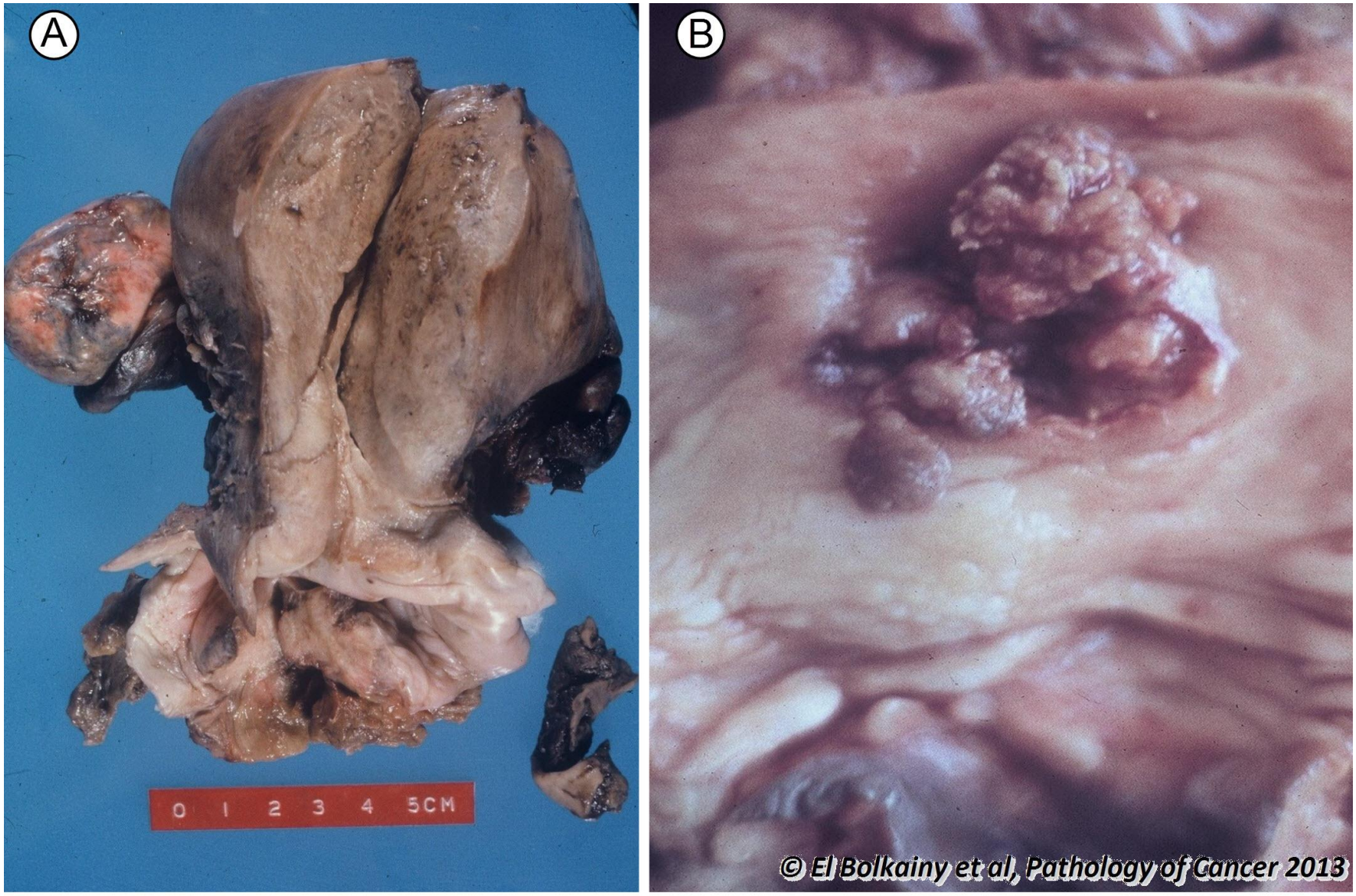
Picture 17-38 **Vulva, condyloma accuminatum, histology. A** Low power, a papillary branching hyperplastic squamous epithelium. **B** High power, perinuclear clear areas (koilocytosis) is characteristic of human papillomavirus (HPV) infection.

17.39 Vulva, lichen sclerosis et atrophicus, histology.



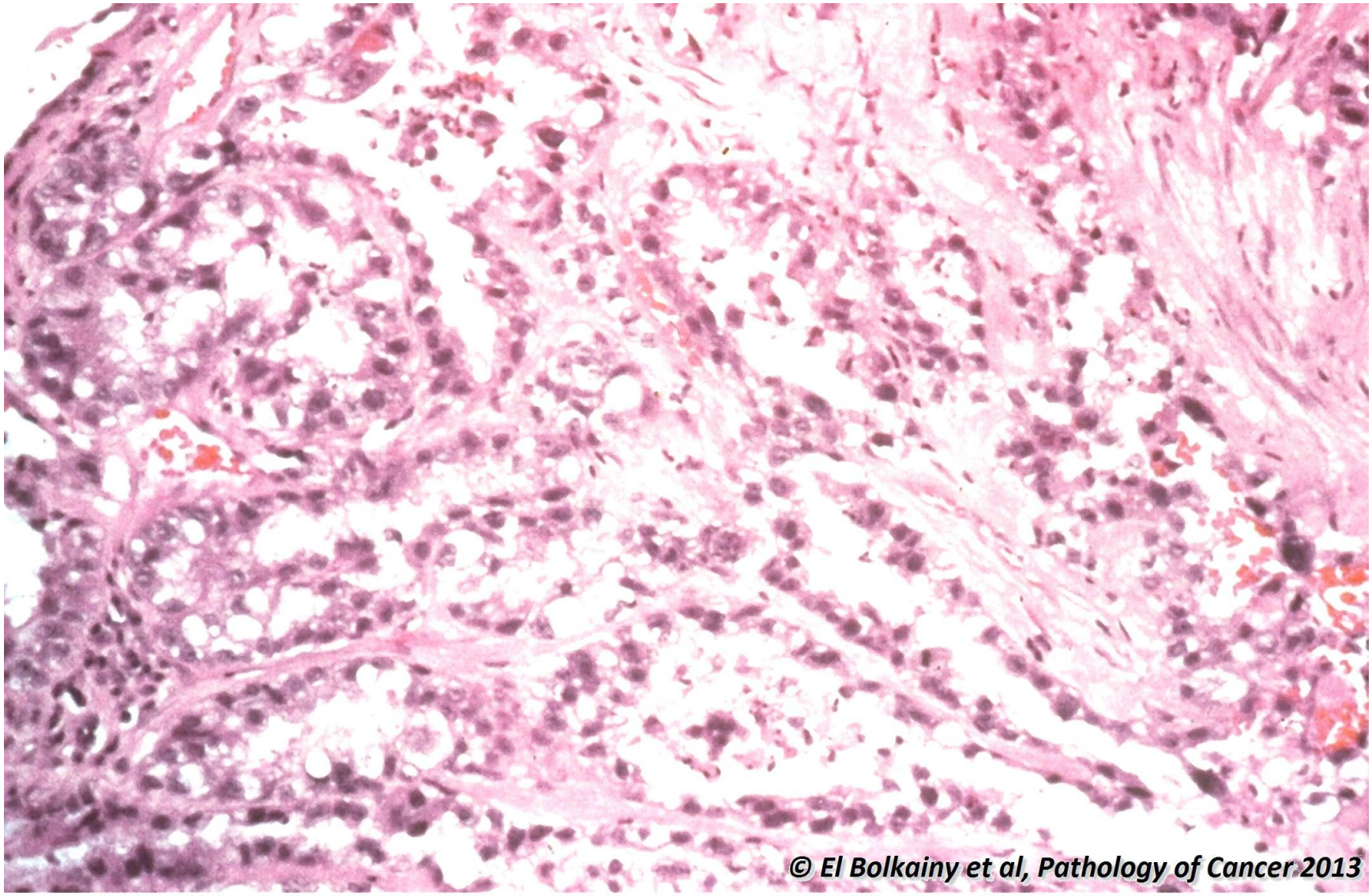
Picture 17-39 **Vulva, lichen sclerosis et atrophicus, histology.** In late stages there is dysplasia and atrophy of epidermis with loss of rete ridges associated with marked fibrosis in the dermis. In about 4% of cases, the lesion progresses to squamous cell carcinoma.

17.40 Vagina, squamous cell carcinoma, gross features.



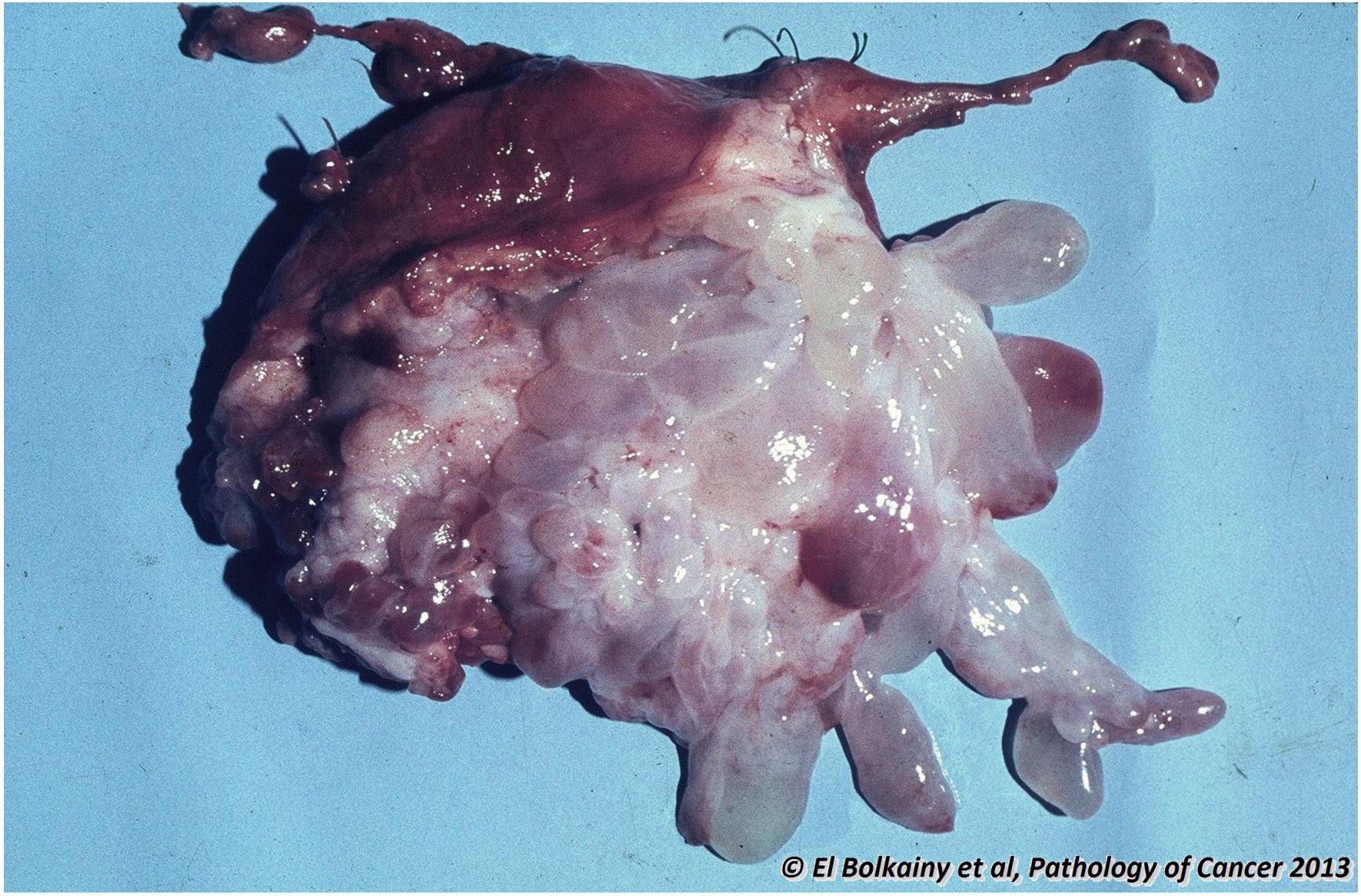
Picture 17-40 **Vagina, squamous cell carcinoma, gross features. A** and **B** A multinodular tumor arising at posterior fornix of vagina. Squamous carcinoma is the most common (80%) malignant tumor in the vagina.

17.41 Vagina, primary clear cell adenocarcinoma, histology.



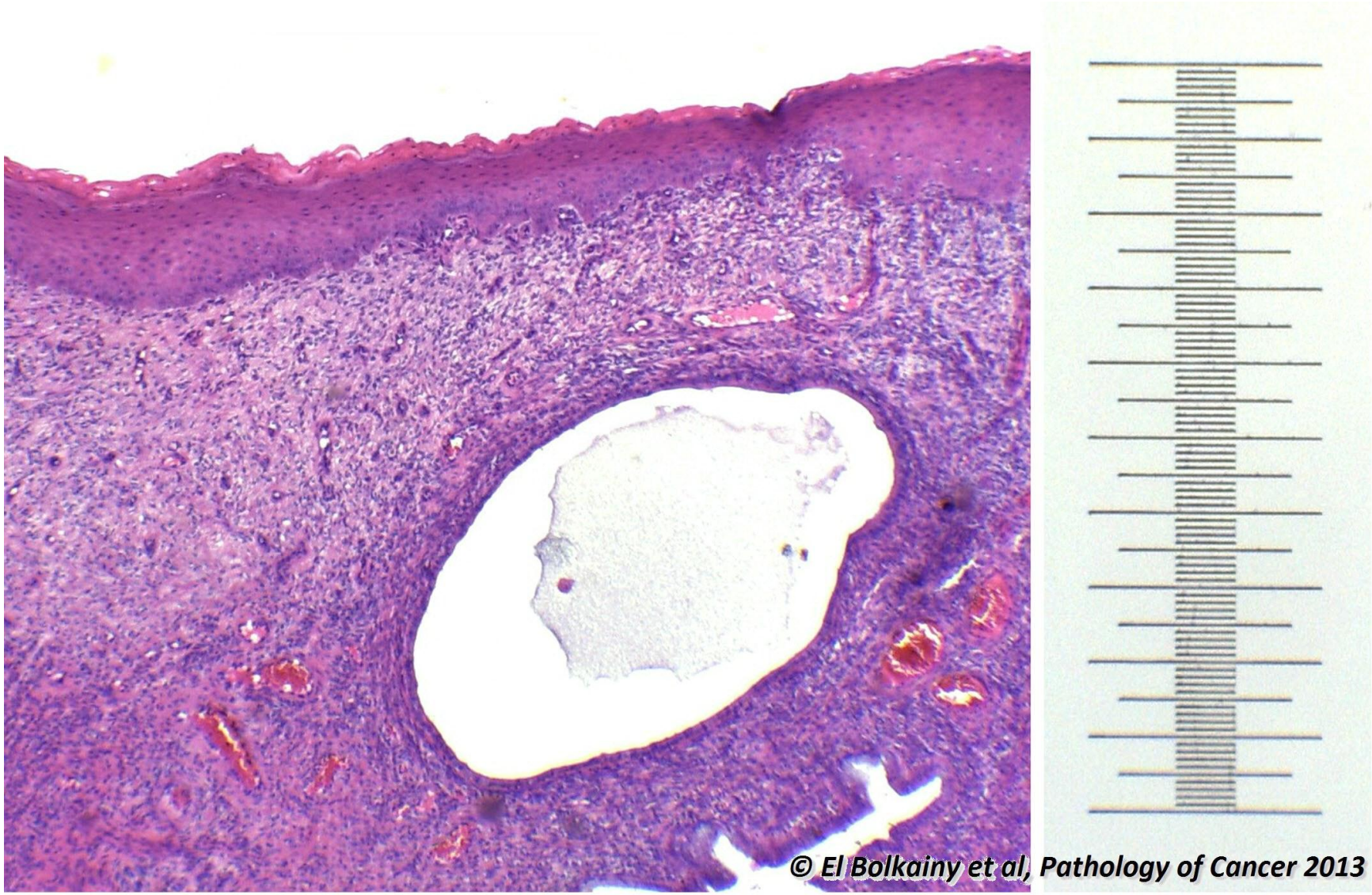
Picture 17-41 **Vagina, primary clear cell adenocarcinoma, histology.** Clear and eosinophilic cells with hobnail pattern line irregular glands. Other variants are: endometrioid, mucinous and mesonephric. Secondary adenocarcinoma are more common than primary adenocarcinoma of vagina.

17.42 Vagina, sarcoma botryoides (embryonal rhabdomyosarcoma), gross features.



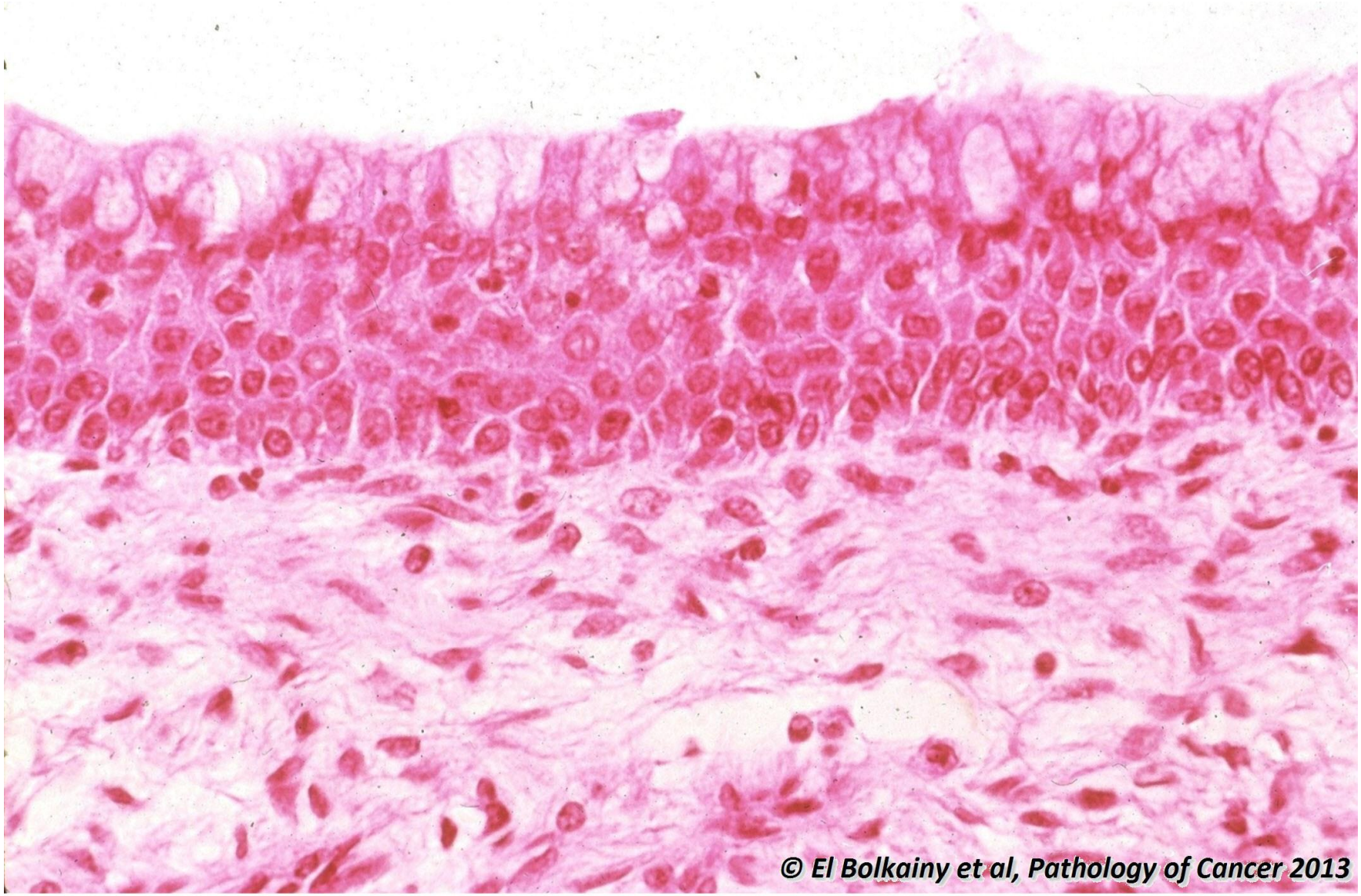
Picture 17-42 **Vagina, sarcoma botryoides (embryonal rhabdomyosarcoma), gross features.** Most common in children (< 5 years). It appears as soft, polypoid, grape-like tumor which may protrude from vaginal orifice.

17.43 Uterine cervix, normal thickness of epithelium and glands.



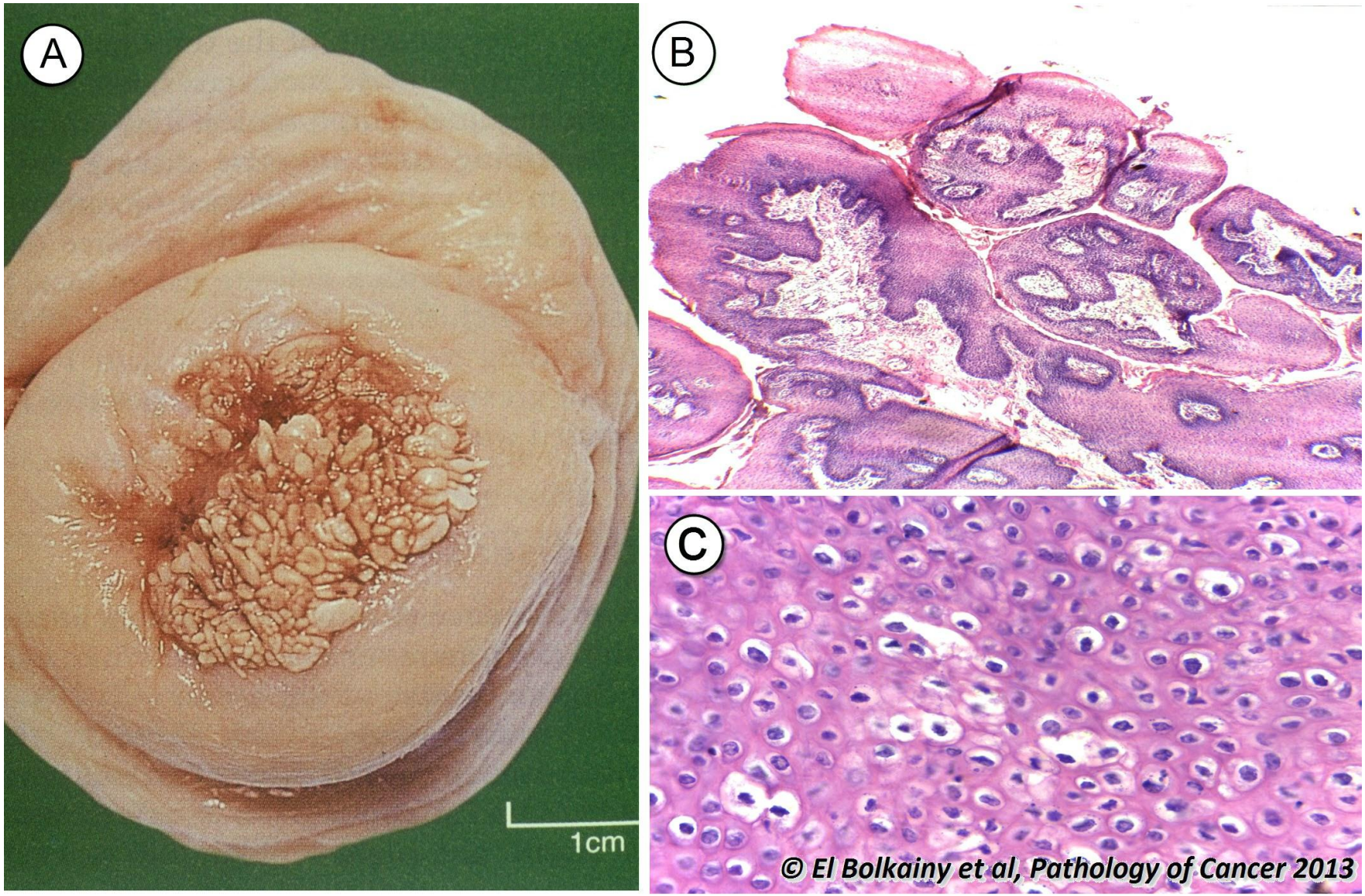
Picture 17-43 **Uterine cervix, normal thickness of epithelium and glands.** It varies from 100-200 micrometers. The scale is 1mm grid, subdivided into 10 equal parts, each 100 microns. The endocervical glands extend to a distance of only 1-2 mm from surface.

17.44 Endocervix, basal cell hyperplasia, histology.



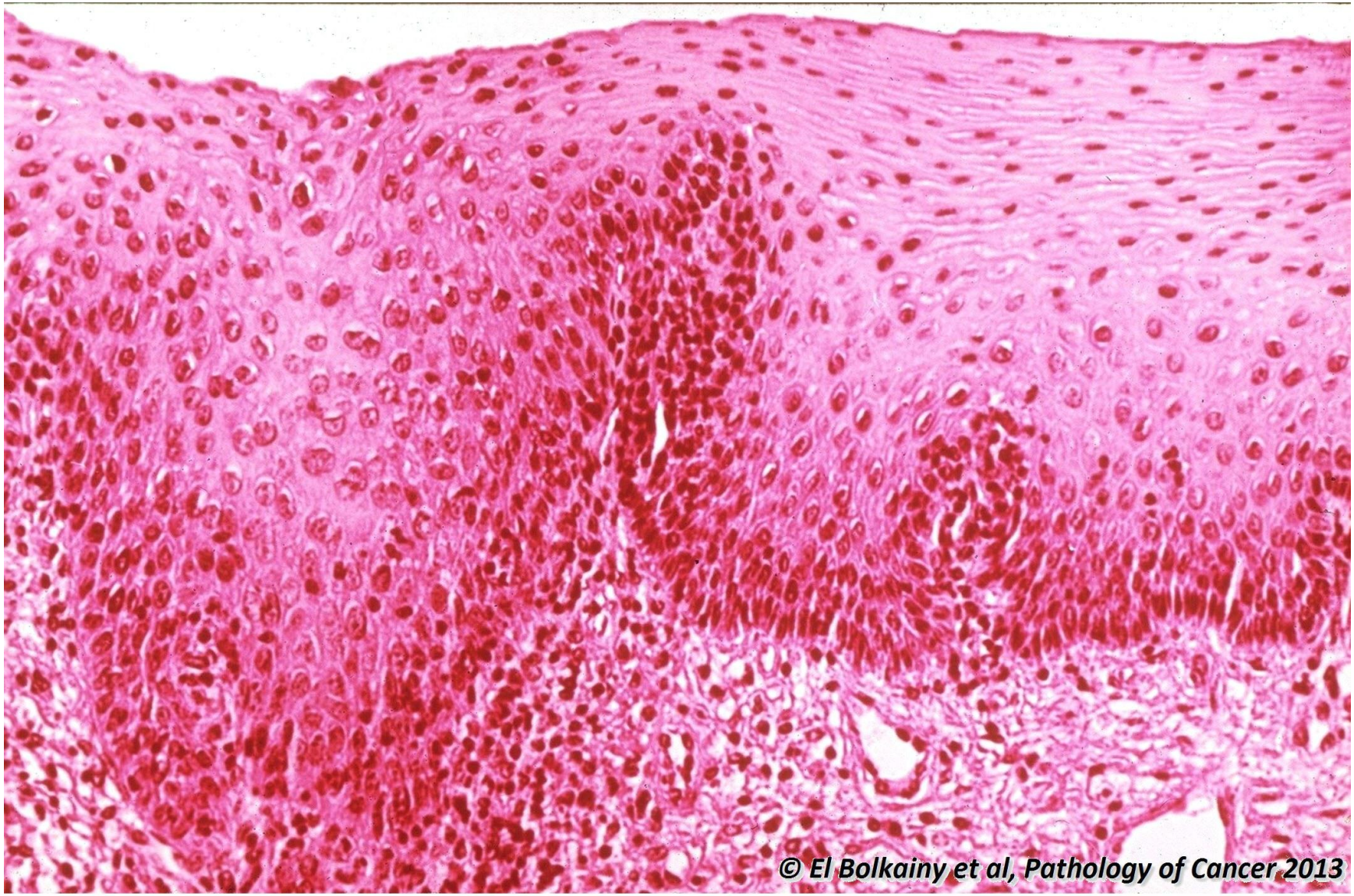
Picture 17-44 **Endocervix, basal cell hyperplasia, histology.** Increase of basal cells under normal endocervical columnar cells, but, the nuclei lack any atypia.

17.45 Ectocervix, condyloma, histology.



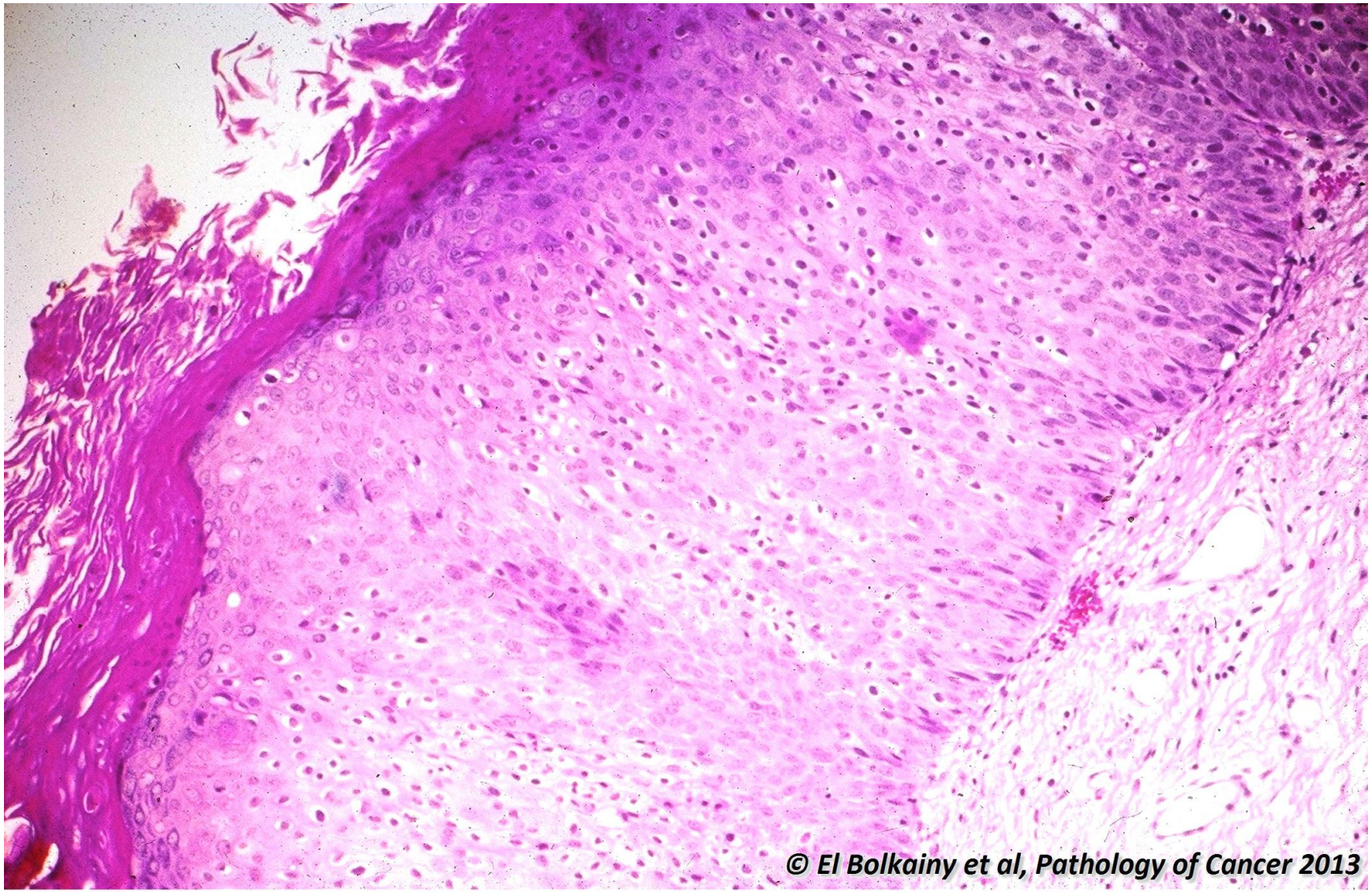
Picture 17-45 **Ectocervix, condyloma, histology. A** Papillary lesion around external os. **B** and **C** Histology, hyperplasia of squamous epithelium with perinuclear vacuoles (koilocytosis) indicates HPV infection.

17.46 Ectocervix, mild dysplasia, histology.



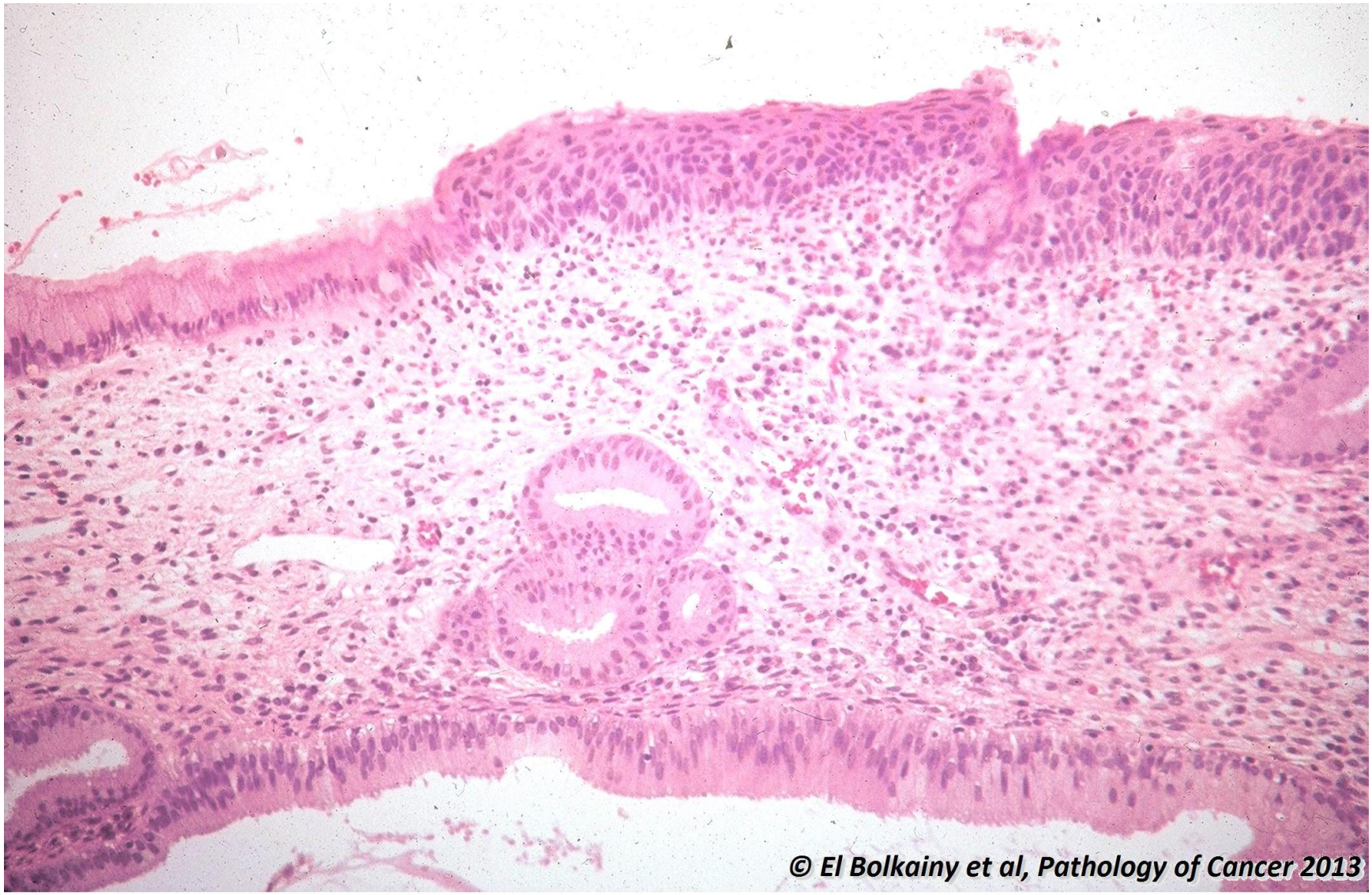
Picture 17-46 **Ectocervix, mild dysplasia, histology.** This low grade squamous intraepithelial lesion (LSIL) shows atypical squamous cells limited to the lower third of epithelial thickness. This lesion is related to HPV infection, commonly (85%) reversible, hence, it is a low-risk lesion (only 5% progress to malignancy).

17.47 Ectocervix, marked dysplasia, histology.



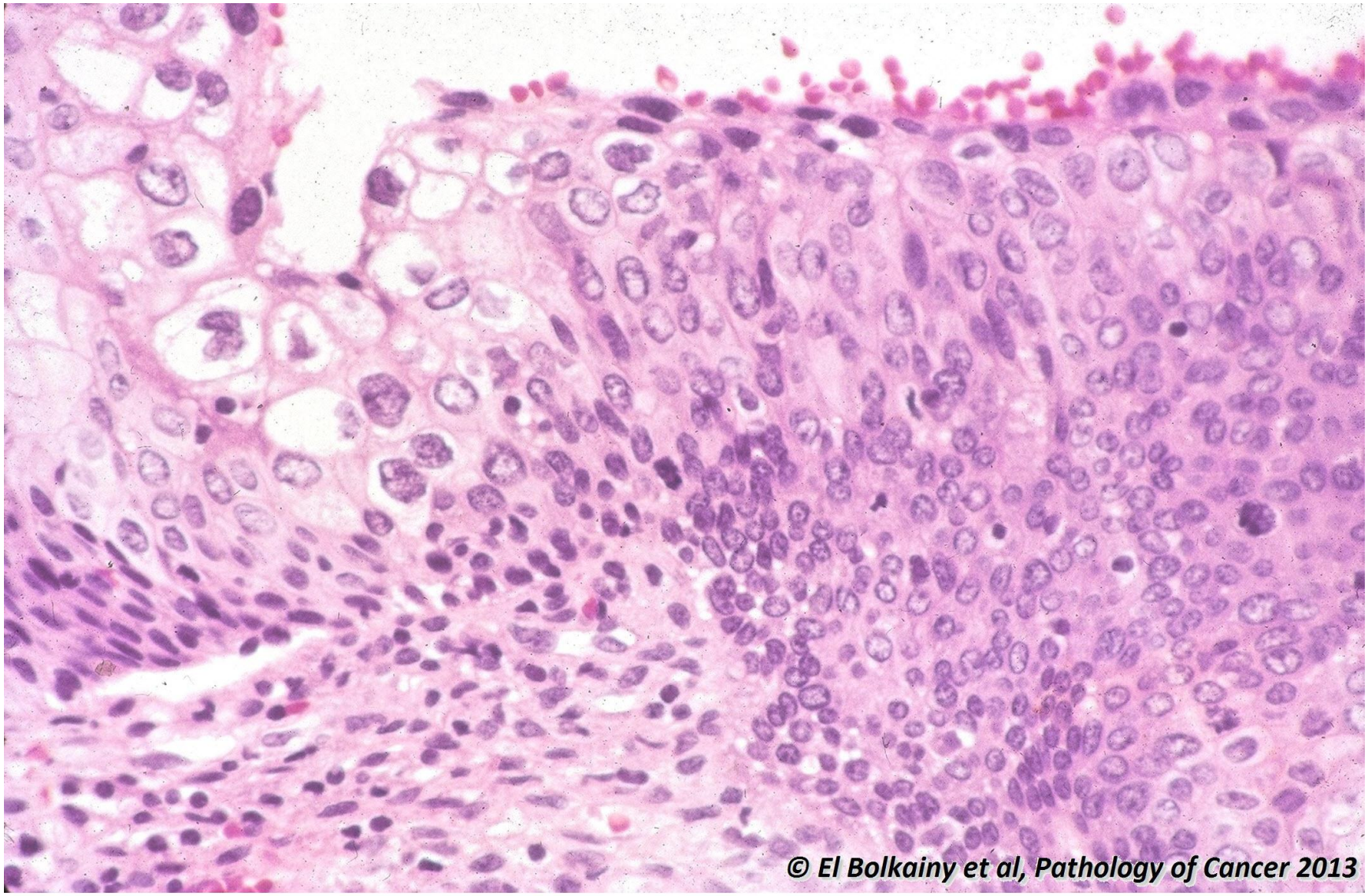
Picture 17-47 **Ectocervix, marked dysplasia, histology.** This high-grade squamous intraepithelial lesion (HSIL) shows atypical cells in lower (2/3) of epithelial thickness. This is HPV-related high risk lesion, and if untreated will progress to carcinoma in 33% of cases.

17.48 Cervical carcinoma in situ, histology, low power.



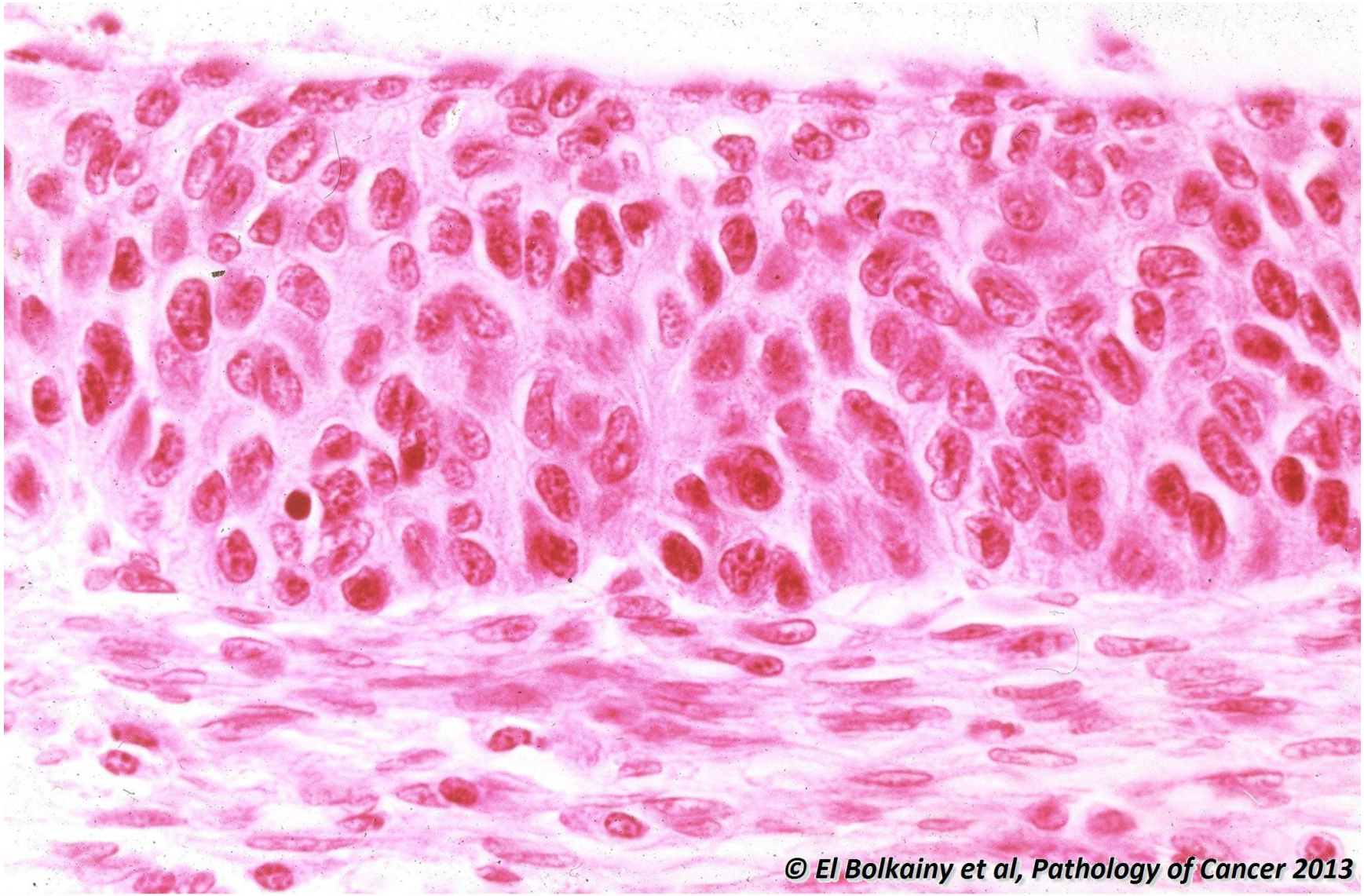
Picture 17-48 **Cervical carcinoma in situ, histology, low power.** Also known as high-grade squamous intraepithelial lesion commonly arises at squamo-columnar junction (transition zone). Note increase in thickness of epithelium affected but no invasion of stroma..

17.49 Cervical carcinoma in situ, histology.



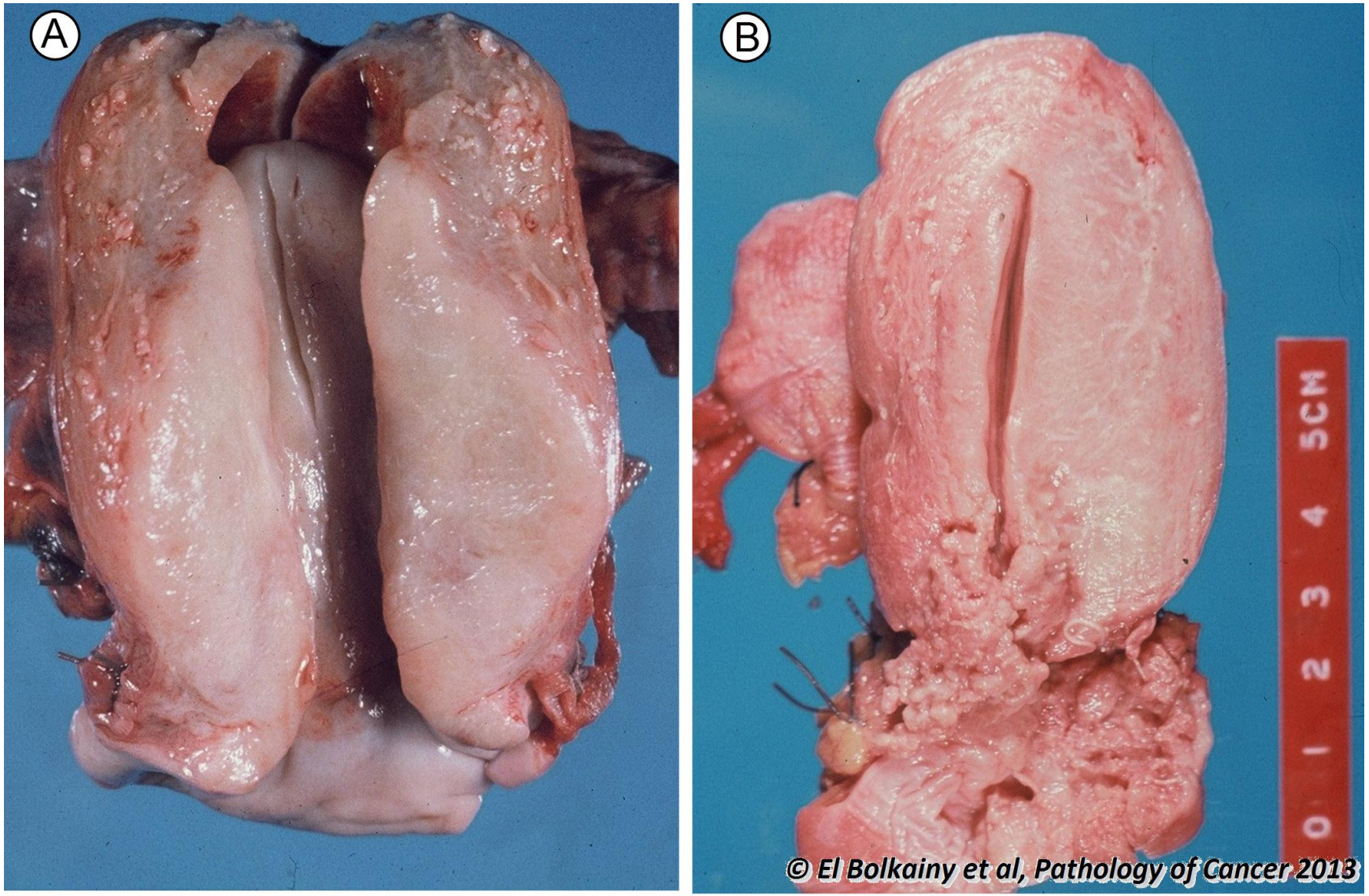
Picture 17-49 **Cervical carcinoma in situ, histology.** This high grade squamous intraepithelial lesion (HSIL) shows focal distribution of malignant squamous cells affecting the entire thickness of epithelium, but no invasion of basement membrane. If untreated, this high-risk lesion will progress to invasive cancer in almost 70% of cases.

17.50 Cervical carcinoma in situ, histology.



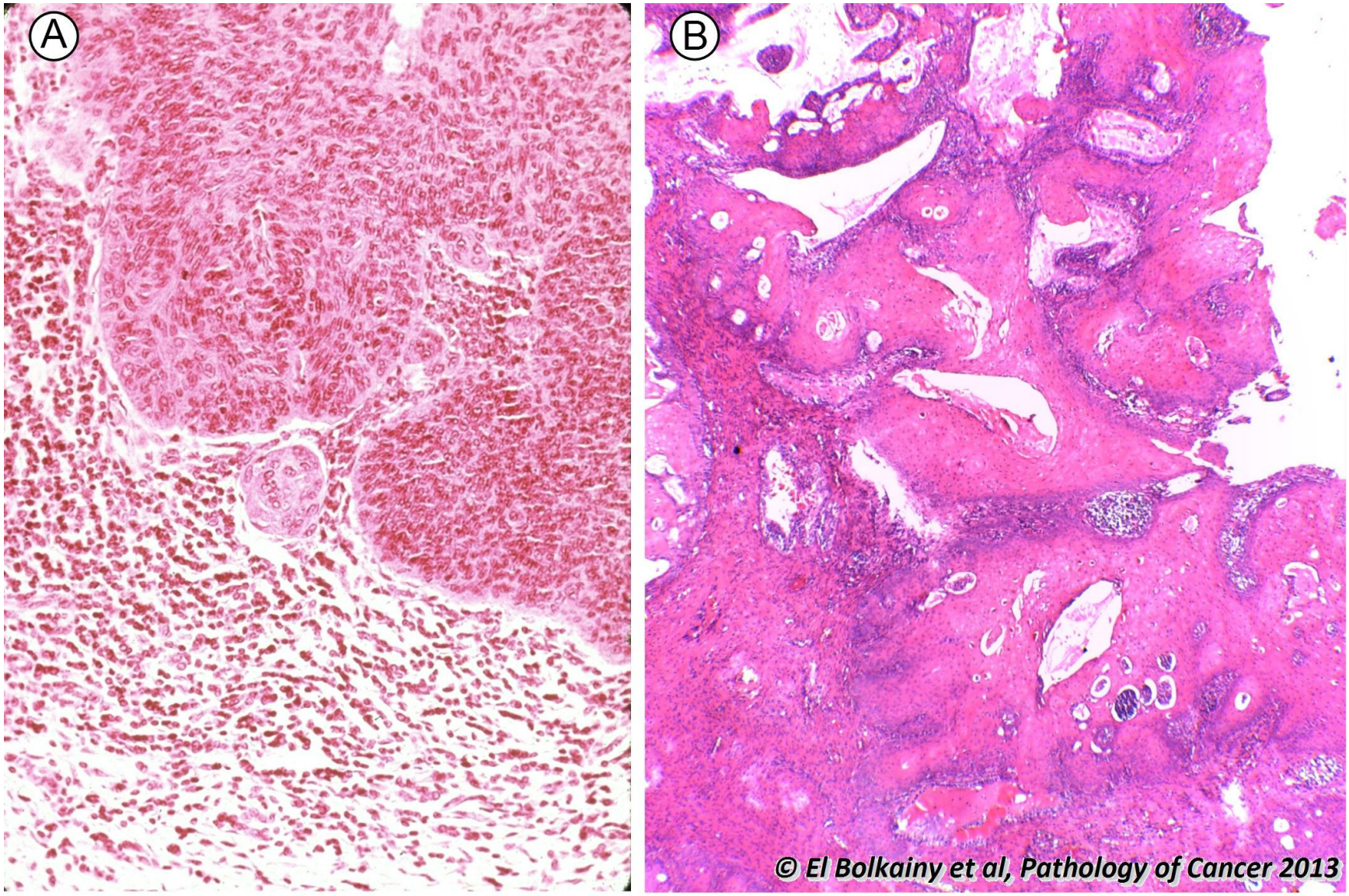
Picture 17-50 **Cervical carcinoma in situ, histology.** High power, showing diffuse distribution of malignant cells of (HSIL), affecting the whole epithelial thickness, with cellular anaplasia and loss of polarity, but no invasion of stroma.

17.51 Uterine cervix, carcinoma, gross features.



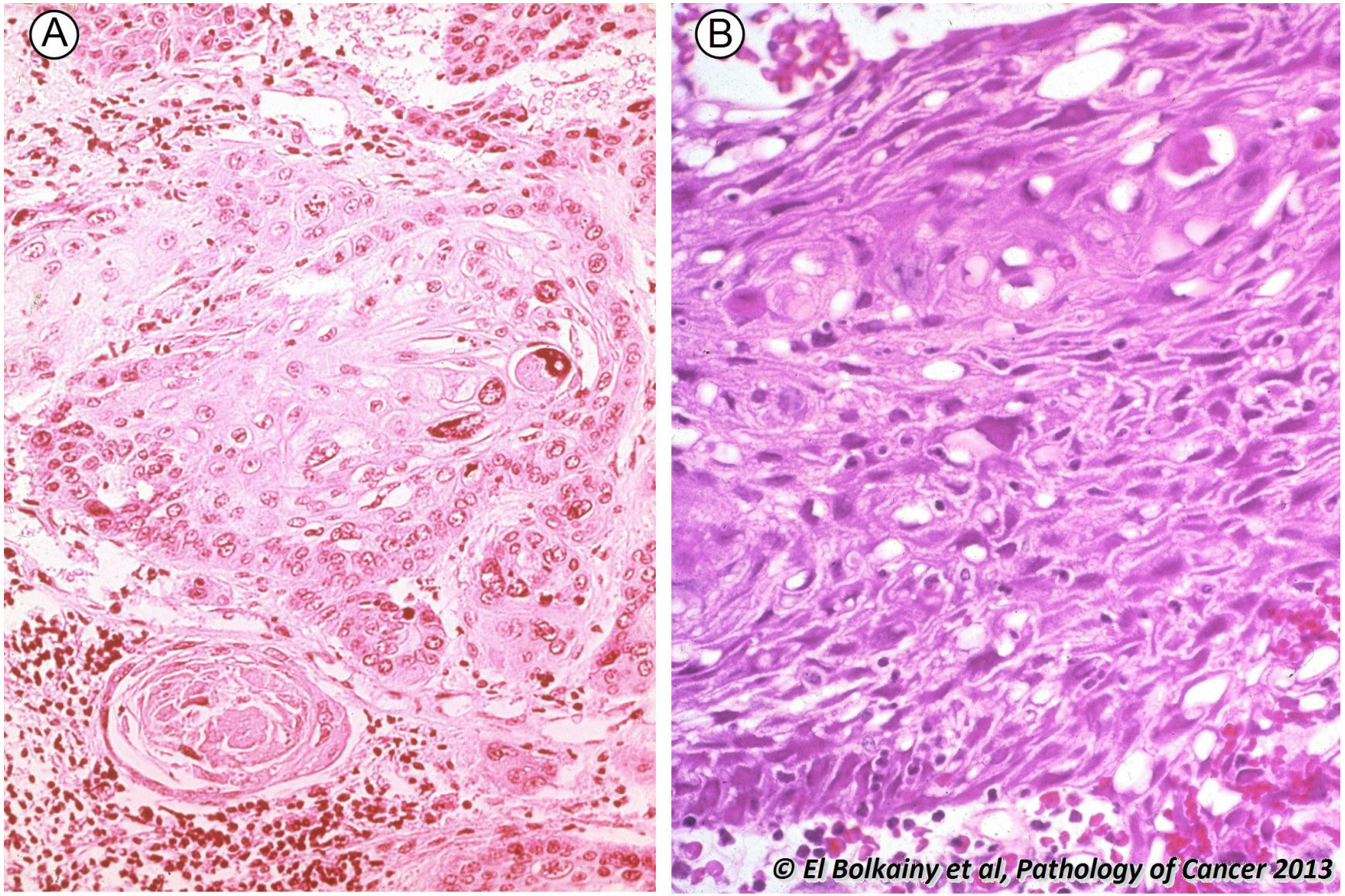
Picture 17-51 **Uterine cervix, carcinoma, gross features. A** Cervical carcinoma with diffuse upward spread to myometrium producing a barrel-shaped uterus. **B** An advanced carcinoma, confined to and destroying the cervix.

17.52 Uterine cervix, early invasive squamous cell carcinoma, histology.



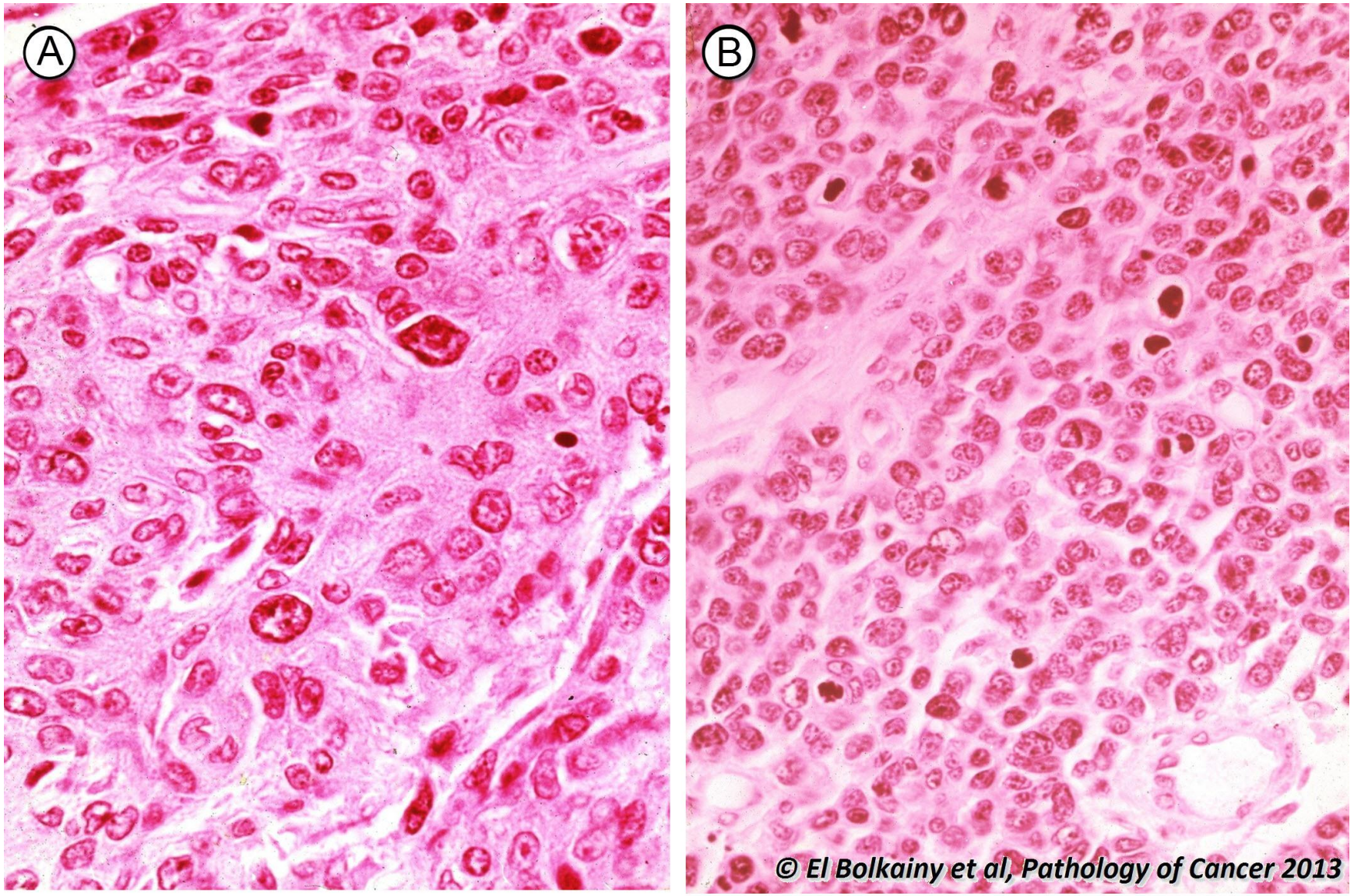
Picture 17-52 **Uterine cervix, early invasive squamous cell carcinoma, histology. A** Associated (HSIL). **B** Early invasion (microcarcinoma) infiltrates the stroma to a depth of only 5 mm. The carcinoma is well-differentiated (grade 1).

17.53 Cervix, squamous cell carcinoma, keratinizing type, histology.



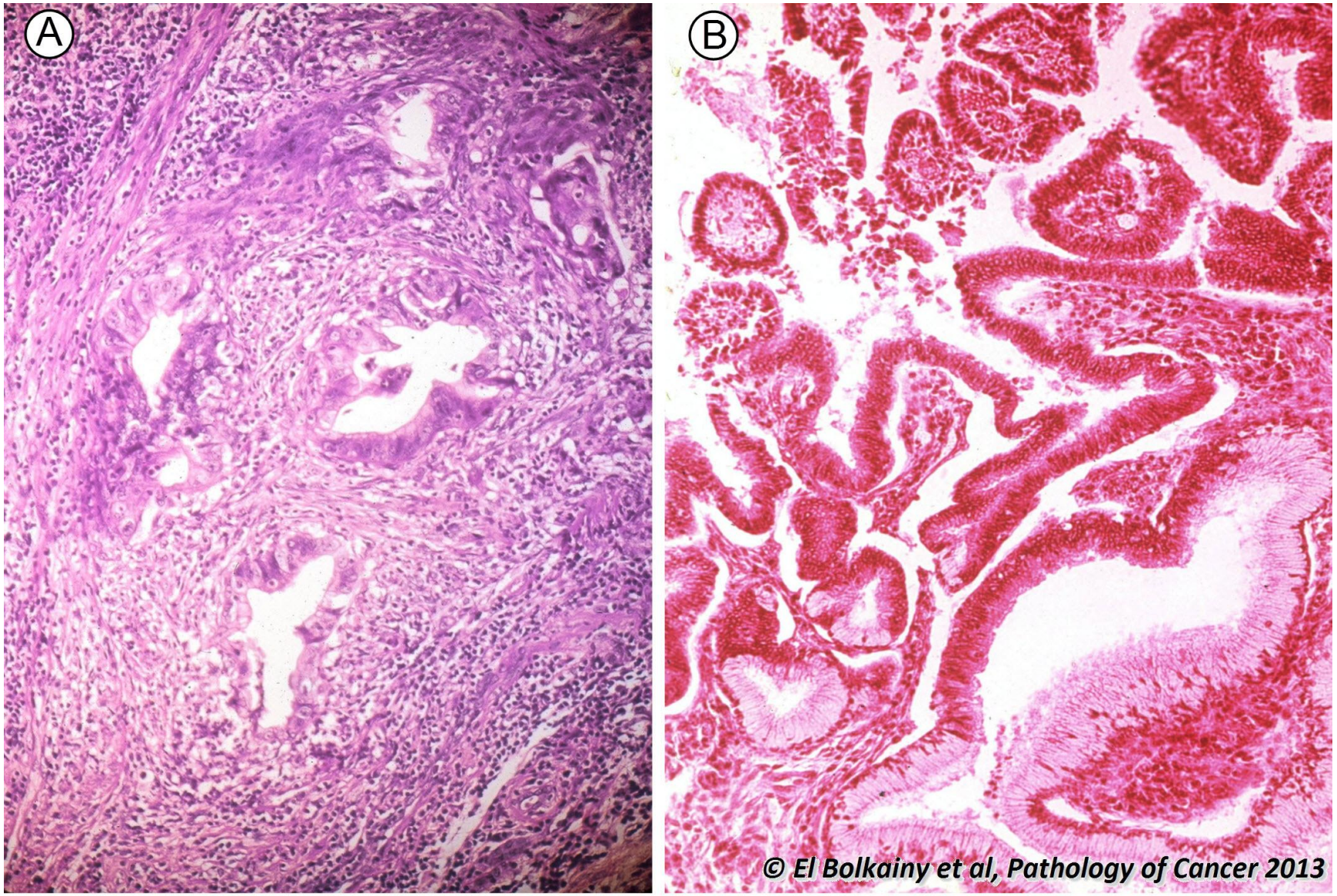
Picture 17-53 **Cervix, squamous cell carcinoma, keratinizing type, histology. A** and **B** The carcinoma shows individual cell keratinization in the cytoplasm (eosinophilia), anaplasia and mitosis are moderate (grade 2). Other variants include: papillary, verrucous, basaloid and lymphoepithelioma.

17.54 Cervix, squamous cell carcinoma, large cell non-keratinizing subtype, histology.



Picture 17-54 **Cervix, squamous cell carcinoma, large cell non-keratinizing subtype, histology. A** and **B** The malignant cells are poorly-differentiated and of large size. There is marked anaplasia and mitosis (grade 3).

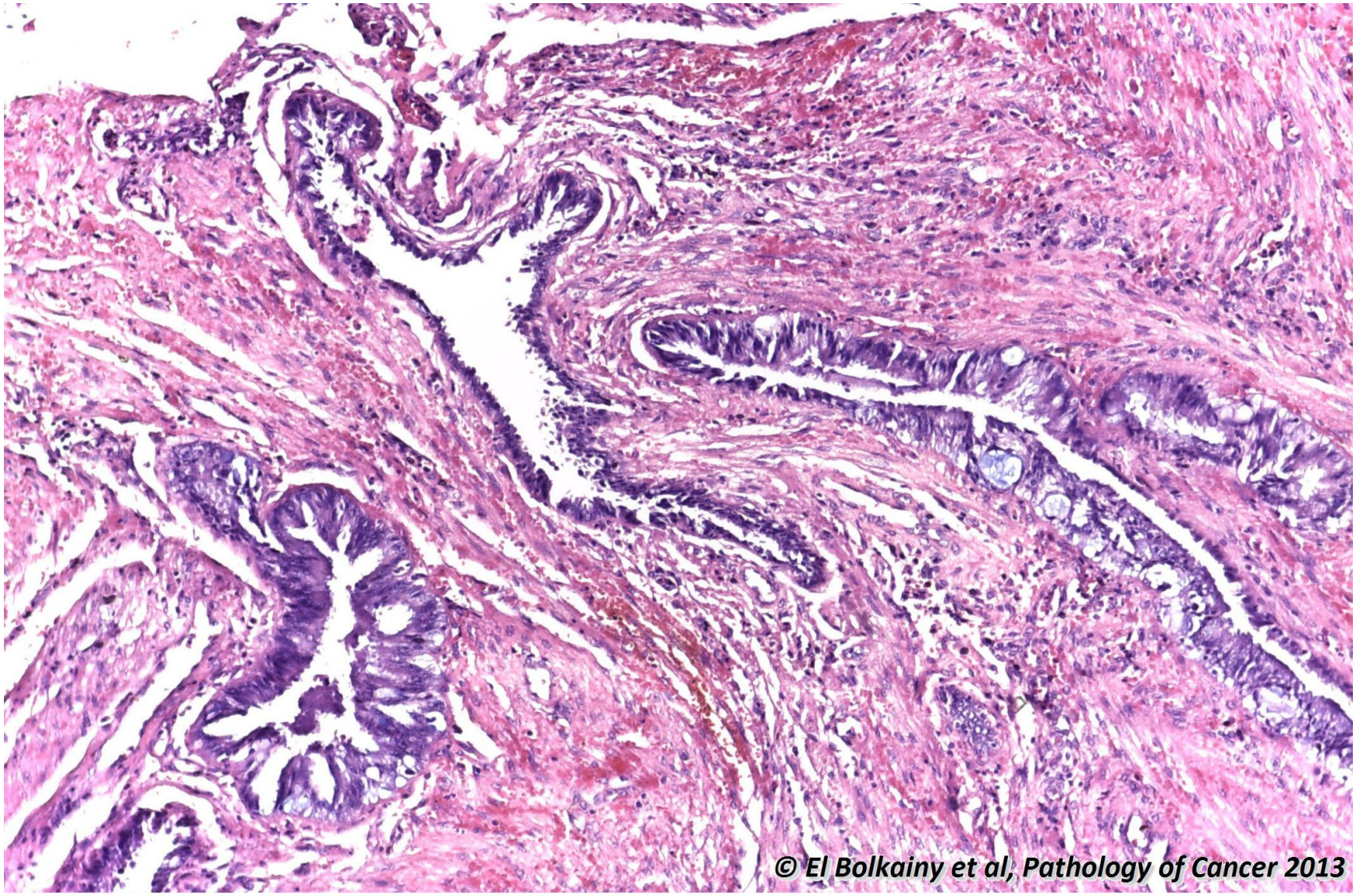
17.55 Endocervix, invasive adenocarcinoma, histology.



Picture 17-55

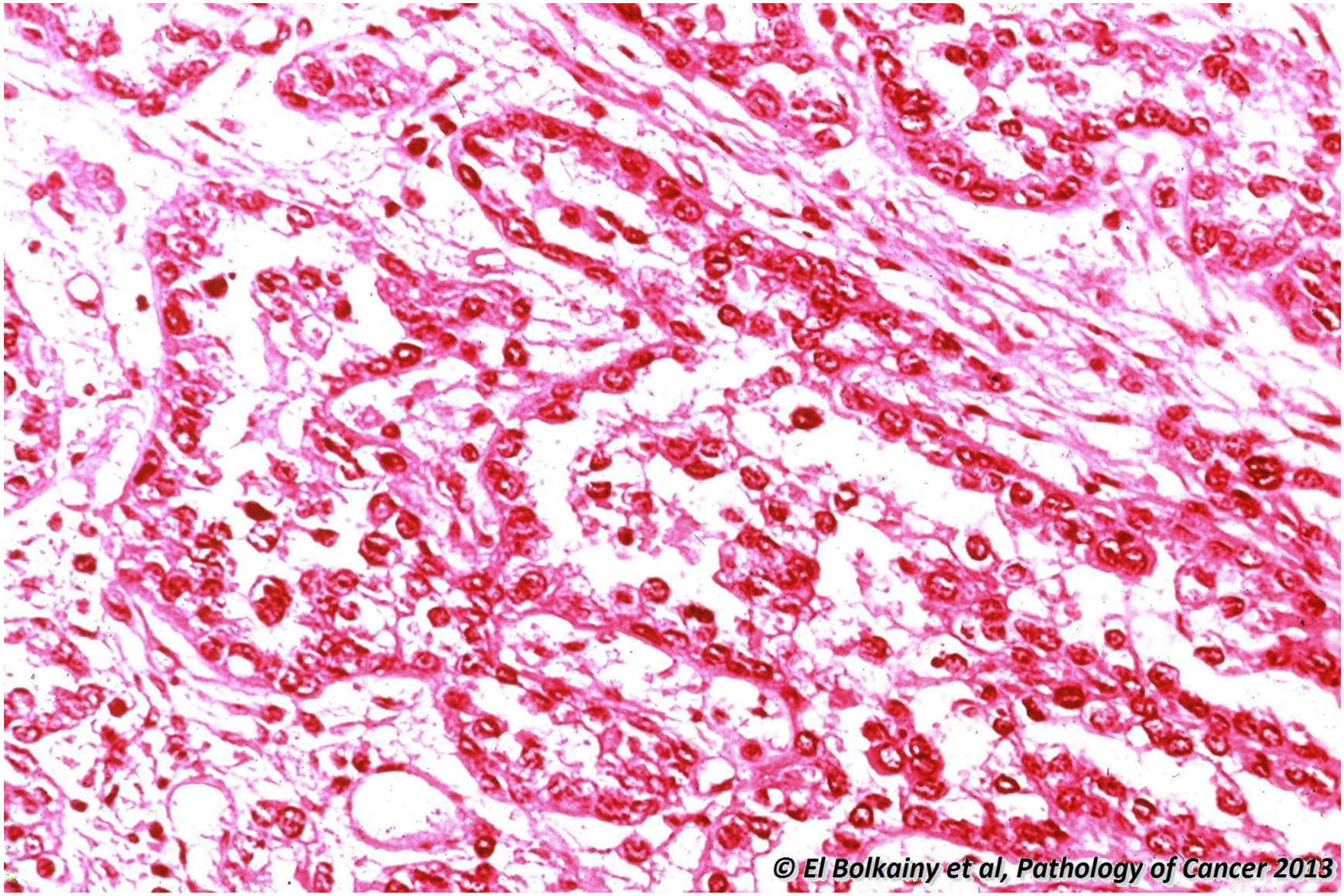
Endocervix, invasive adenocarcinoma, histology. A Low power, irregular malignant glands invade deep into the cervix. **B** High power, gland-forming carcinoma showing crowded papillary pattern and lined by stratified anaplastic epithelium (grade 2). Immunostains: contrary to endometrial adenocarcinoma, this carcinoma is CEA+, vimentin -, ER/ PR negative and glycogen negative.

17.56 Endocervix, adenoma malignum, histology.



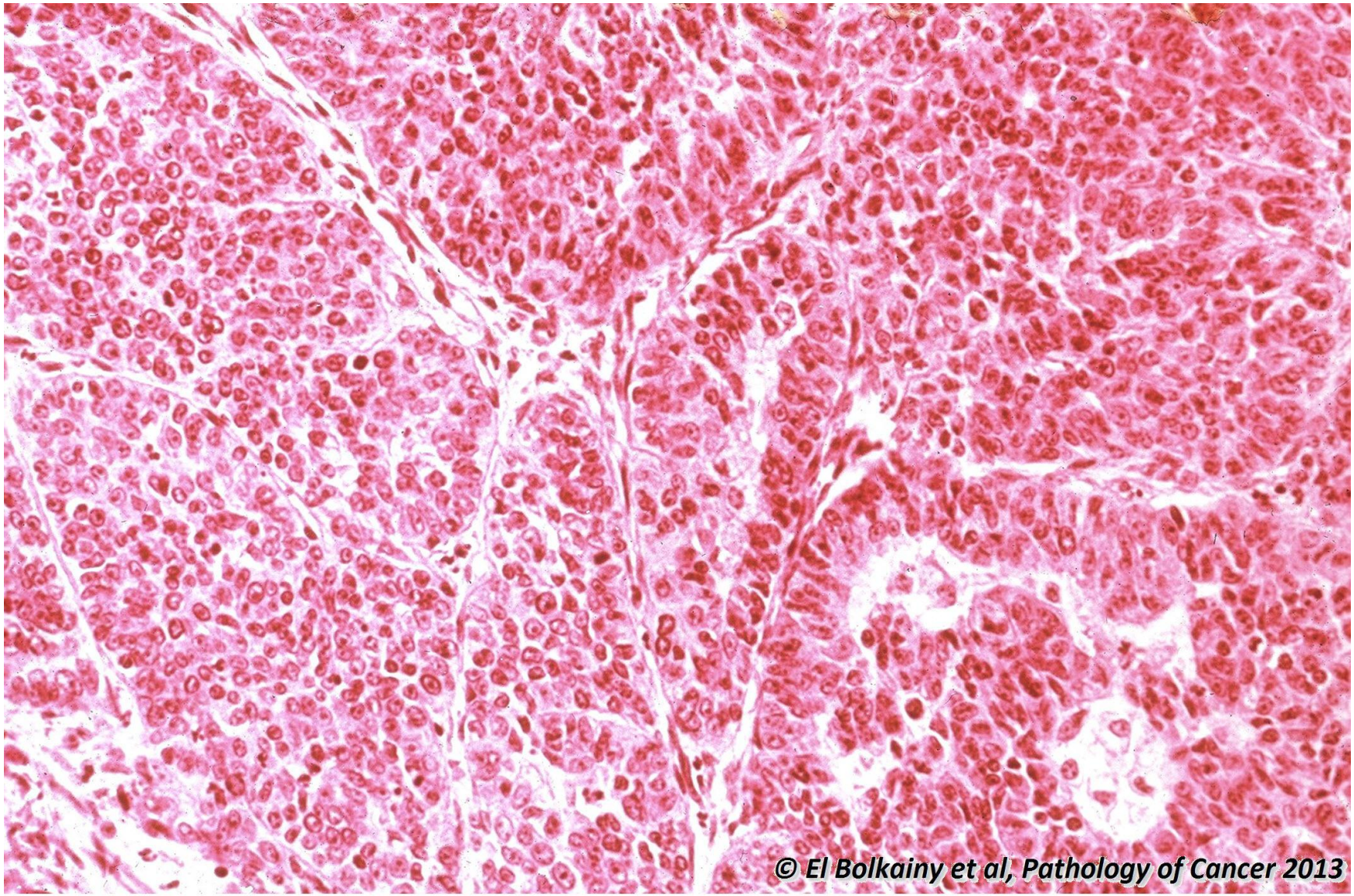
Picture 17-56 **Endocervix, adenoma malignum, histology.** This includes two subtypes: minimal deviation adenocarcinoma and villoglandular adenocarcinoma. Both contain mucin in cytoplasm and show minimal cellular atypia, hence, misdiagnosed as benign, but, their malignant nature is revealed by the deep invasion of cervical tissue.

17.57 Endocervix, clear cell carcinoma, histology.



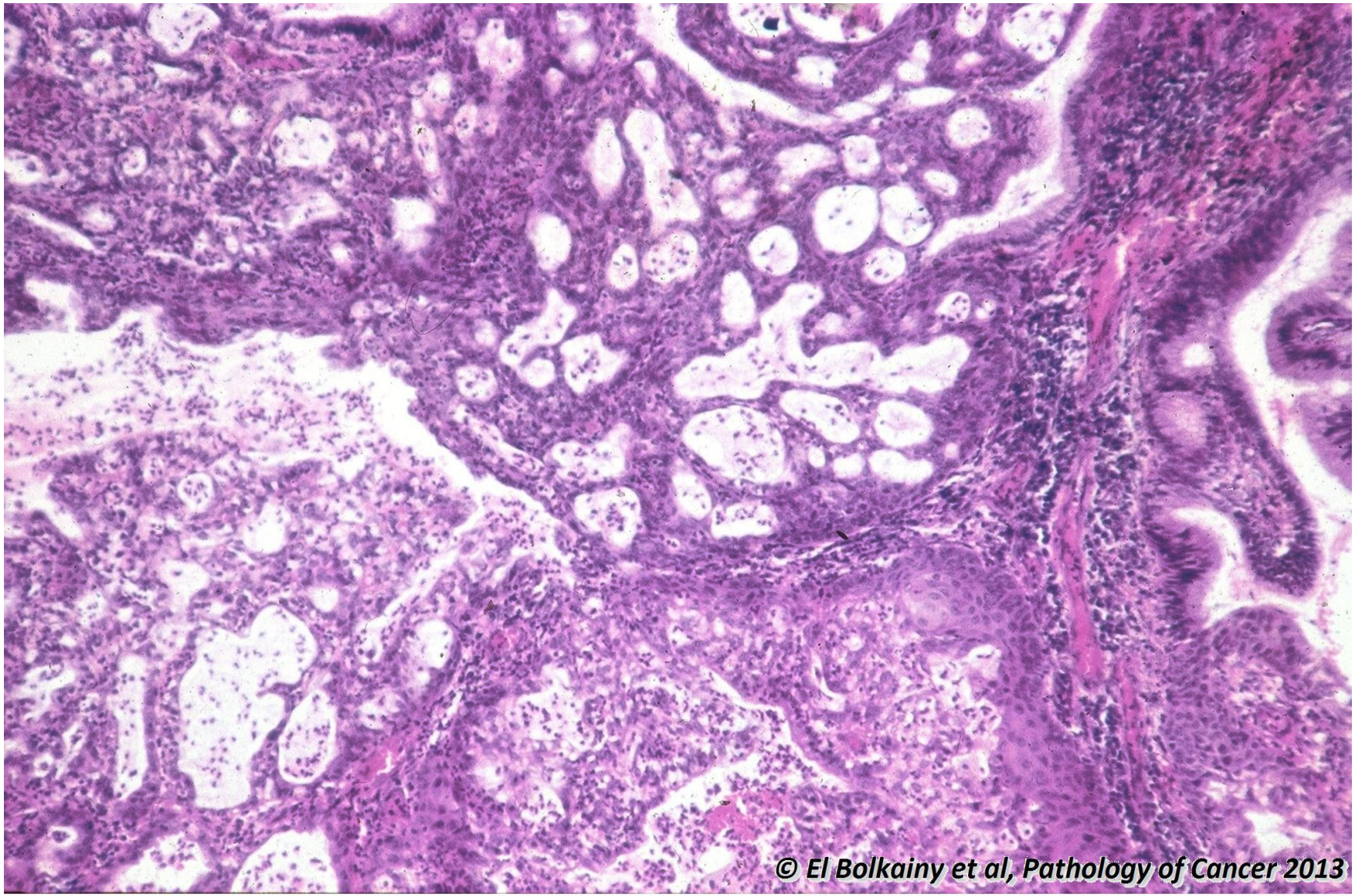
Picture 17-57 **Endocervix, clear cell carcinoma, histology.** This rare tumor shows clear and hobnail cells, arranged in various patterns (solid, tubulocystic and papillary). It may be related to in-utero estrogen exposure.

17.58 Endocervix, adenosquamous carcinoma, histology.



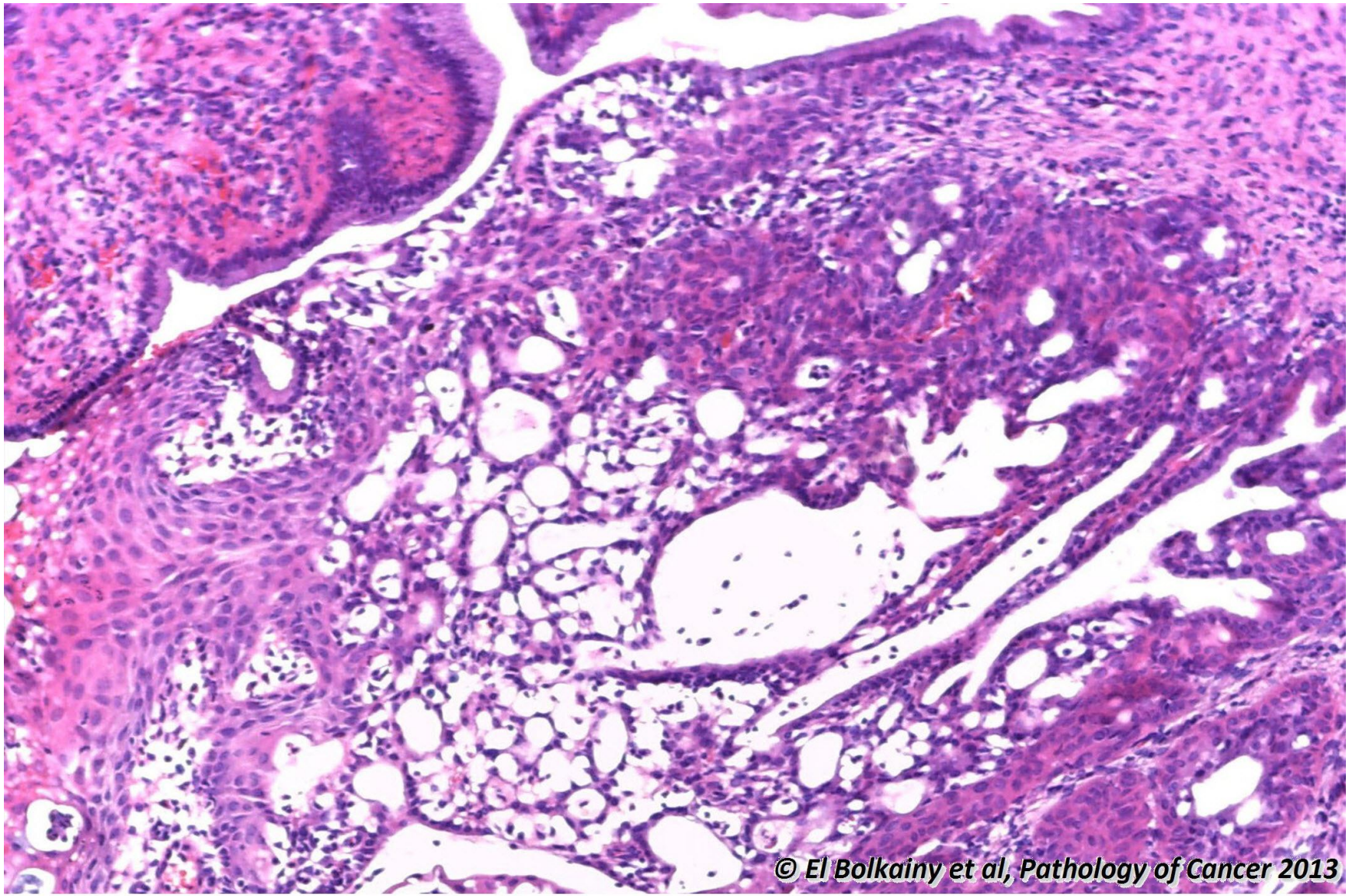
Picture 17-58 **Endocervix, adenosquamous carcinoma, histology.** The tumor shows two distinct components of invasive squamous carcinoma and adenocarcinoma.

17.59 Endocervix, mesonephric adenocarcinoma, histology.



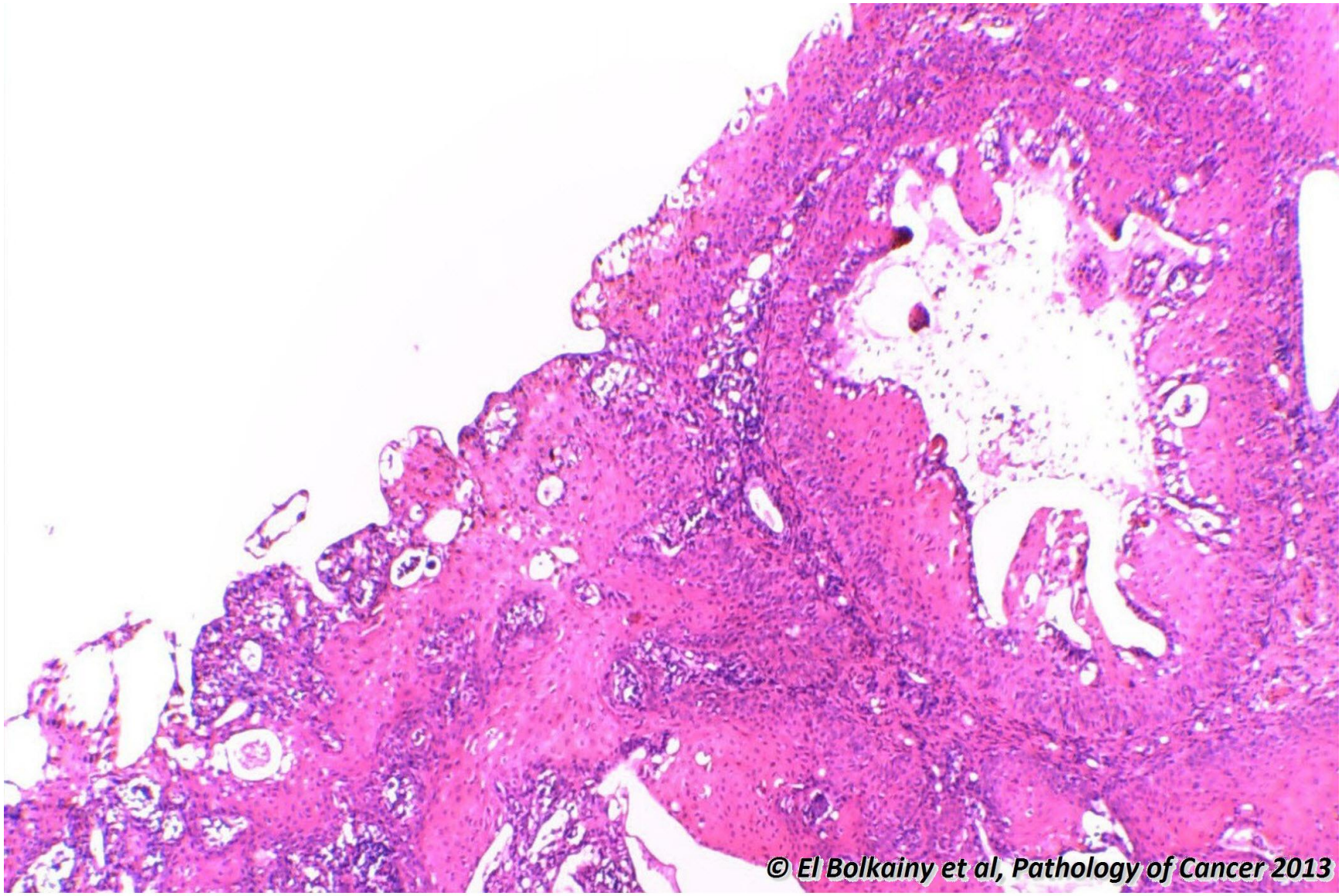
Picture 17-59 **Endocervix, mesonephric adenocarcinoma, histology.** A carcinoma may arise from mesonephric remnanats in the cervix and present as a closely packed tubules with eosinophilic inclusions. The cells are cuboidal with mild atypia. Immunostains: vimentin, EMA, calretinin and CD10.

17.60 Endocervix, microglandular adenosis, histology.



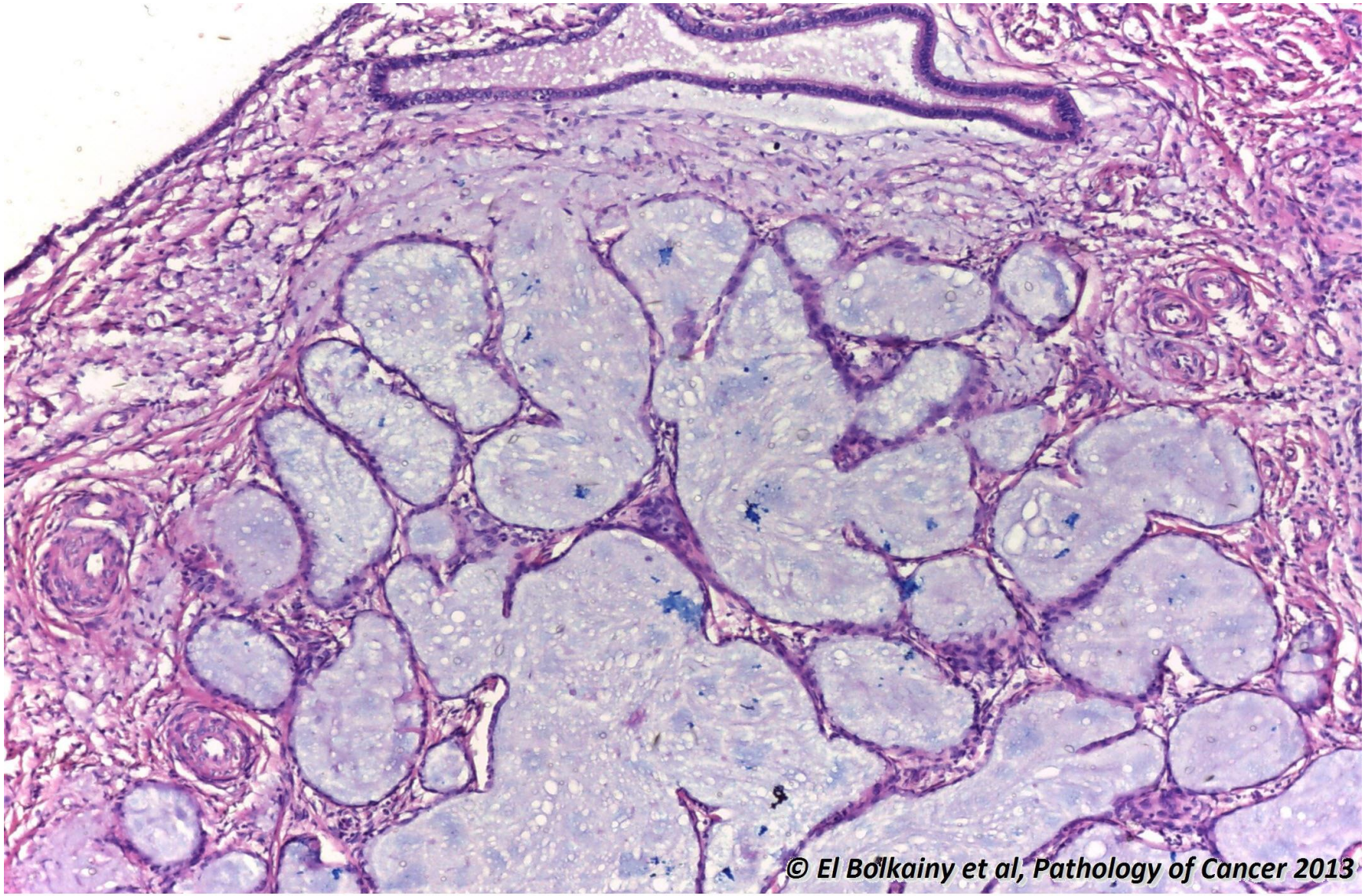
Picture 17-60 **Endocervix, microglandular adenosis, histology.** It is composed of small crowded glands, lined by bland cuboidal epithelium lacking any atypia or mitosis.

17.61 Squamous metaplasia of endocervix, histology.



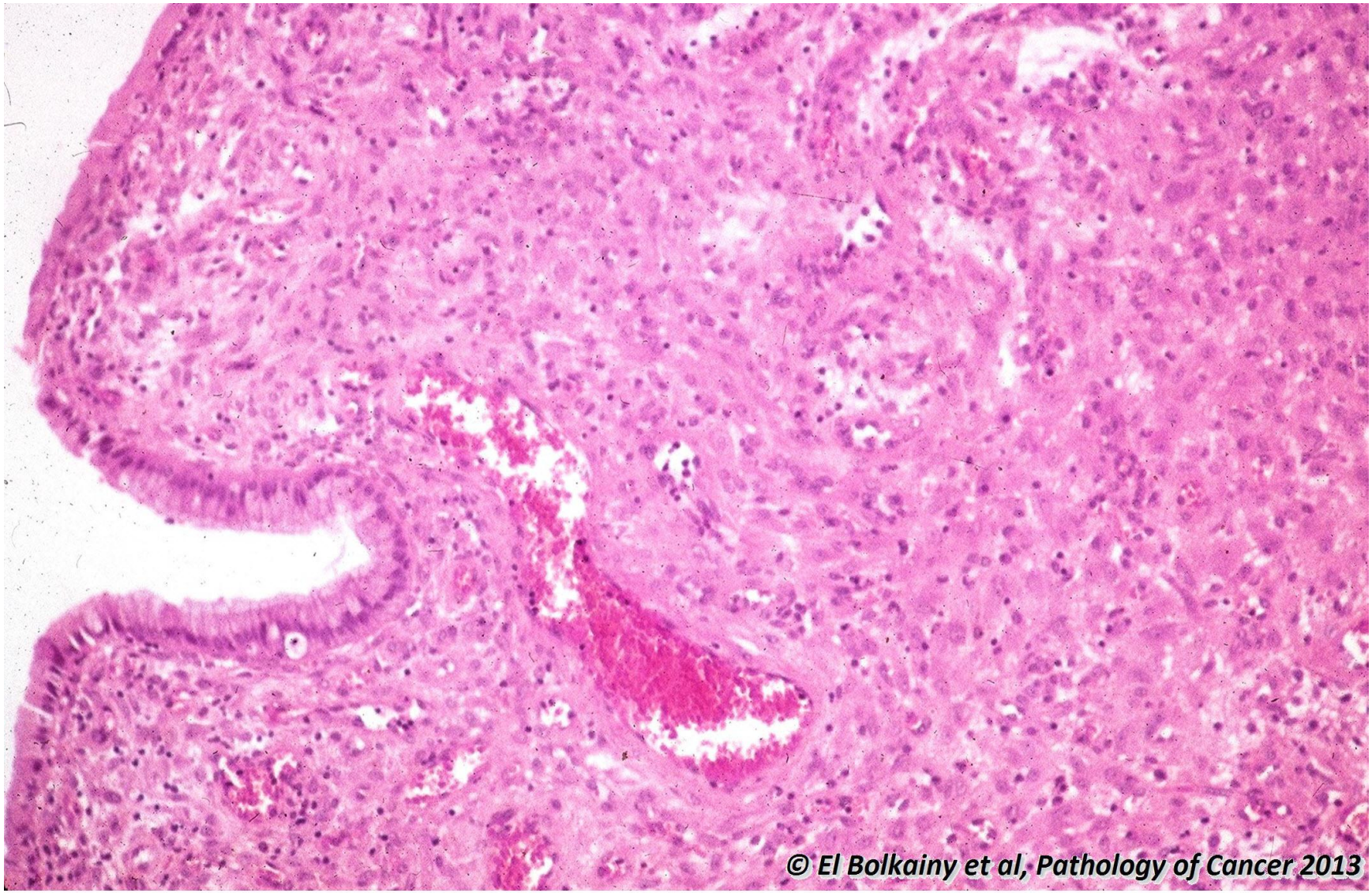
Picture 17-61 **Squamous metaplasia of endocervix, histology.** The metaplastic changes are evident in both surface epithelium and glands. The latter should not be misdiagnosed as microinvasive cancer. As shown metaplastic epithelium is lined by residual columnar epithelium.

17.62 Endocervix, tunnel clusters, histology.



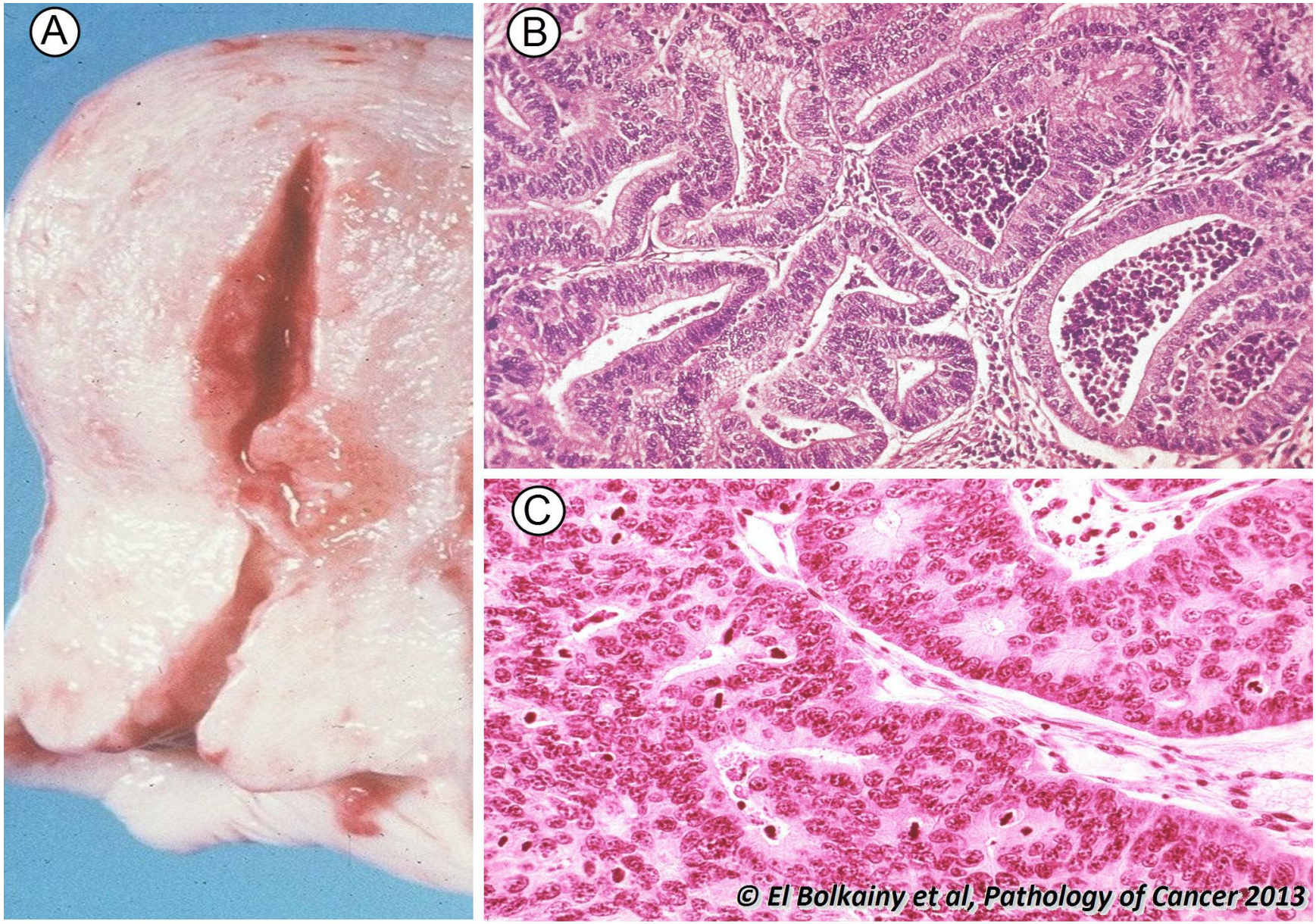
Picture 17-62 **Endocervix, tunnel clusters, histology.** This hyperplastic lesion of endocervical glands appear as crowded microcystic lesion filled with mucin. The lining is a bland flat epithelium and the preserved lobular pattern is characteristic.

17.63 Endocervix, ectopic decidual tissue, histology.



Picture 17-63 **Endocervix, ectopic decidual tissue, histology.** Polygonal cells with abundant eosinophilic cytoplasm and central small nuclei. The cells are immunoreactive to CD56.

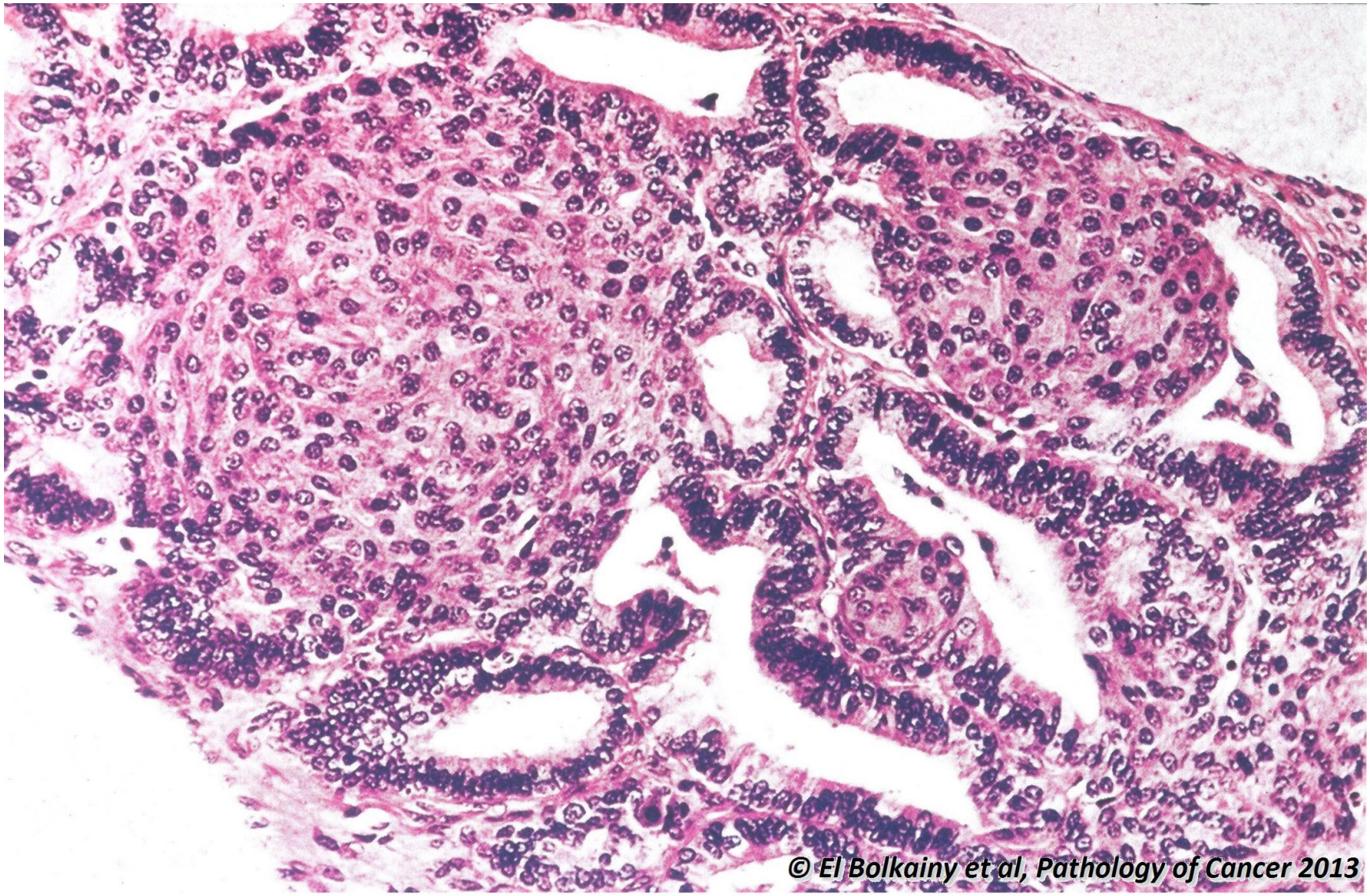
17.64 Endometrial adenocarcinoma, endometrioid, type I.



Picture 17-64

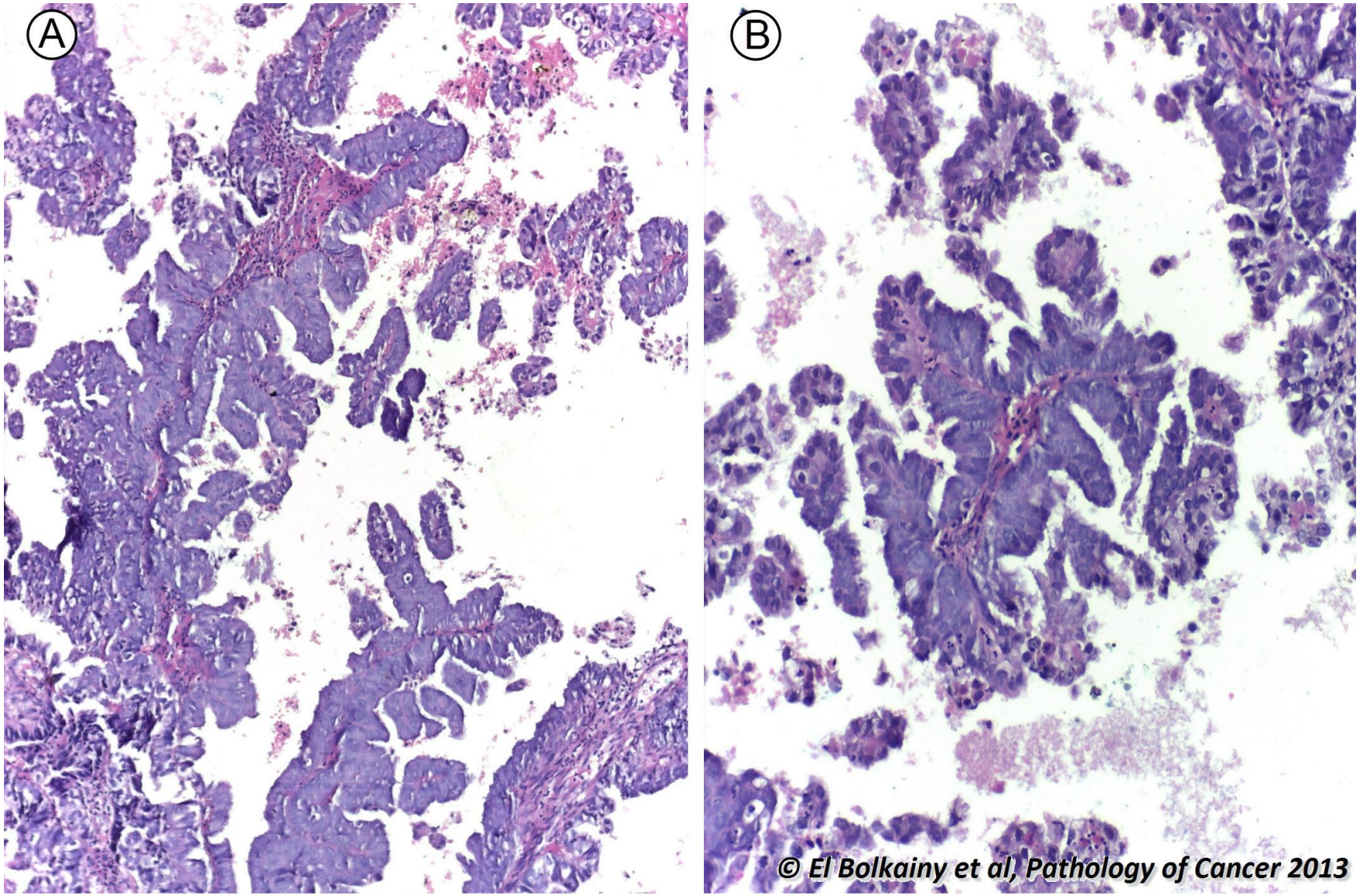
Endometrial adenocarcinoma, endometrioid, type I. A Gross appearance. **B** Crowded oval glands, back-to-back without intervening stroma, **C** distinct luminal cytoplasmic border and regular nuclear polarity. Graded according to extent of solid areas in the tumor, grade 1 < 5%, grade 2 5-50% and grade 3 > 50%. Immunostains: vimentin, ER and PR positive, but, p53 and p16 negative.

17.65 Endometrioid carcinoma with squamous metaplasia, histology.



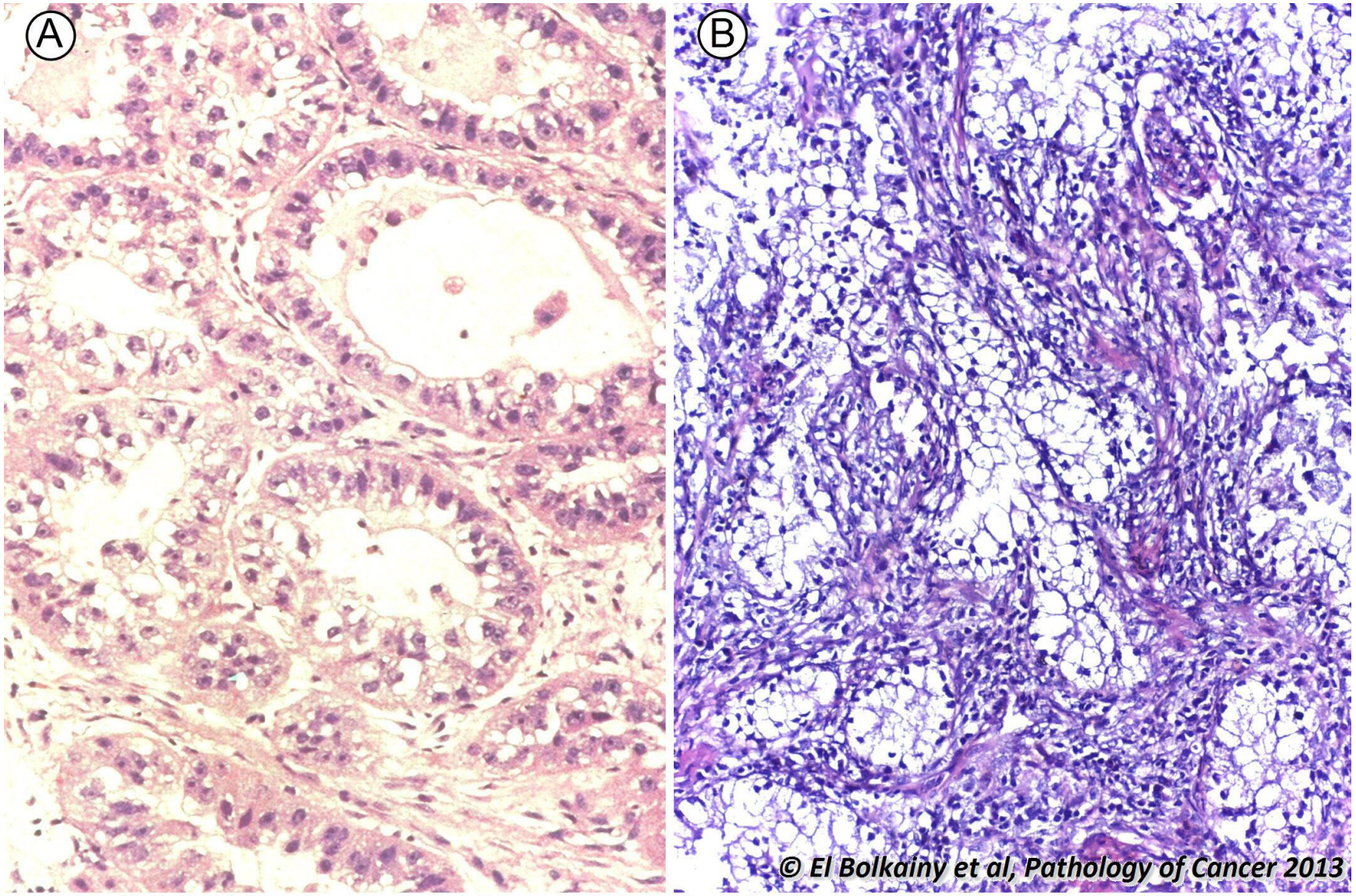
Picture 17-65 **Endometrioid carcinoma with squamous metaplasia, histology.** This variant was formely known as adenoacanthoma. The presence of squamous metaplasia in any endometrial malignancy confirms an endometrioid subtype.

17.66 Endometrial carcinoma, serous, type II, histology.



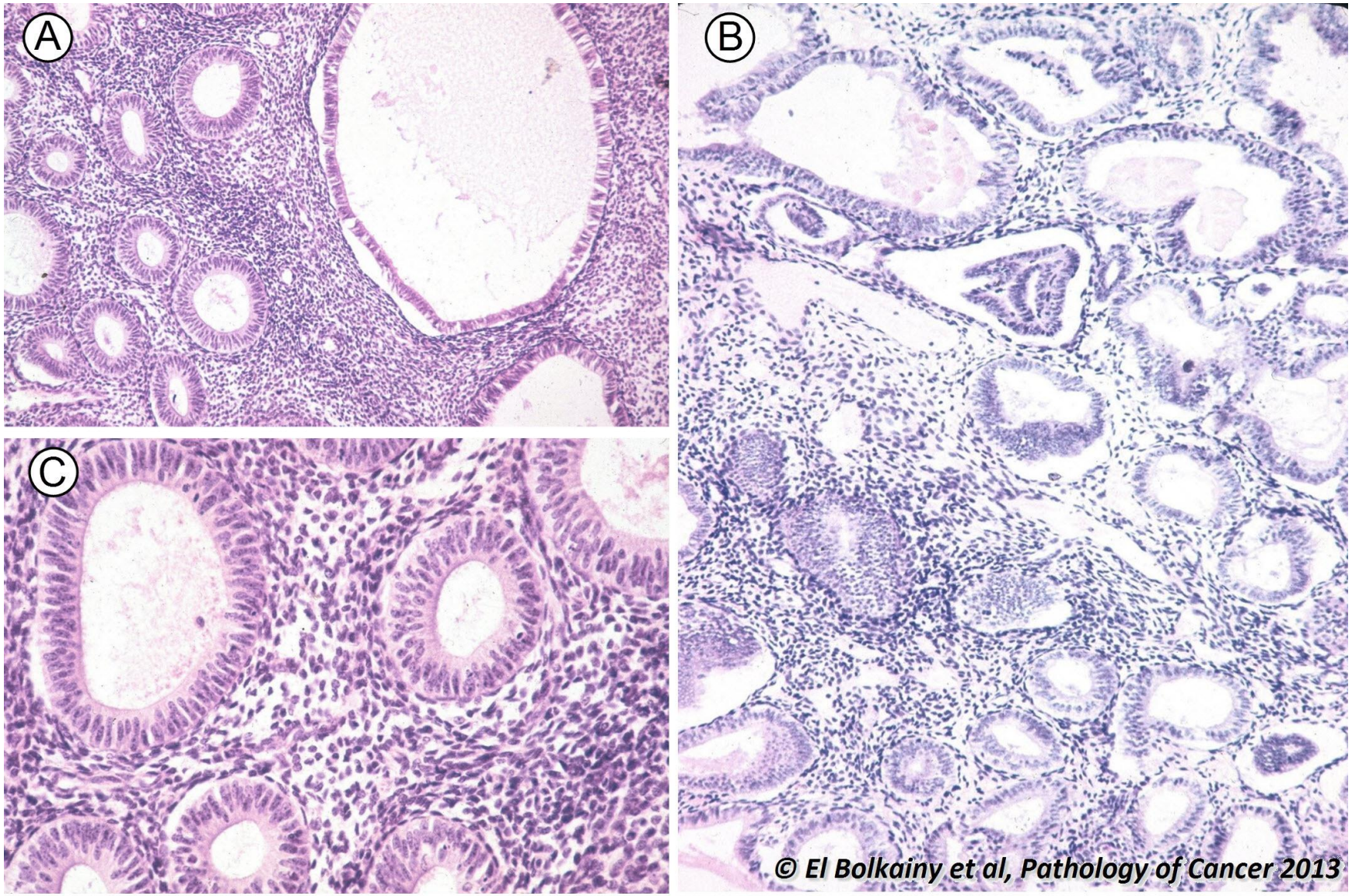
Picture 17-66 **Endometrial carcinoma, serous, type II, histology.** A prominent papillary pattern with side branches, irregular luminal border lined by highly atypical cells with loss of polarity, exfoliated single cells in lumen. Immunostains: p53+ (80%), p16+ but ER and PR negative. Contrary to ovarian serous carcinomas,endometrial carcinoma type II is WT1 negative. **A** Low power. **B** High power.

17.67 Endometrial carcinoma, clear cell type, histology.



Picture 17-67 **Endometrial carcinoma, clear cell type, histology.** The cells are arranged in **A** tubulocystic, **B** solid and papillary patterns, frequently with clear and hobnail cells. This variant is difficult to differentiate from serous subtypes (both are negative for ER and PR).The presence of cytoplasmic microglobules and absence of micropapillae favors endometrial clear type.

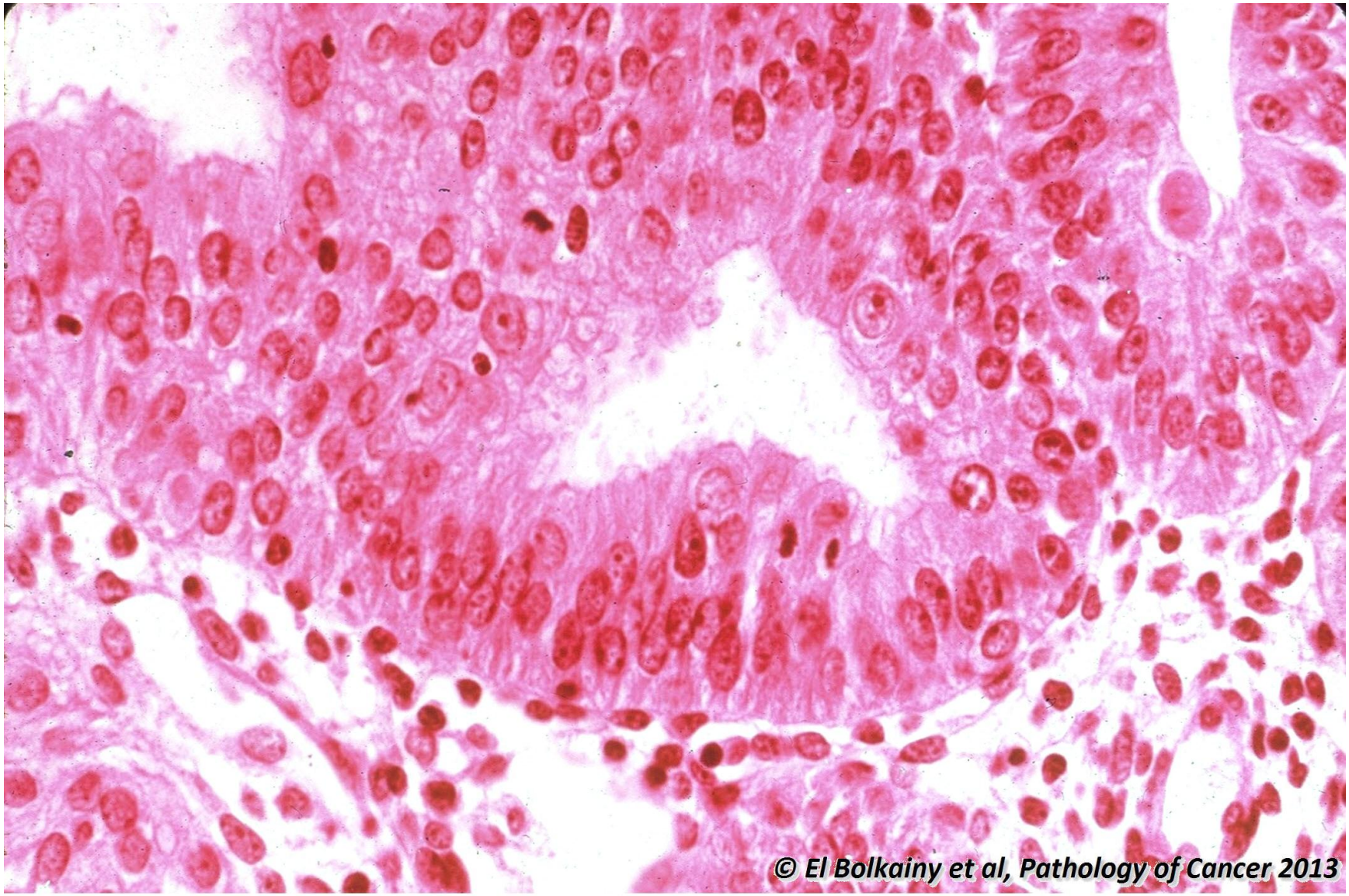
17.68 Endometrial hyperplasia, histology.



Picture 17-68

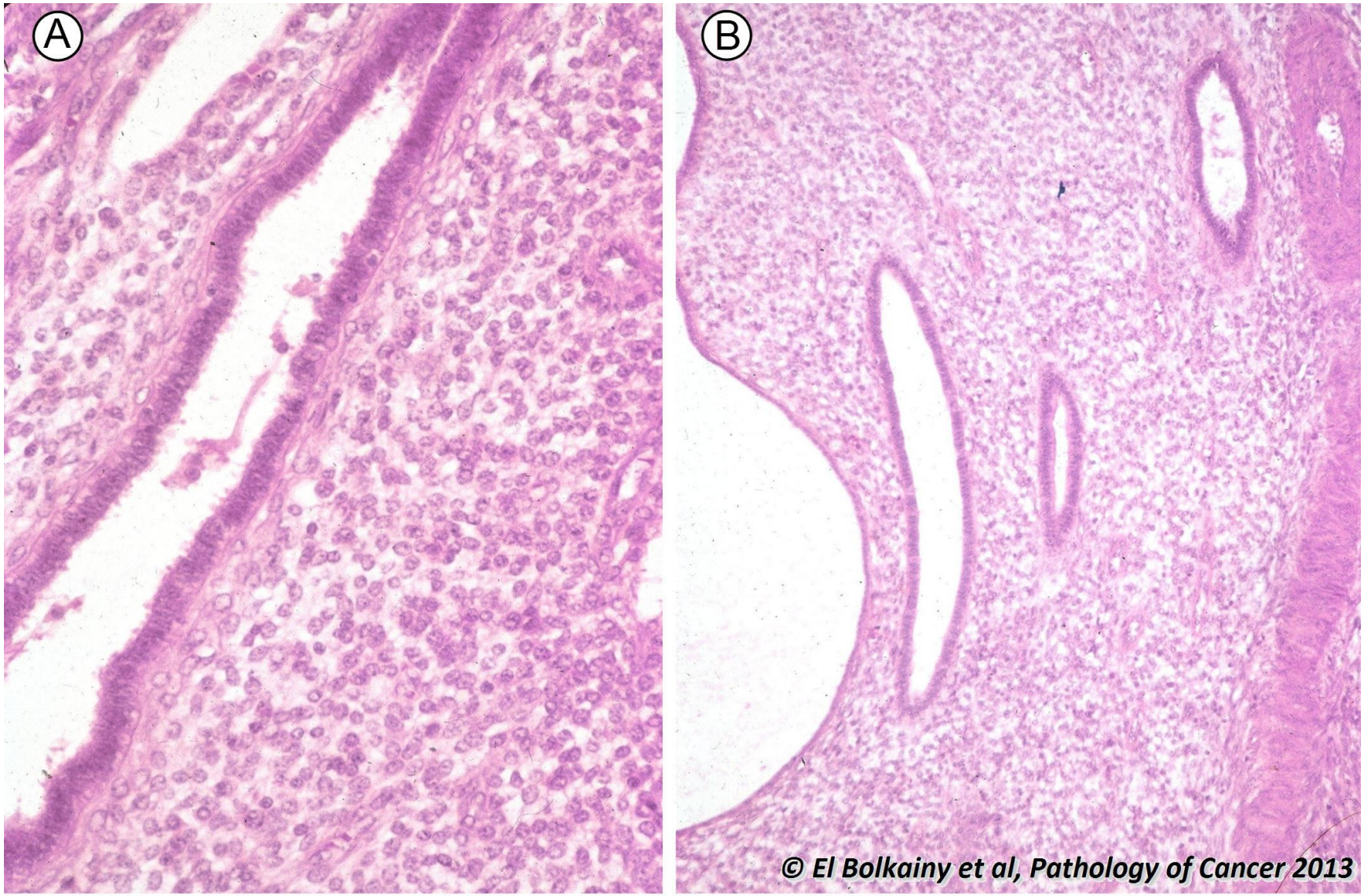
Endometrial hyperplasia, histology. A Simple hyperplasia, low power. There is increased gland to stroma ratio, oval glands with budding, pseudostratified cell lining. There is prominent cystic change in one of the hyperplastic glands. **B** Simple hyperplasia, high power. Cellular atypia is absent and endometrial stroma still evident inbetween the glands. **C** Complex hyperplasia, There is increased gland to stroma ratio, the glands are crowded and branching, but no cytologic atypia.

17.69 Atypical endometrial hyperplasia, histology.



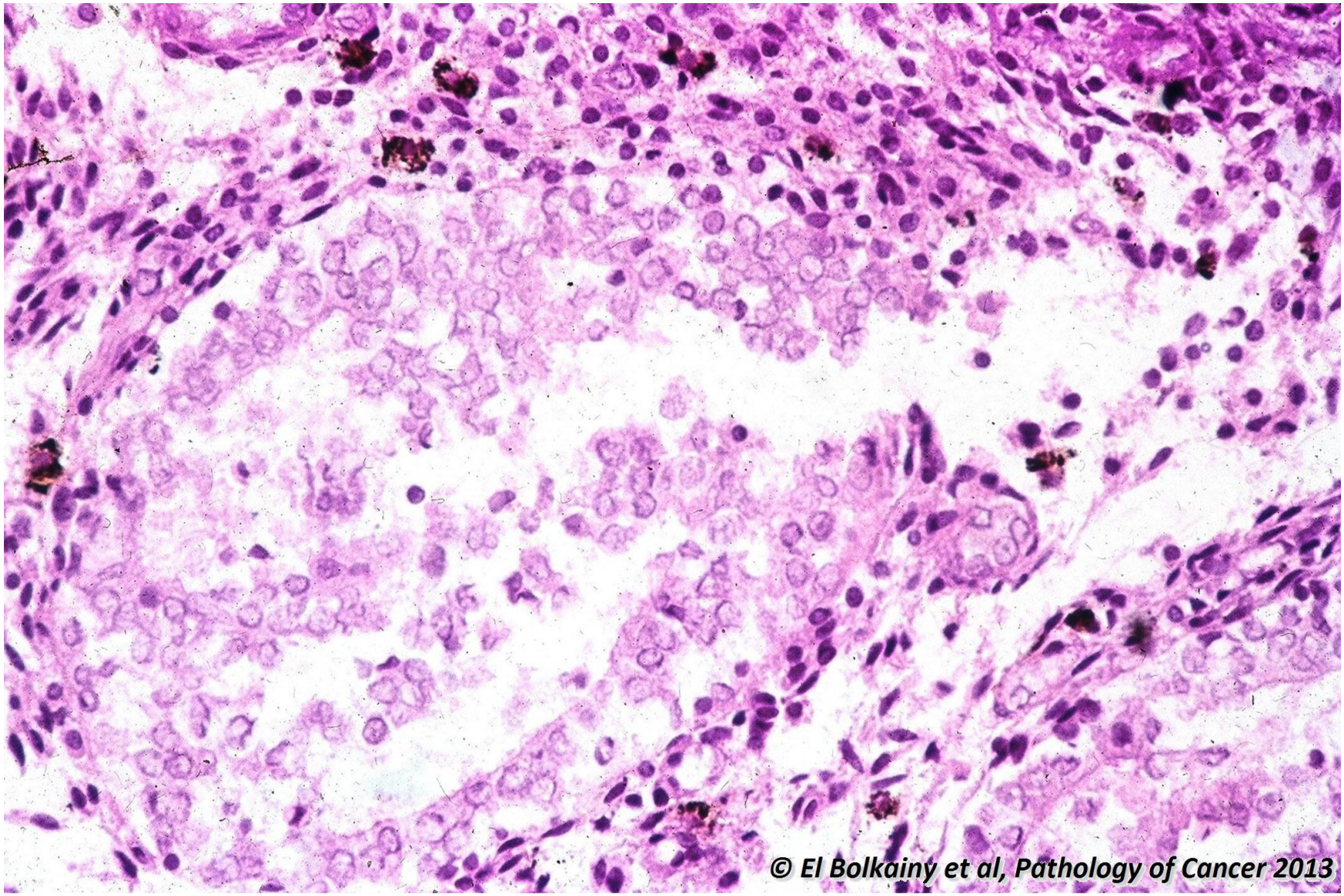
Picture 17-69 **Atypical endometrial hyperplasia, histology.** Nuclear atypia is present in some glands (large nuclei, vesicular, prominent nucleoli and loss of polarity) but stromal cells are still observed inbetween the glands. However, malignant glands without stroma, 1 mm in size, are considered intraepithelial neoplasia (CIS).

17.70 Endometrial hyperplasia, Tamoxifen-related, histology.



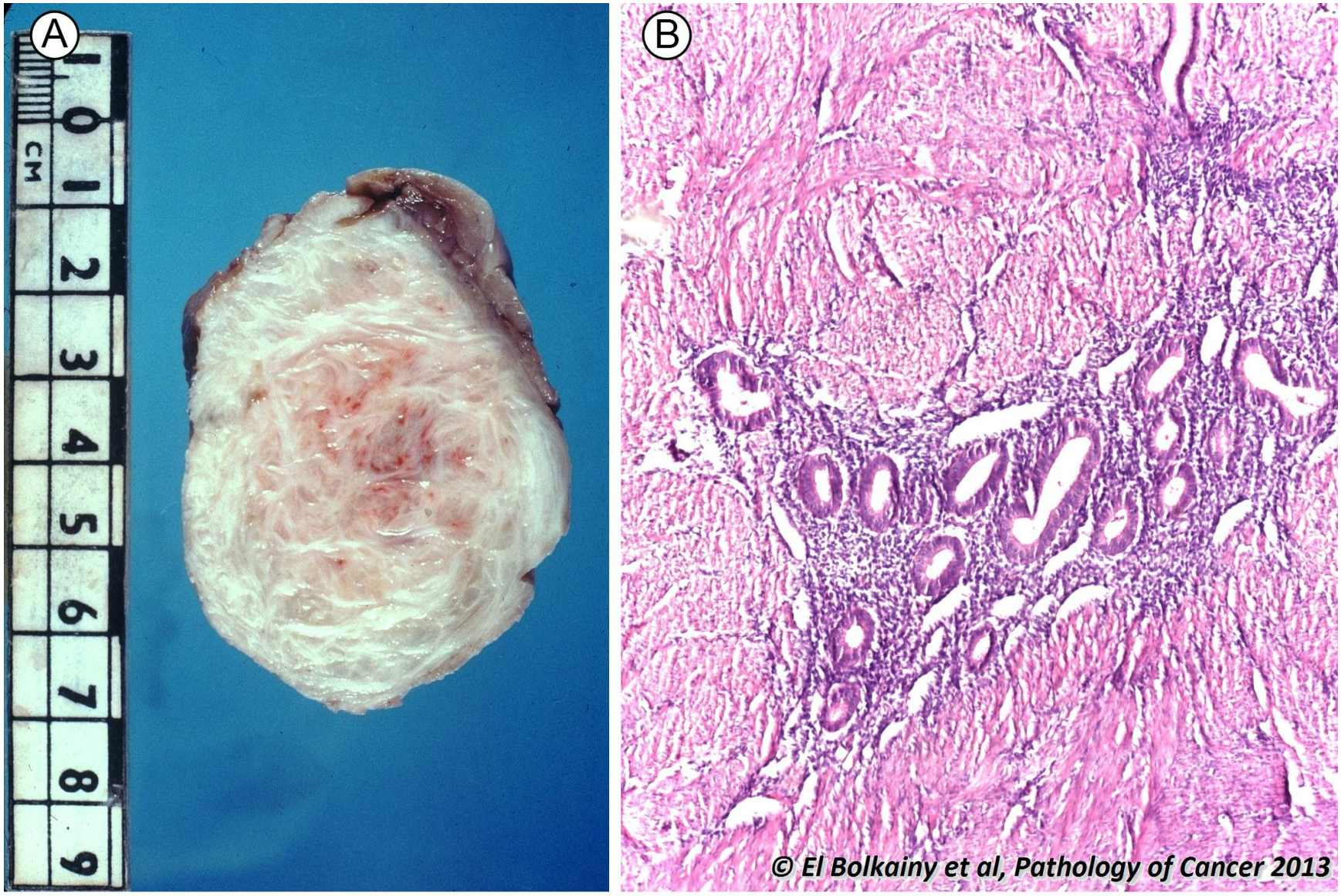
Picture 17-70 **Endometrial hyperplasia, Tamoxifen-related, histology. A** and **B** There is endometrial hyperplasia with cystic change and polyps formation. This is a reaction to the estrogenic-like effect of Tamoxifen. These changes may be rarely complicated by endometrial adenocarcinoma, hence, the importance of follow-up.

17.71 Endometrial hyperplasia, intrauterine device-related, histology.



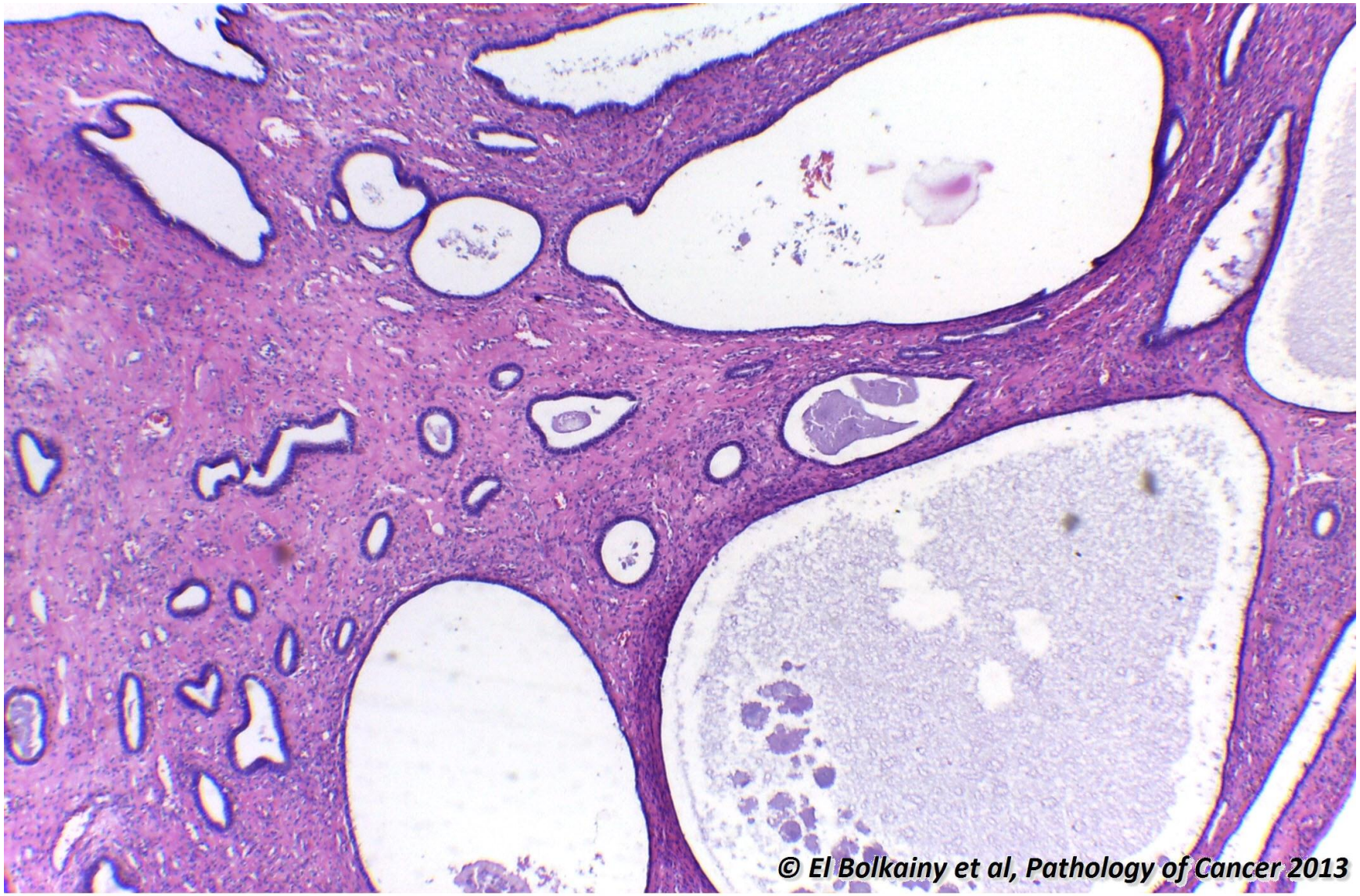
Picture 17-71 **Endometrial hyperplasia, intrauterine device-related, histology.** The trauma induced by the coil results in endometrial hyperplasia, polyposis, cystic change, hemosiderin and fibrosis in the stroma.

17.72 Myometrium, adenomyoma, histology.



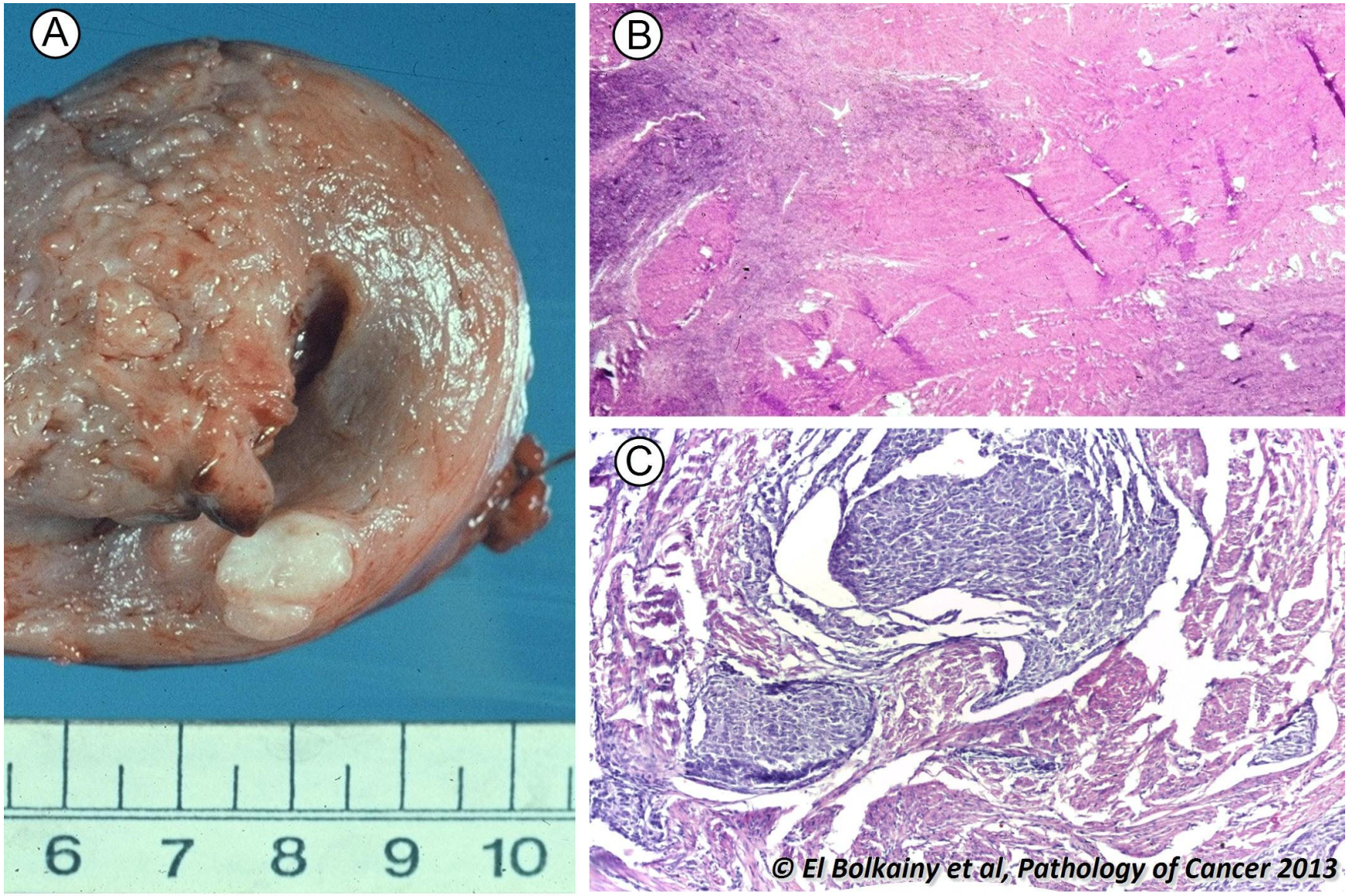
Picture 17-72 **Myometrium, adenomyoma, histology.** **A** Gross appearance, a well-fined trabeculated greyish white mass. **B** A benign biphasic tumor composed of two cellular elements; endometrial glands and smooth muscle, but no cellular atypia or mitosis.

17.73 Myometrium, adenofibroma, histology.



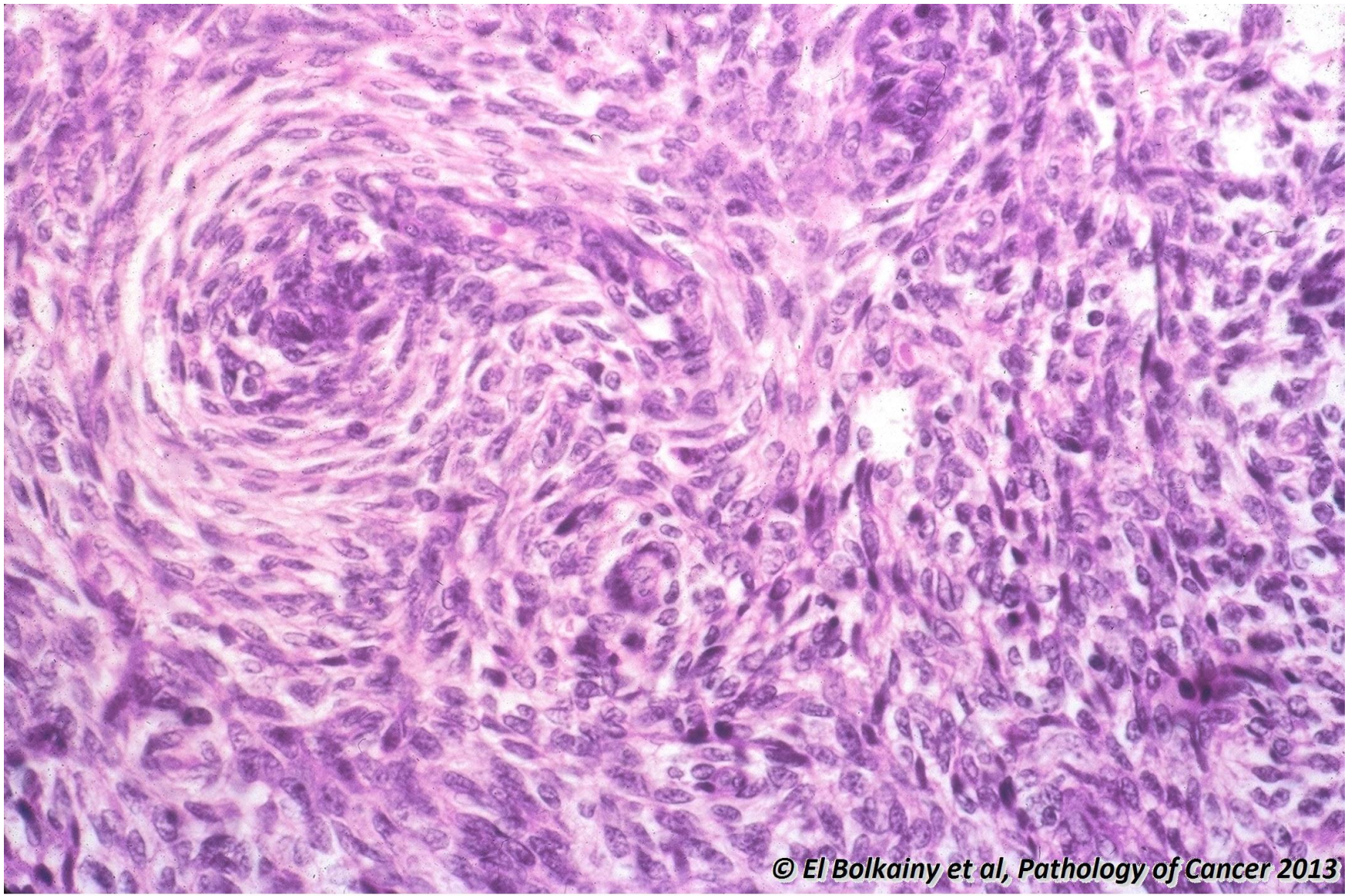
Picture 17-73 **Myometrium, adenofibroma, histology.** A biphasic benign tumor of mullerian origin composed of two cell types, namely: glandular epithelium and fibrocytes, both are benign.

17.74 Myometrium, endometrial stromal sarcoma, low grade.



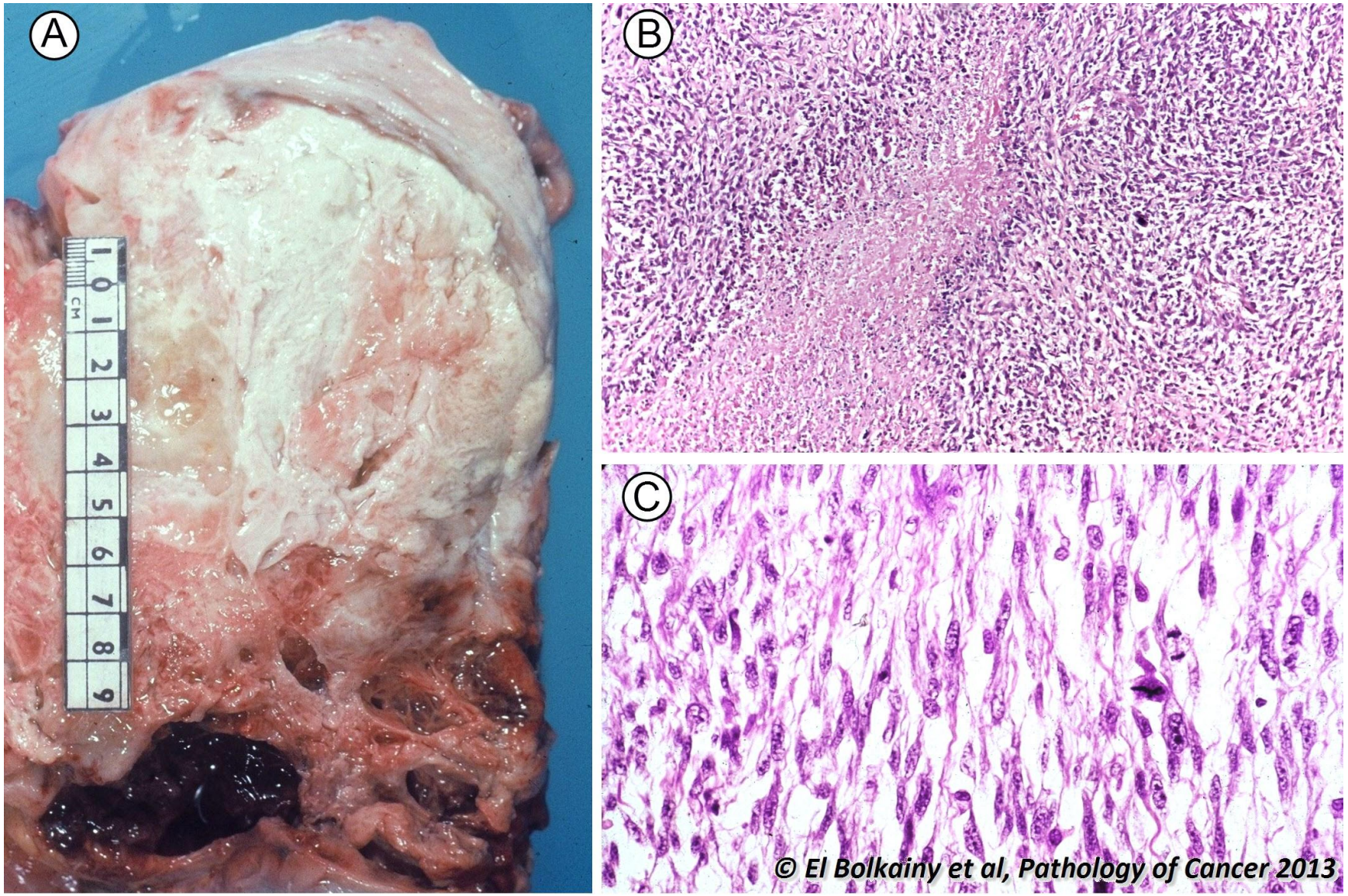
Picture 17-74 **Myometrium, endometrial stromal sarcoma, low grade. A** Gross, grey white tongue-like nodules invading the myometrium. **B** and **C** Histology, islands of spindle cells permeate inbetween muscle bundles of myometrium, as well as, invade lymphatics and veins, have low mitotic activity (< 5/ 10 HPF). Immunostains: CD10, ER, PR positive. Differential diagnosis: benign endometrial stromal nodule is well-defined non-invasive lesion.

17.75 Myometrium, endometrial stromal sarcoma, histology of low grade tumor, high power.



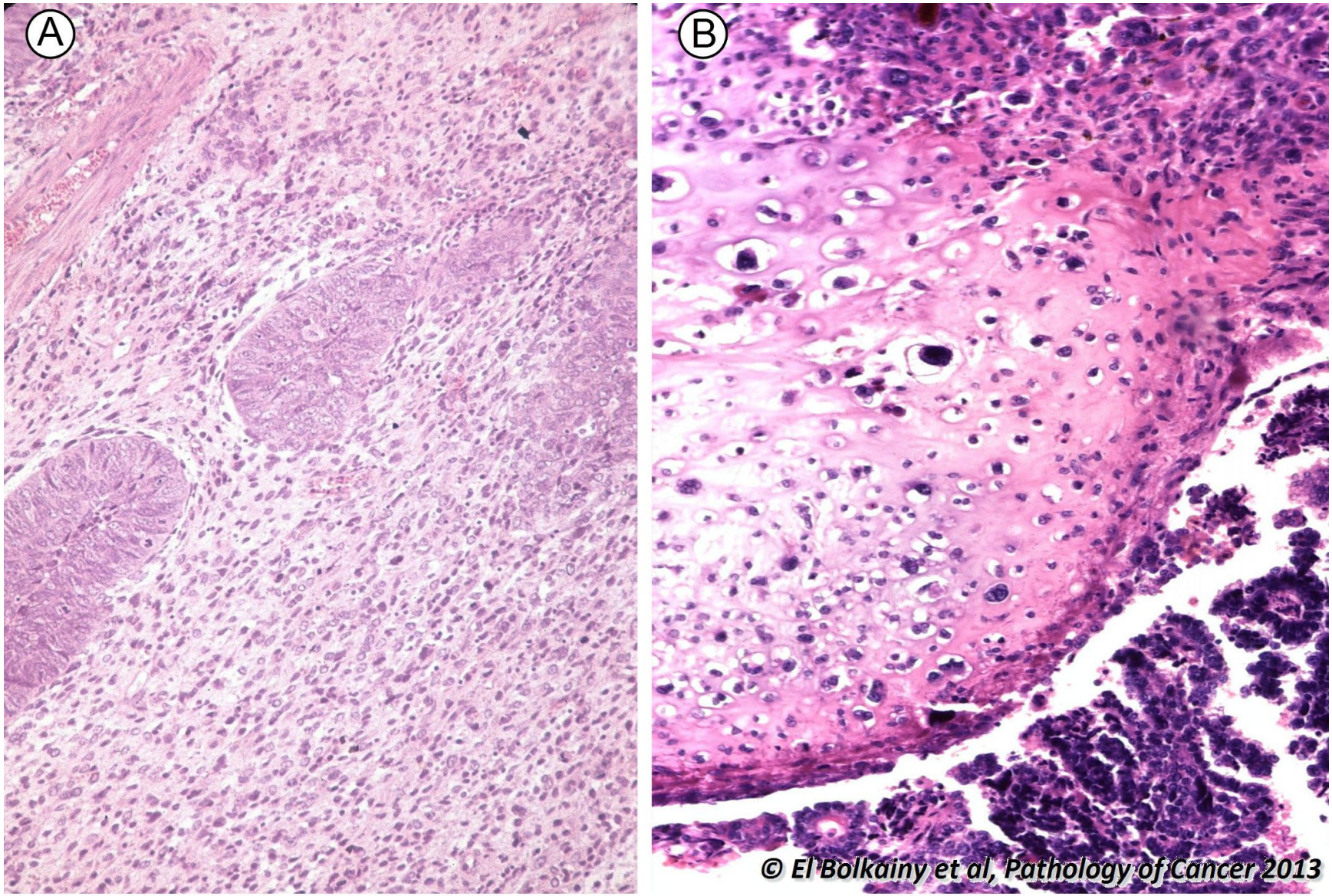
Picture 17-75 **Myometrium, endometrial stromal sarcoma, histology of low grade tumor, high power.** Note the resemblance of spindle cells to endometrial stromal cells and the minimal anaplasia and mitosis. High-grade tumors are more cellular, mitotically active (>5 / 10 HPF) and may show necrotic areas. Immunostains: CD10, ER, PR positivity, actin and desmin negative.

17.76 Myometrium, leiomyosarcoma.



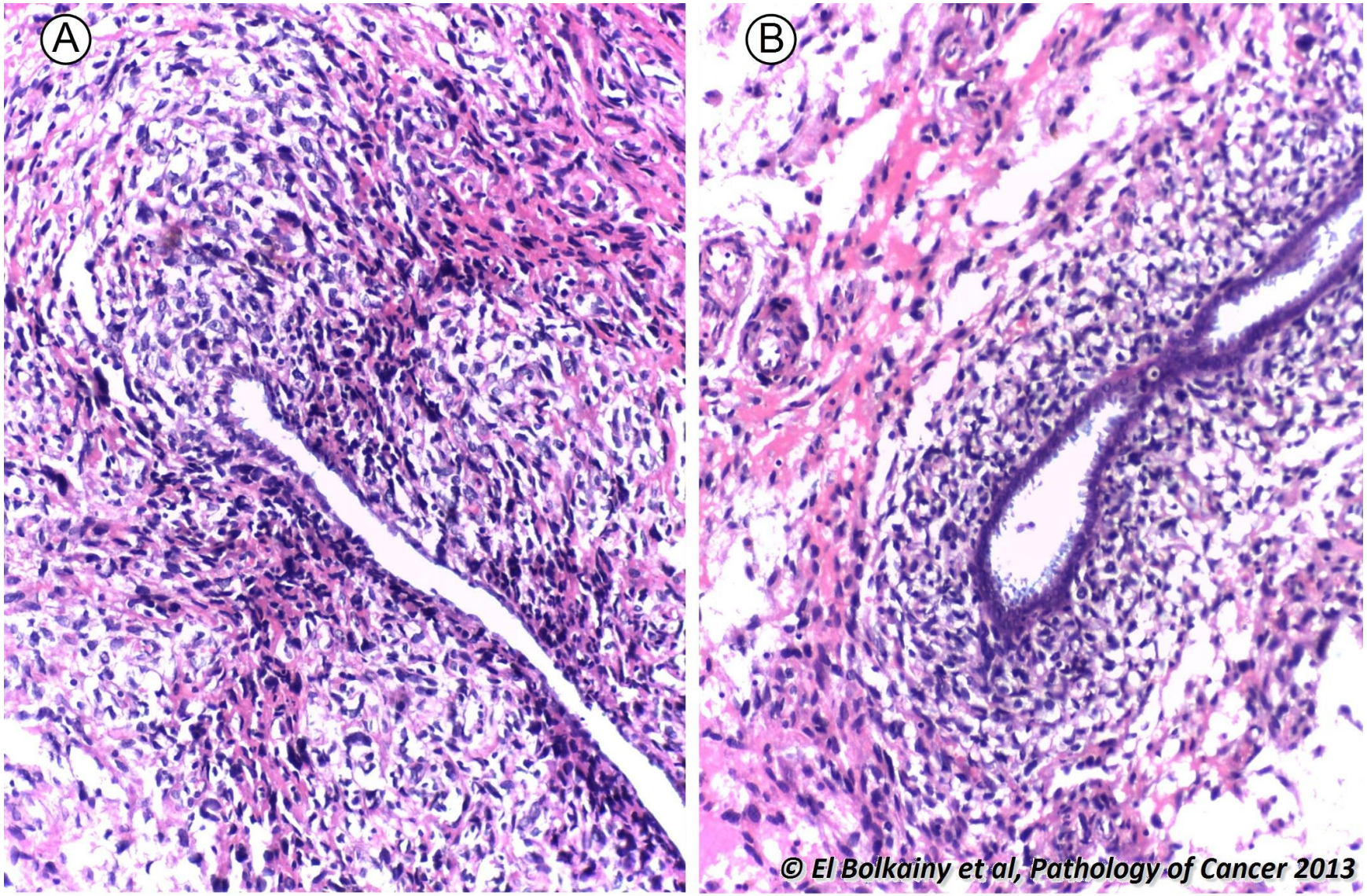
Picture 17-76 **Myometrium, leiomyosarcoma. A** Gross, a large mass (10 cm) gray color with focal hemorrhage and necrosis, soft in consistency (pitting) and the margin invades the myometrium. **B** Histology, hypercellular tumor with focal necrosis. **C** High power, active mitosis (> 10/ 10 HPF) and abnormal mitosis. Immunostains: actin and desmin positivity.

17.77 Myometrium, mllerian carcinosarcoma, histology.



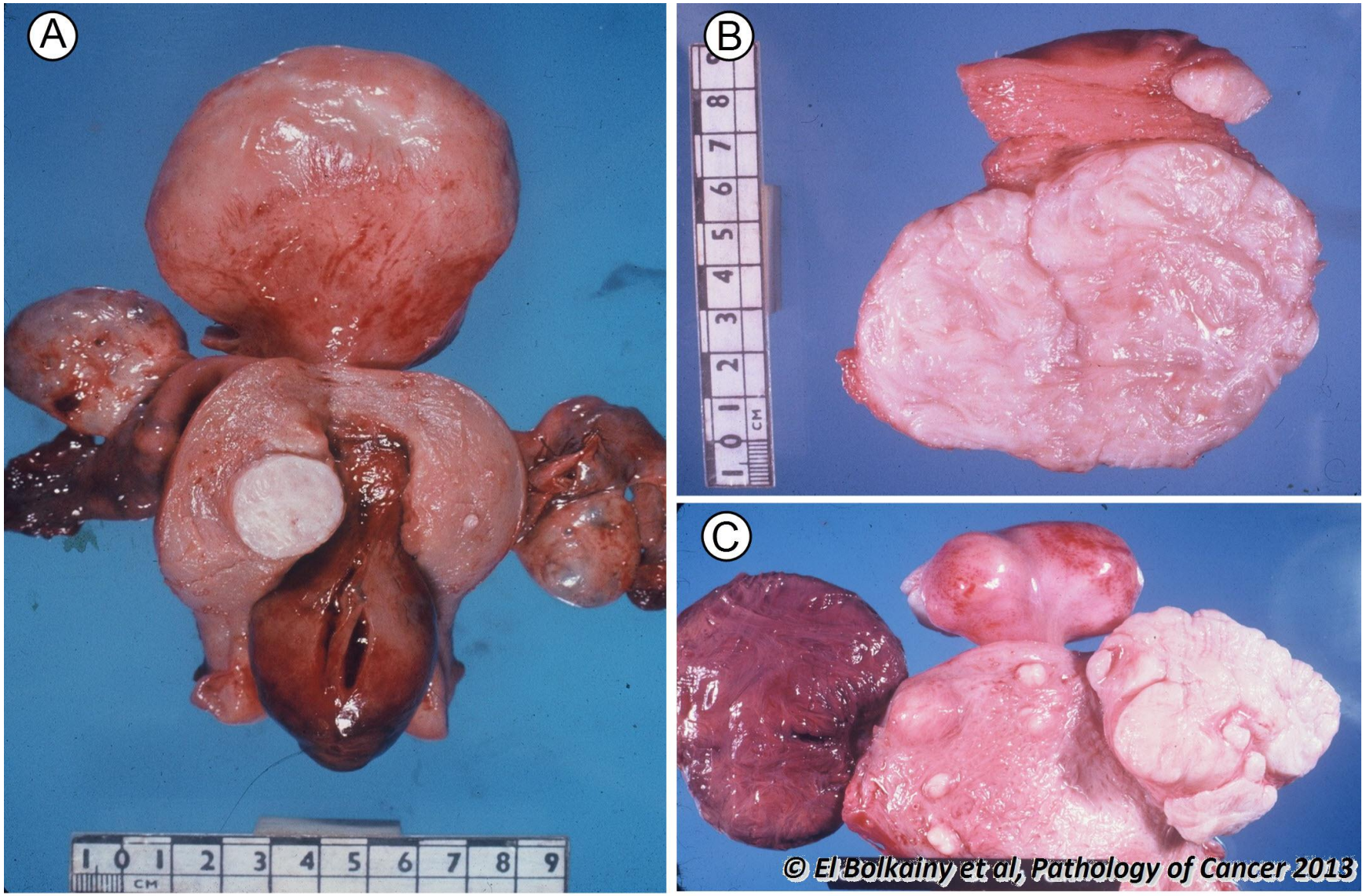
Picture 17-77 **Myometrium, mullerian carcinosarcoma, histology.** A multiphasic highly malignant tumor of mullerian origin, in which all cellular elements are malignant. The mesenchymal component may be **A** native to the location or homologus (fibrosarcoma or leimyosarcoma), or **B** foreign (heterologus) to the uterus (rhabdomyosarcona, chondrosarcoma and osteosarcoma).

17.78 Myometrium, mllerian adenosarcoma, histology.



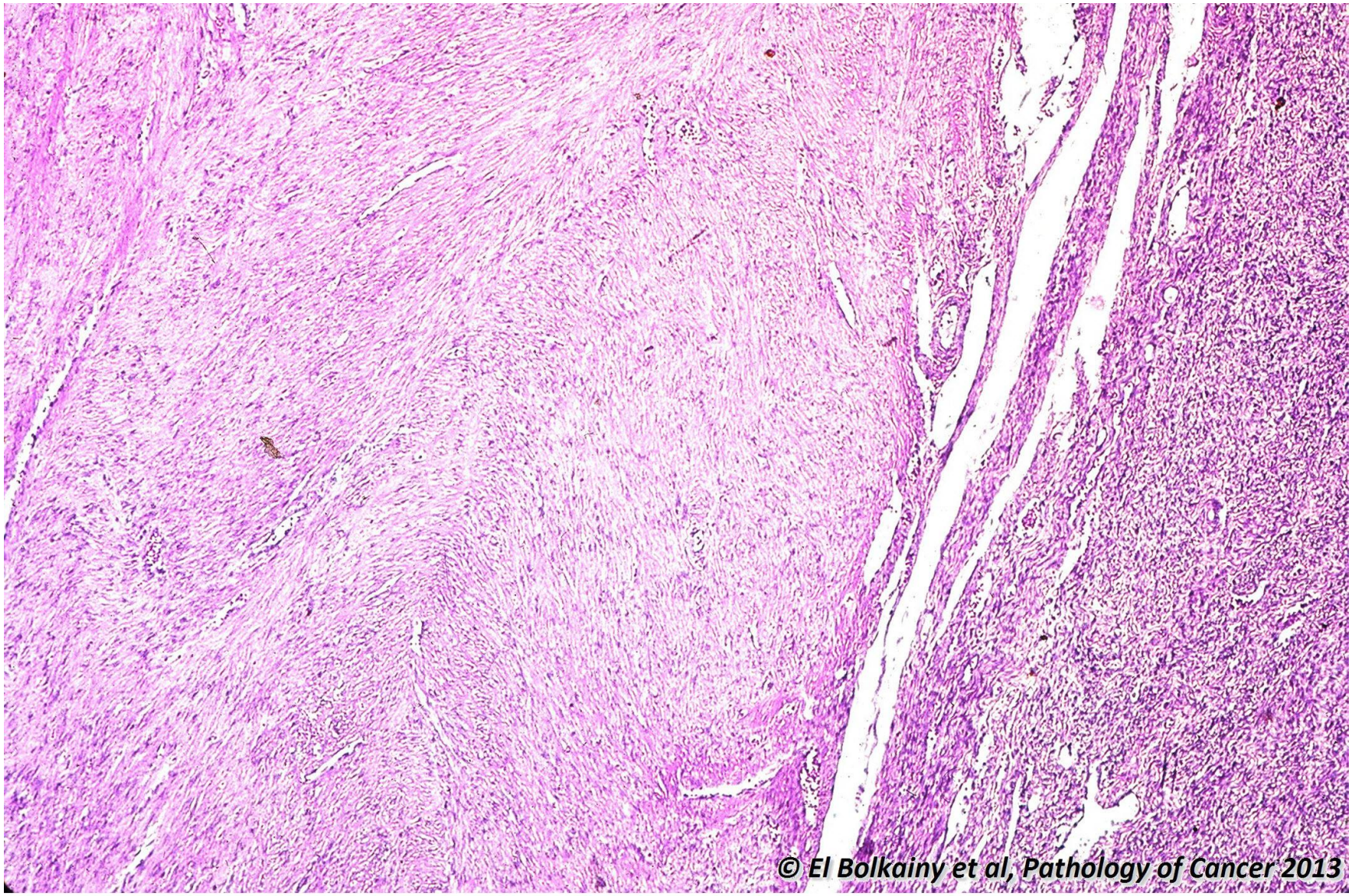
Picture 17-78 **Myometrium, mullerian adenosarcoma, histology.** A biphasic tumor of mullerian origin composed of two cell types, namely: a benign epithelial component and a malignant sarcomatous component. Any mitotic activity (> 2/ 10 HPF) is considered a feature of stromal malignancy. Also, if the stromal component exceeds 25% of the tumor or invade myometrium. **A** Low power. **B** High power.

17.79 Myometrium, leiomyomas, gross features.



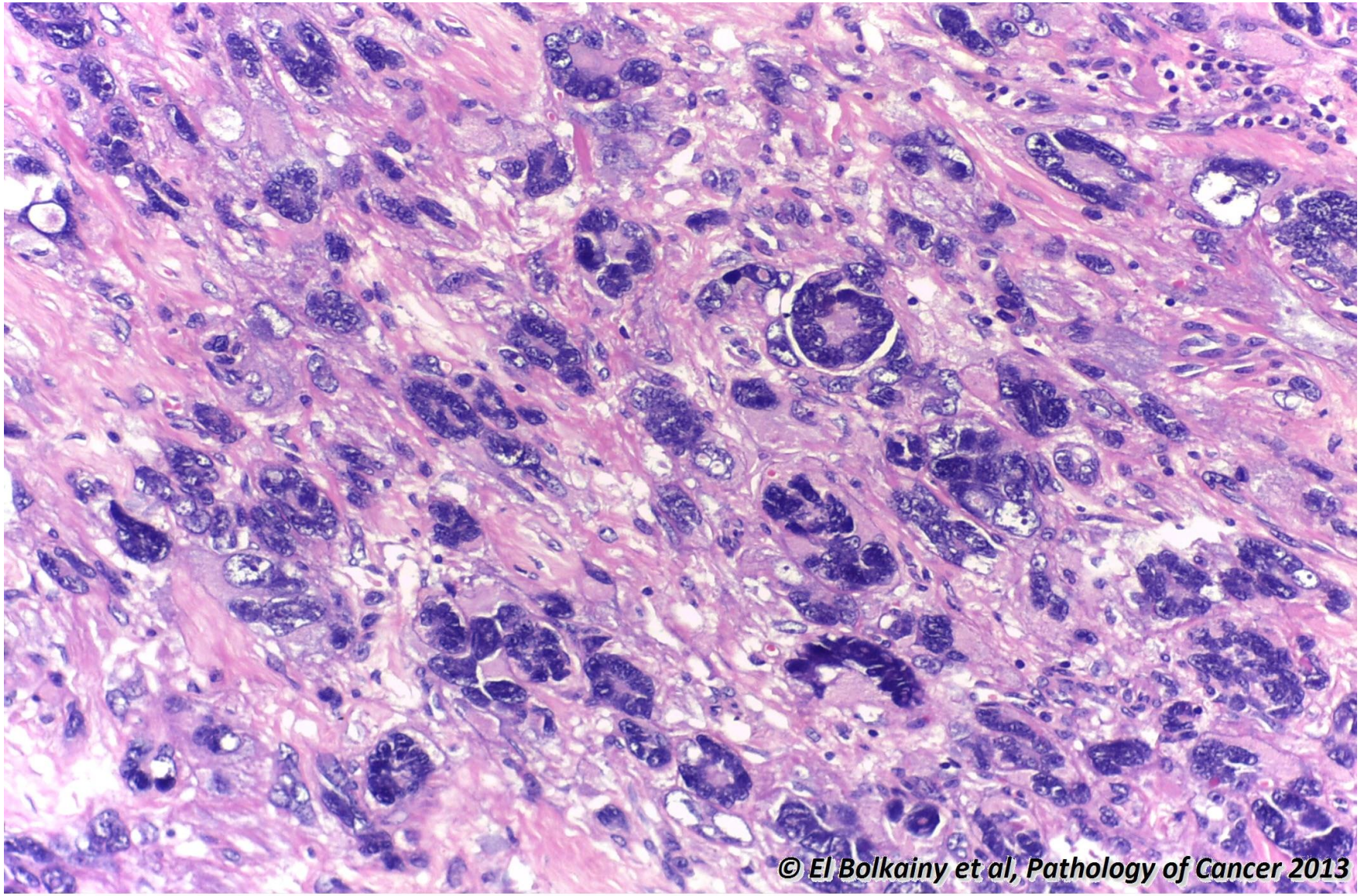
Picture 17-79 **Myometrium, leiomyomas, gross features. A** Multiple leiomyomas, subserous, mural and submucous, the latter is strangulated. **B** and **C** Cut section of leiomyoma, a white trabeculated tumor, firm (non-pitting), well-defined and separate from myometrium (can be shelled-out).

17.80 Myometrium, leiomyoma, histology.



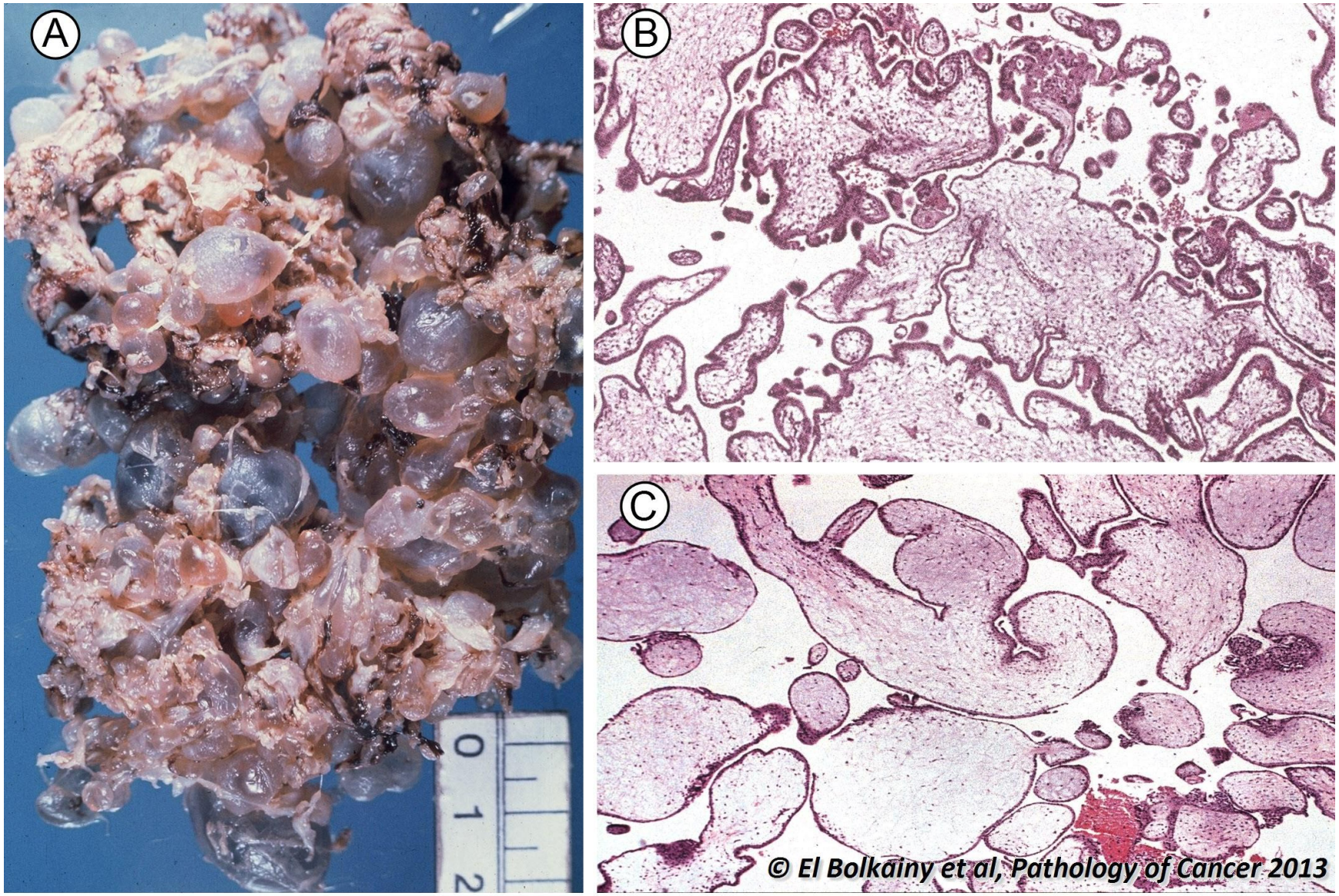
Picture 17-80 **Myometrium, leiomyoma, histology.** A well-defined tumor with a space between it and endometrium. It is composed of interdigitating bundles of smooth muscle with fibrosis. Mitotic activity is low (< 5/10 HPF). Cellular leiomyomas and mitotically active leiomyomas (5-10/ 10 HPF) must be carefully followed-up because of some risk of local recurrence.

17.81 Myometrium, leiomyoma with bizarre nuclei (symplastic), histology.



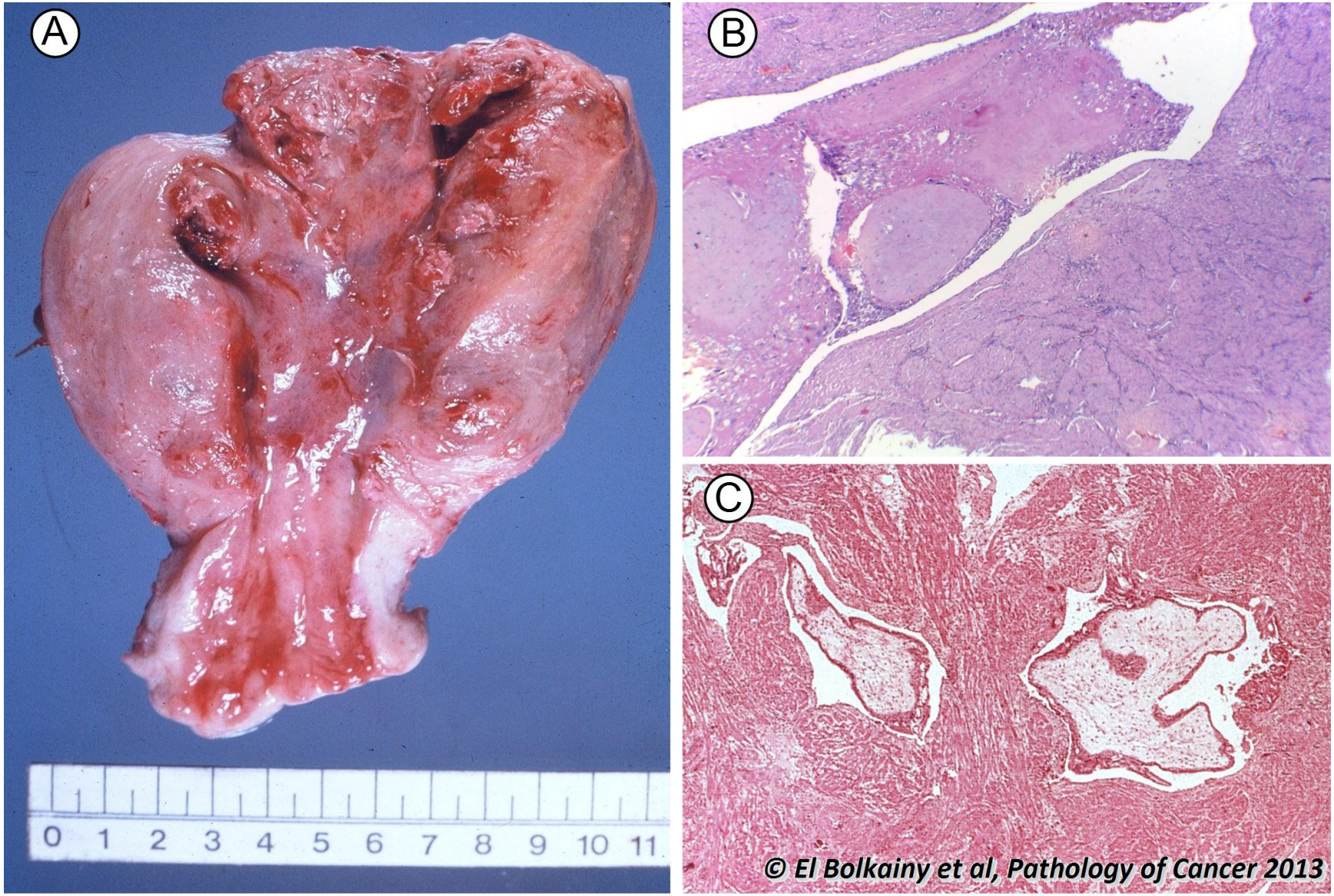
Picture 17-81 **Myometrium, leiomyoma with bizzare nuclei (symplastic), histology.** It shows pleomorphic hyperchromatic nuclei with smudged chromatin, nuclear inclusions and multinucleated giant cells. The molecular mechanism is hypermethylation of DNA and increase of heterochromatin. It differs from leiomyosarcoma in being a local phenomenon in the tumor as well as, the low mitotic activity (< 5/ 10 HPF).

17.82 Hydatidiform moles.



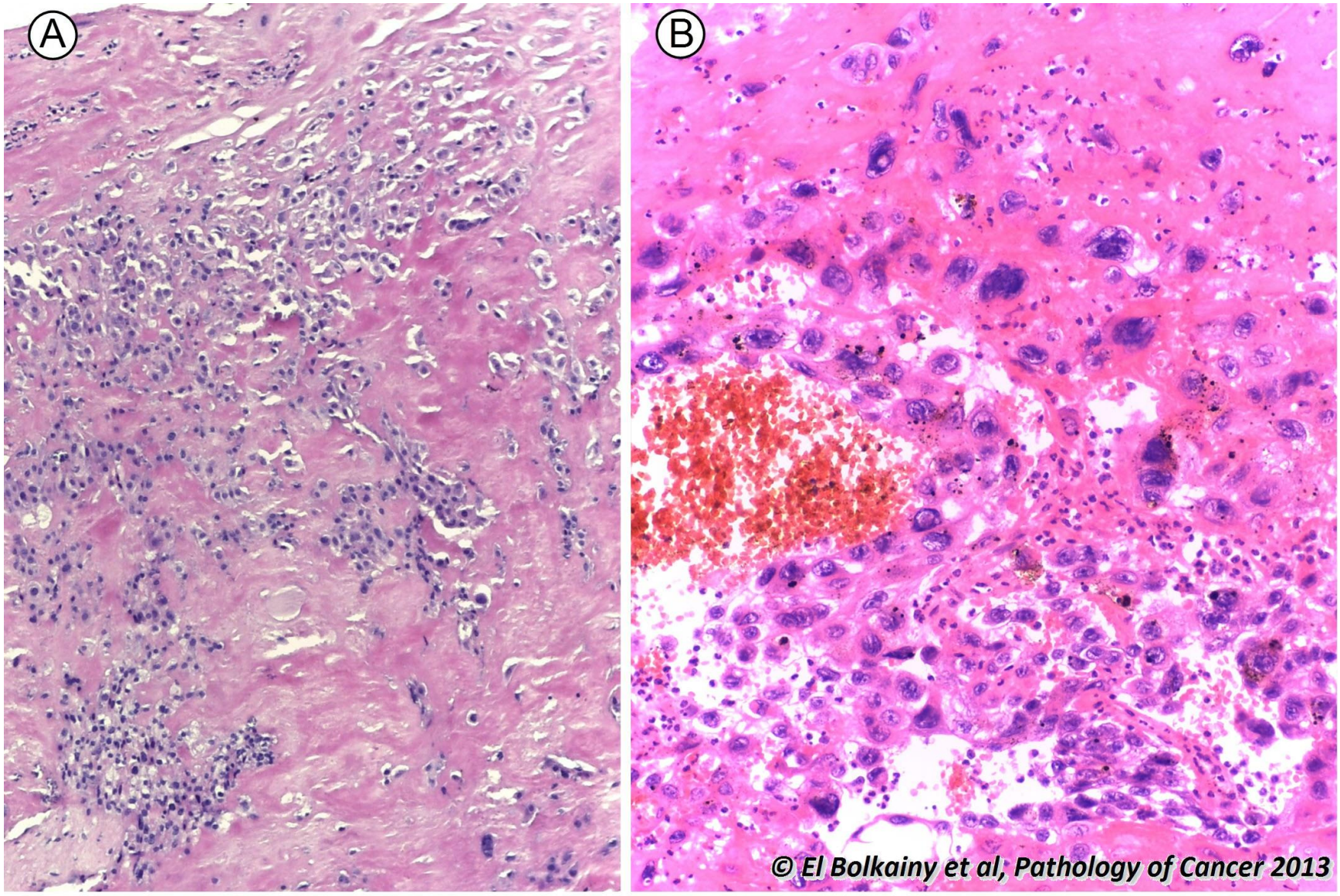
Picture 17-82 **Hydatidiform moles. A** Gross, cystically dilated chorionic villi (microvesicles). **B** Partial mole, both small and large villi are present, the latter show central cavitation in the stroma (cisterns). **C** Complete mole, composed of only markedly enlarged edematous avascular villi associated with marked surface trophoblastic proliferation.

17.83 Invasive mole (chorioadenoma destruens).



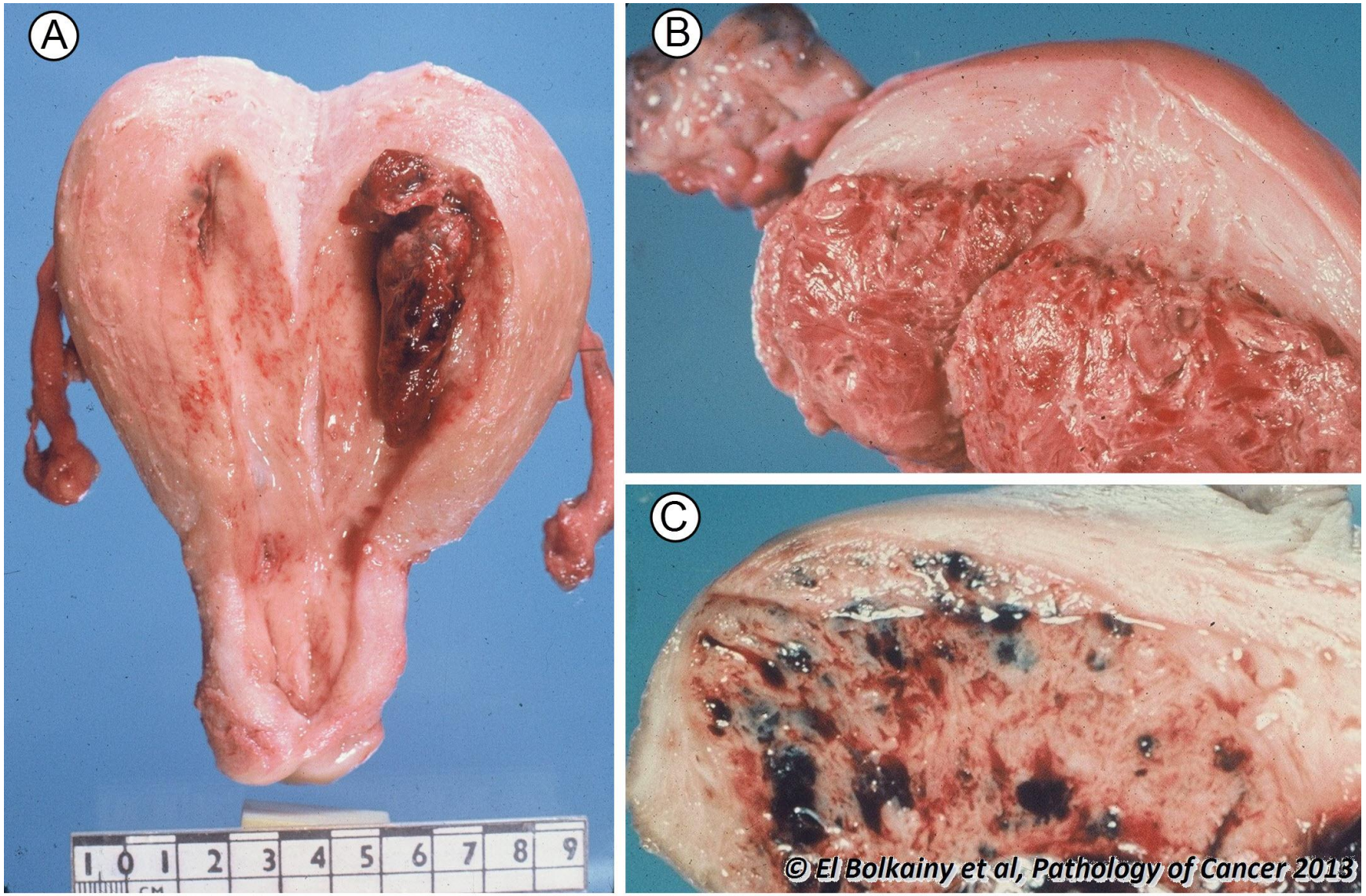
Picture 17-83 **Invasive mole (chorioadenoma destruens). A** Gross, a mass lesion attached to the myometrium could be detected preoperatively by sonography. **B** Histology, chorionic villi and trophoblastic cells are found permeating the myometrium.

17.84 Placental site trophoblastic tumor, histology.



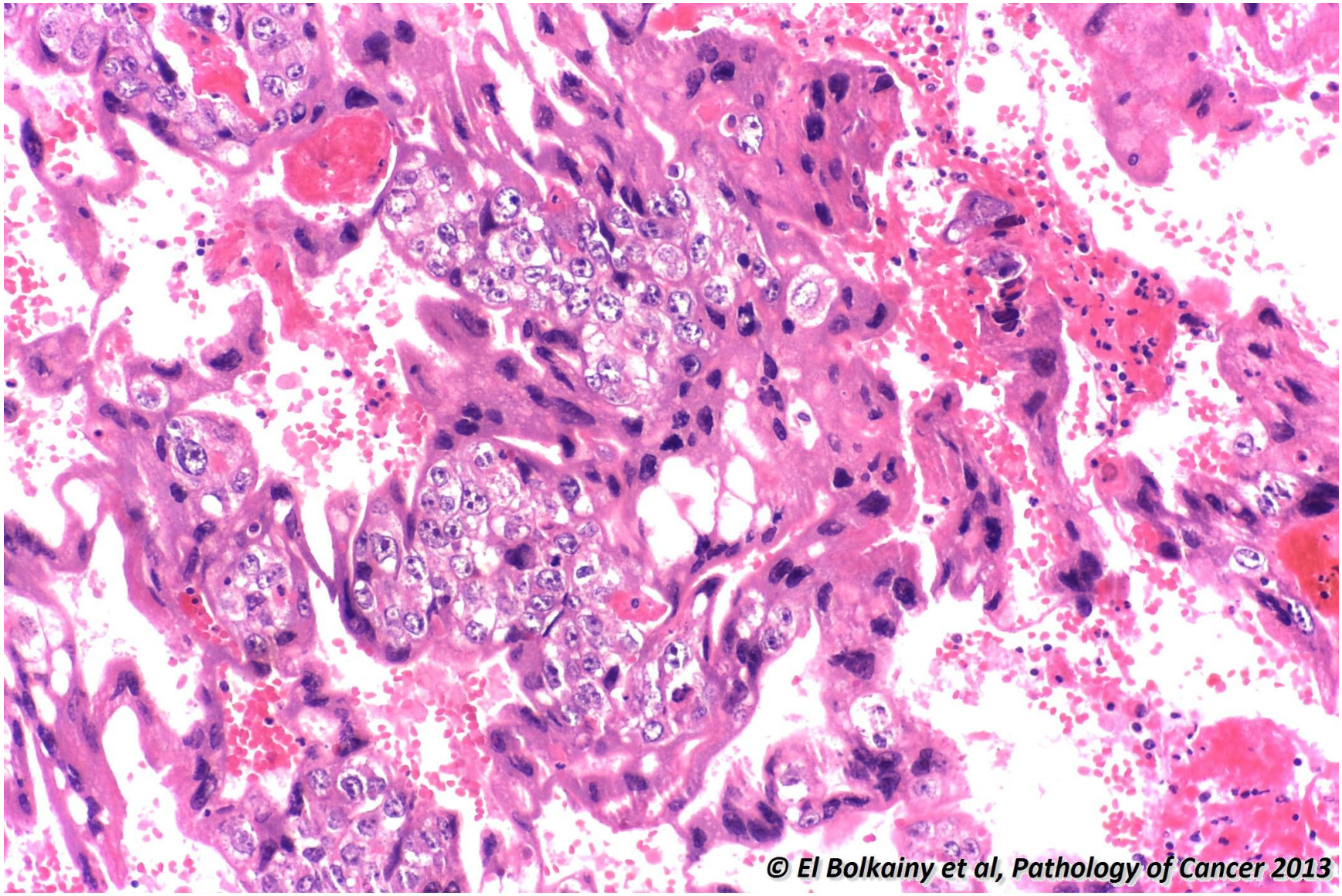
Picture 17-84 **Placental site trophoblastic tumor, histology.** Patients present by uterine bleeding, amenorrhea, a mass lesion by sonography and /or high serum β-HCG. Histologically, it is composed of intermediate trophoblasts only which infiltrate blood vessels and myometrium. Immunostains: human prolactin hpl, CK18 and inhibin positivity. **A** Low power. **B** High power.

17.85 Gestational choriocarcinoma, gross features.



Picture 17-85 **Gestational choriocarcinoma, gross features. A, B** and **C** A hemorrhagic necrotic tumor infiltrating the myometrium.

17.86 Gestational choriocarcinoma, histology.



Picture 17-86 **Gestational choriocarcinoma, histology.** The tumor shows marked hemorrhage and necrosis. Both syncytiotrophoblasts and cytotrophoblasts are evident (in absence of villi) . Immunostains: syncytiotrophoblasts positive for β-HCG, hpl and CK18, but, cytotrophoblasts are positive for CK18 only.