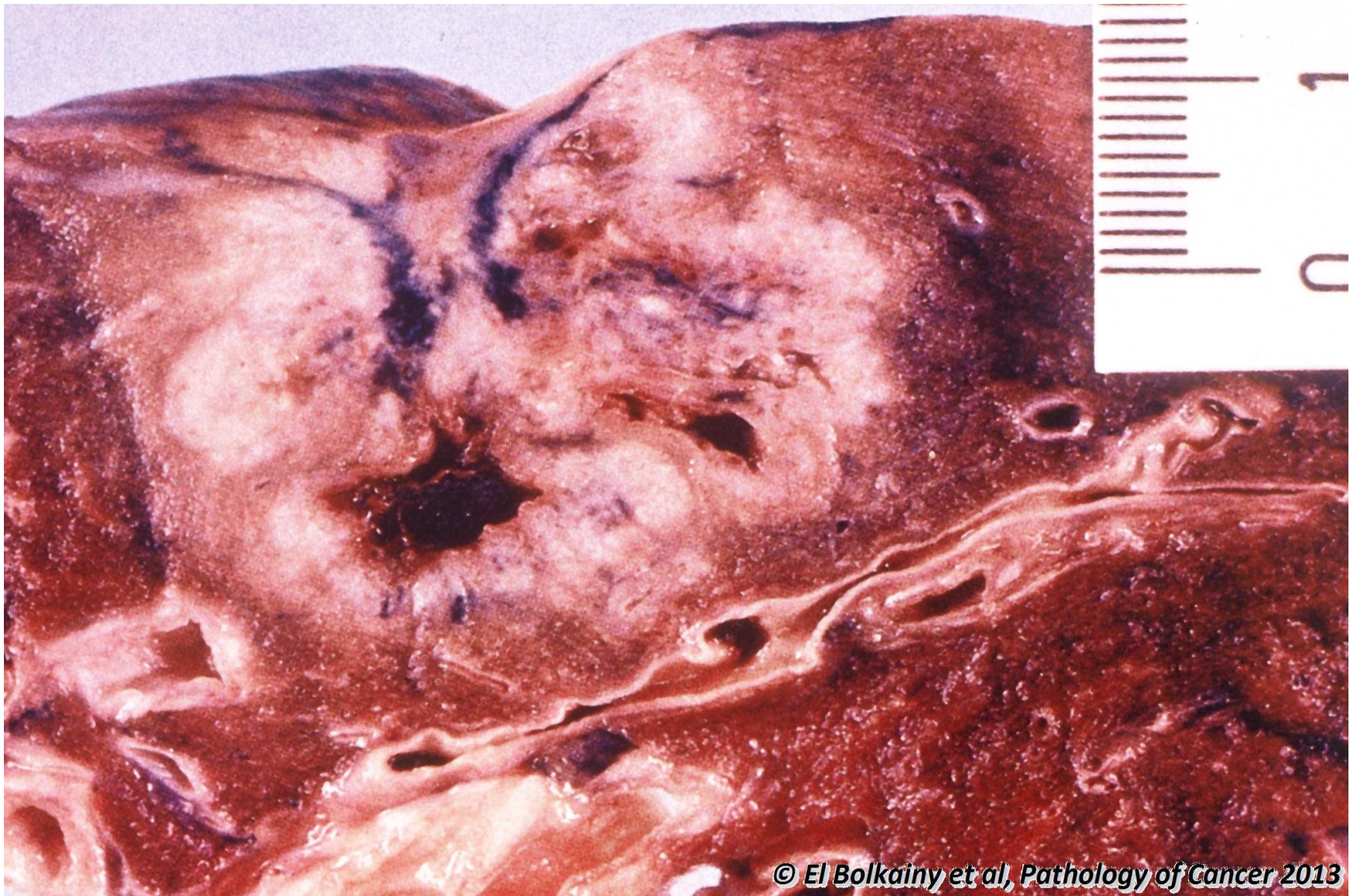


Chapter 10

Tumors of lower respiratory tract

10.1 Lung carcinoma, gross features.



Picture 10-1 Lung carcinoma, gross features. A lobectomy specimen showing a localized grey-white tumor mass with ill-defined periphery and central cavitation.

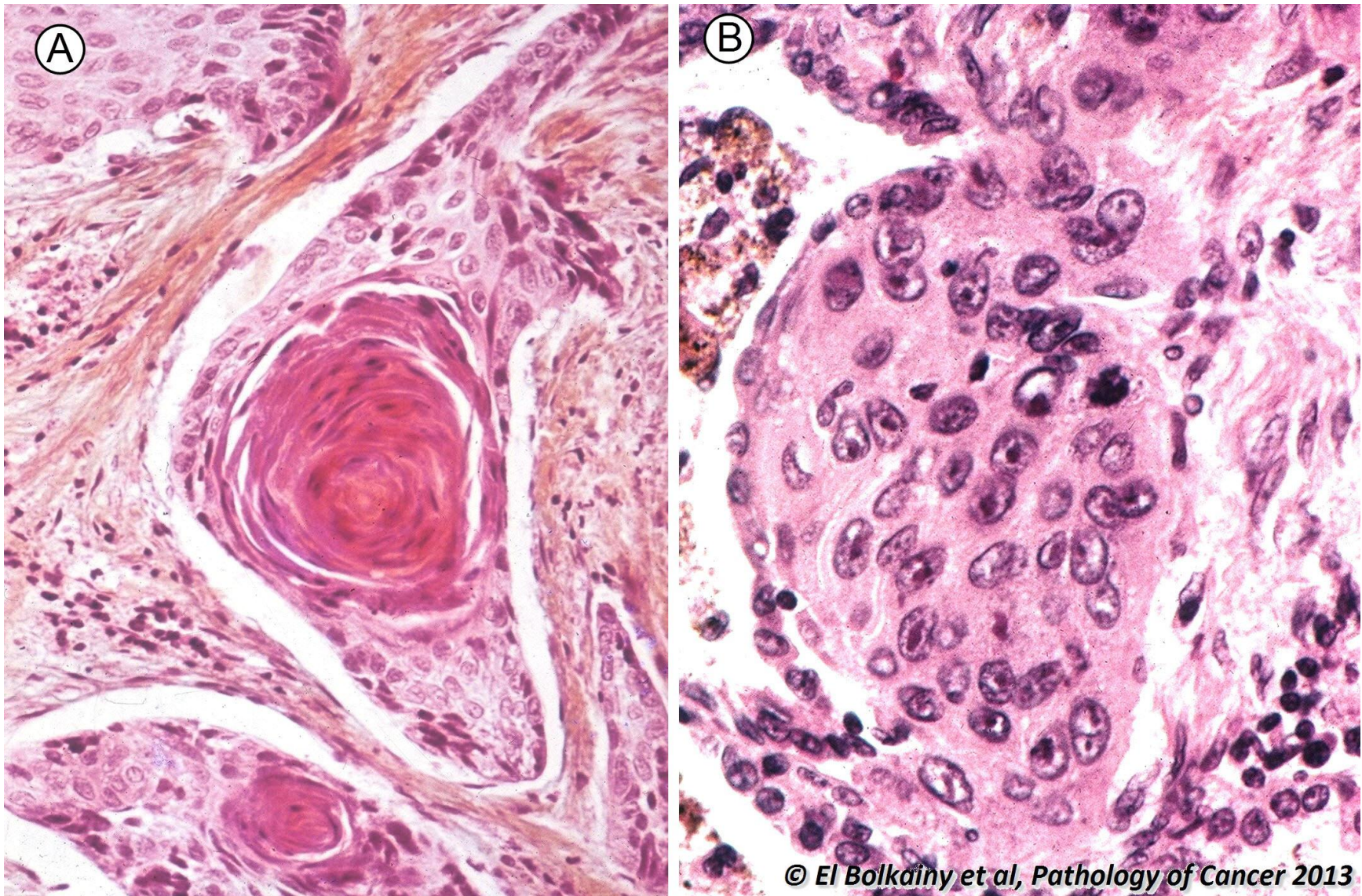
10.2 Lung carcinoma, gross features.



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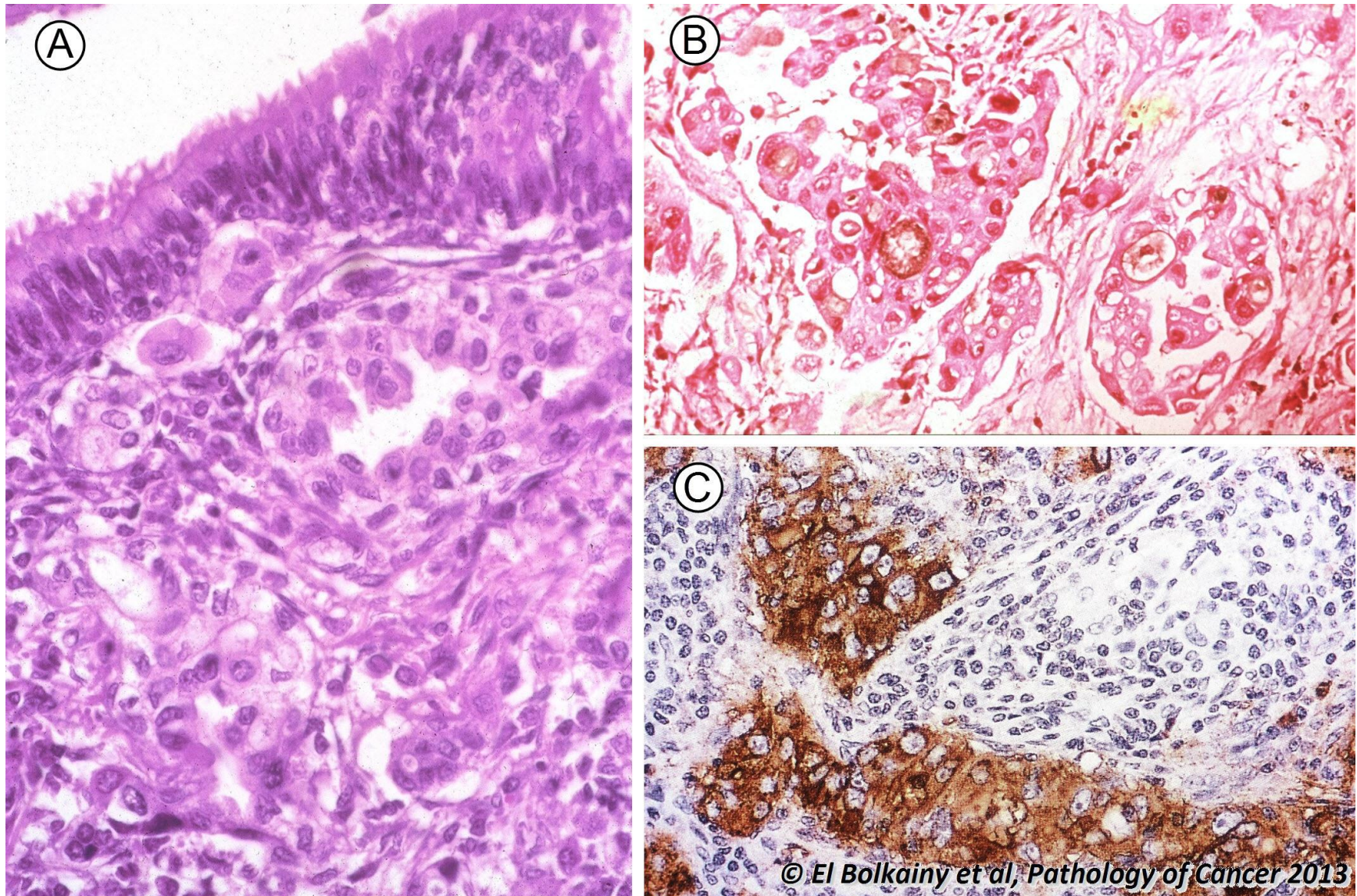
Picture 10-2 Lung carcinoma, gross features. A lobectomy specimen showing a diffuse pneumonic-like pattern usually seen in alveolar carcinoma.

10.3 Squamous cell carcinoma, histology.



Picture 10-3 Squamous cell carcinoma, histology. A well differentiated grade 1 carcinoma with keratotic cell nest. B Moderately differentiated grade 2 carcinoma.

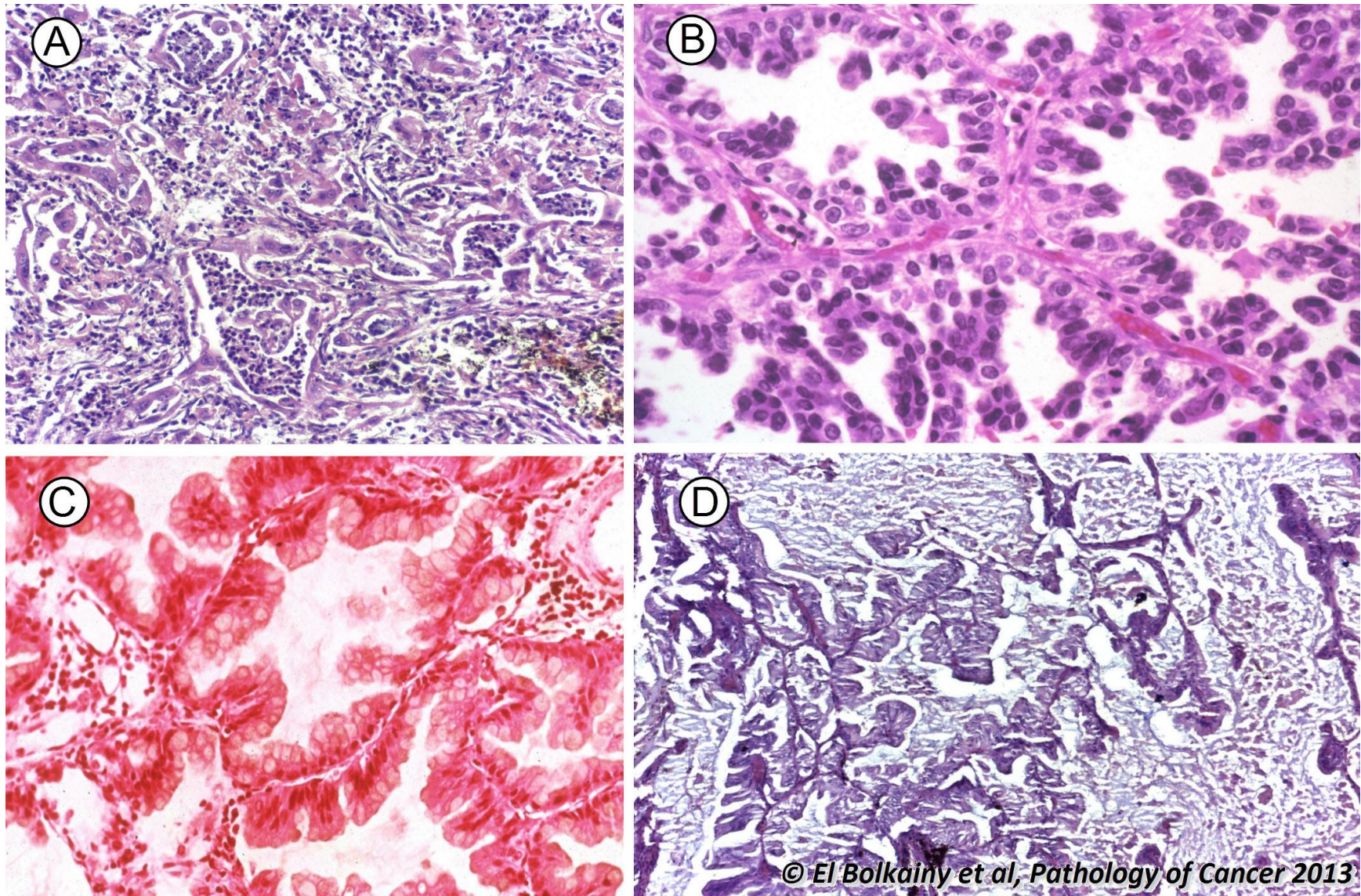
10.4 Adenocarcinoma, histology.



Picture 10-4 Adenocarcinoma, histology. **A** Acinar-type showing irregular glands infiltrating the stroma. **B** and **C** Solid type of adenocarcinoma with clear mucin in cytoplasm. Immunostain: (monoclonal CEA +).

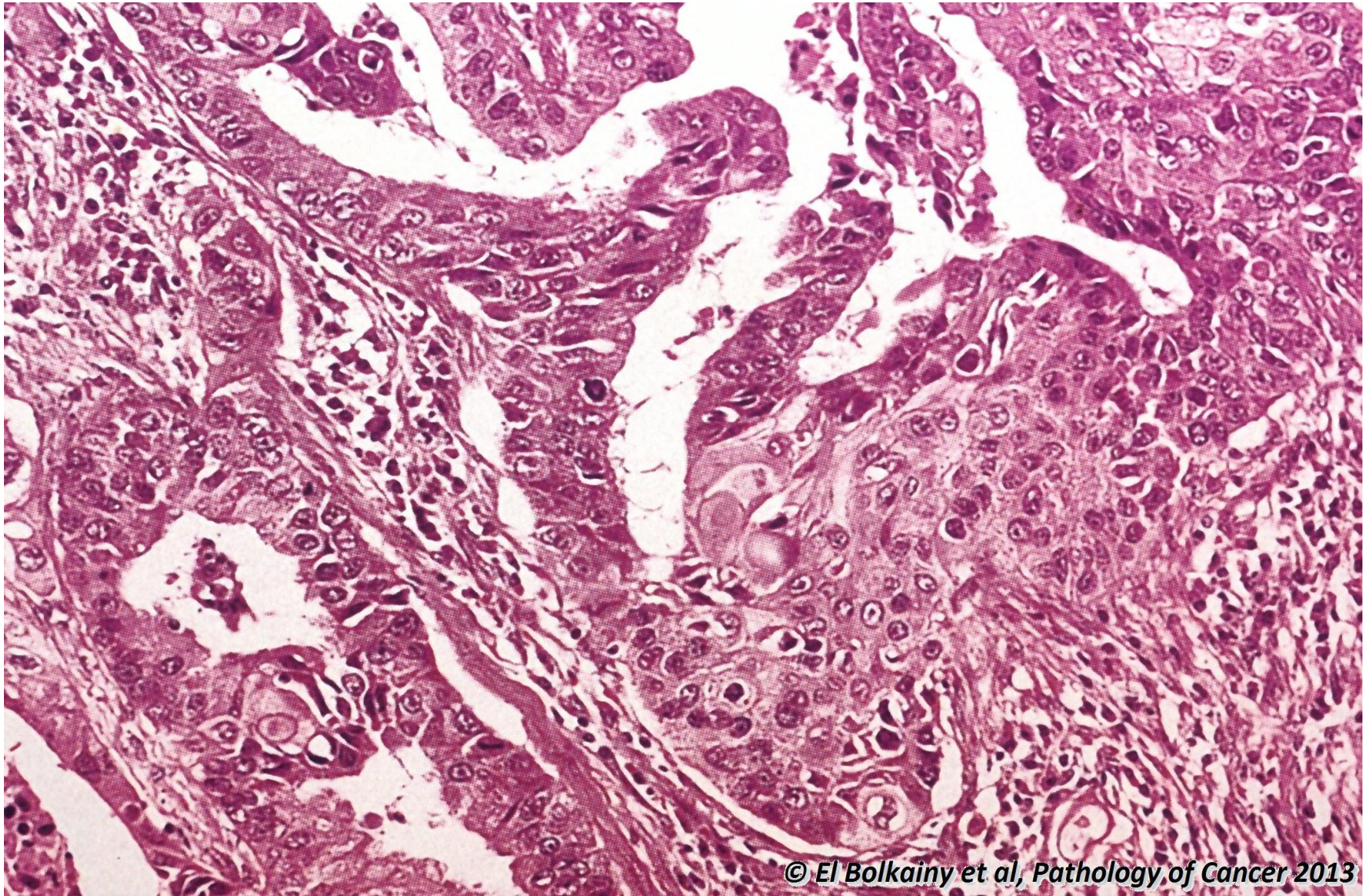
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10.5 Bronchioloalveolar carcinoma, histology.



Picture 10-5 Bronchioloalveolar carcinoma, histology. A and B Non-mucinous (75%), the malignant rounded cells with scant cytoplasm line the alveoli, but no evidence of alveolar wall or vascular invasion. C and D Mucinous-type (25%). The alveoli are lined by tall columnar cells with mucin in cytoplasm.

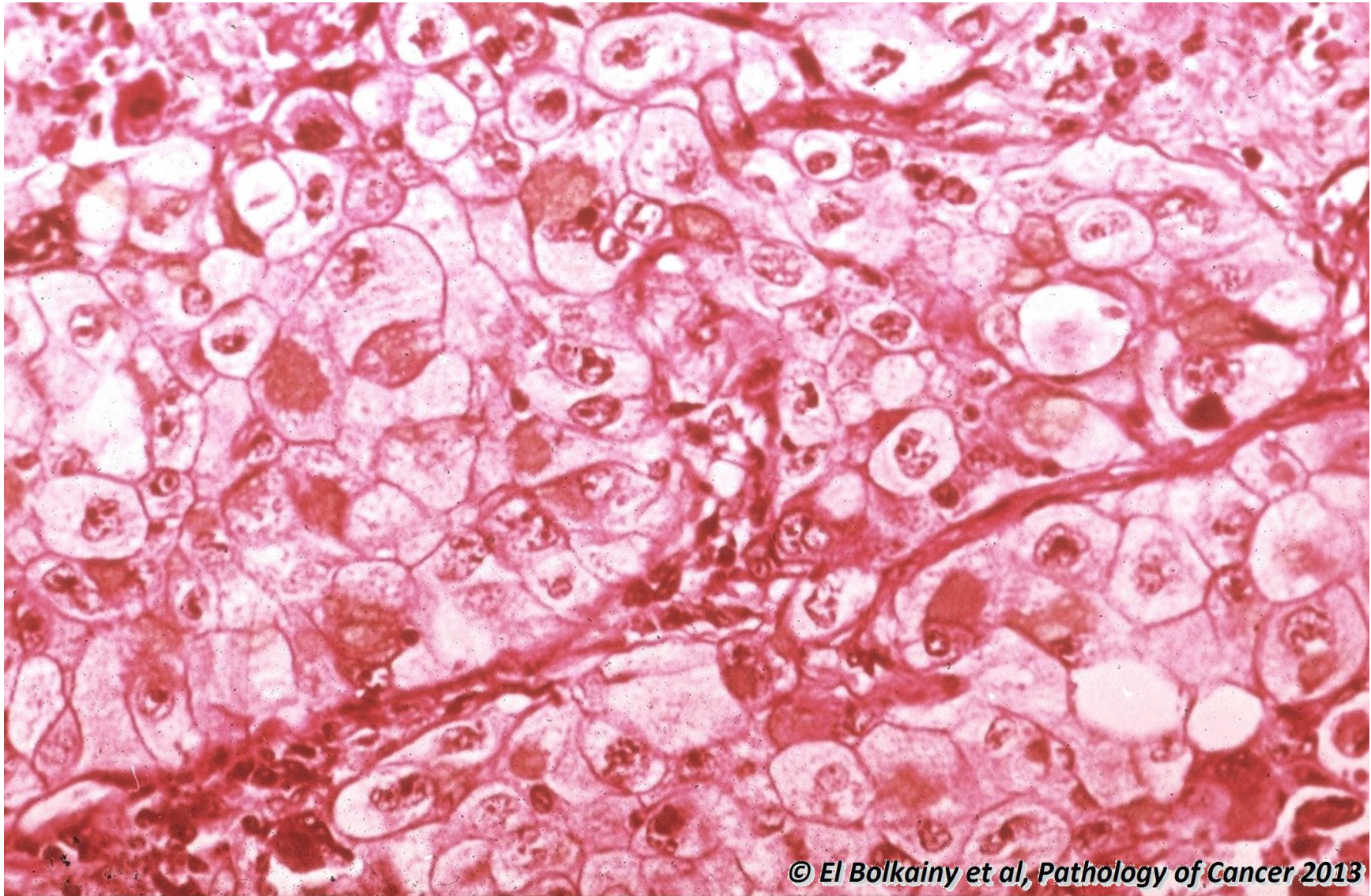
10.6 Adenosquamous carcinoma, histology.



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Picture 10-6 Adenosquamous carcinoma, histology. Two separate and distinct carcinomas are observed with glandular and squamous carcinoma.

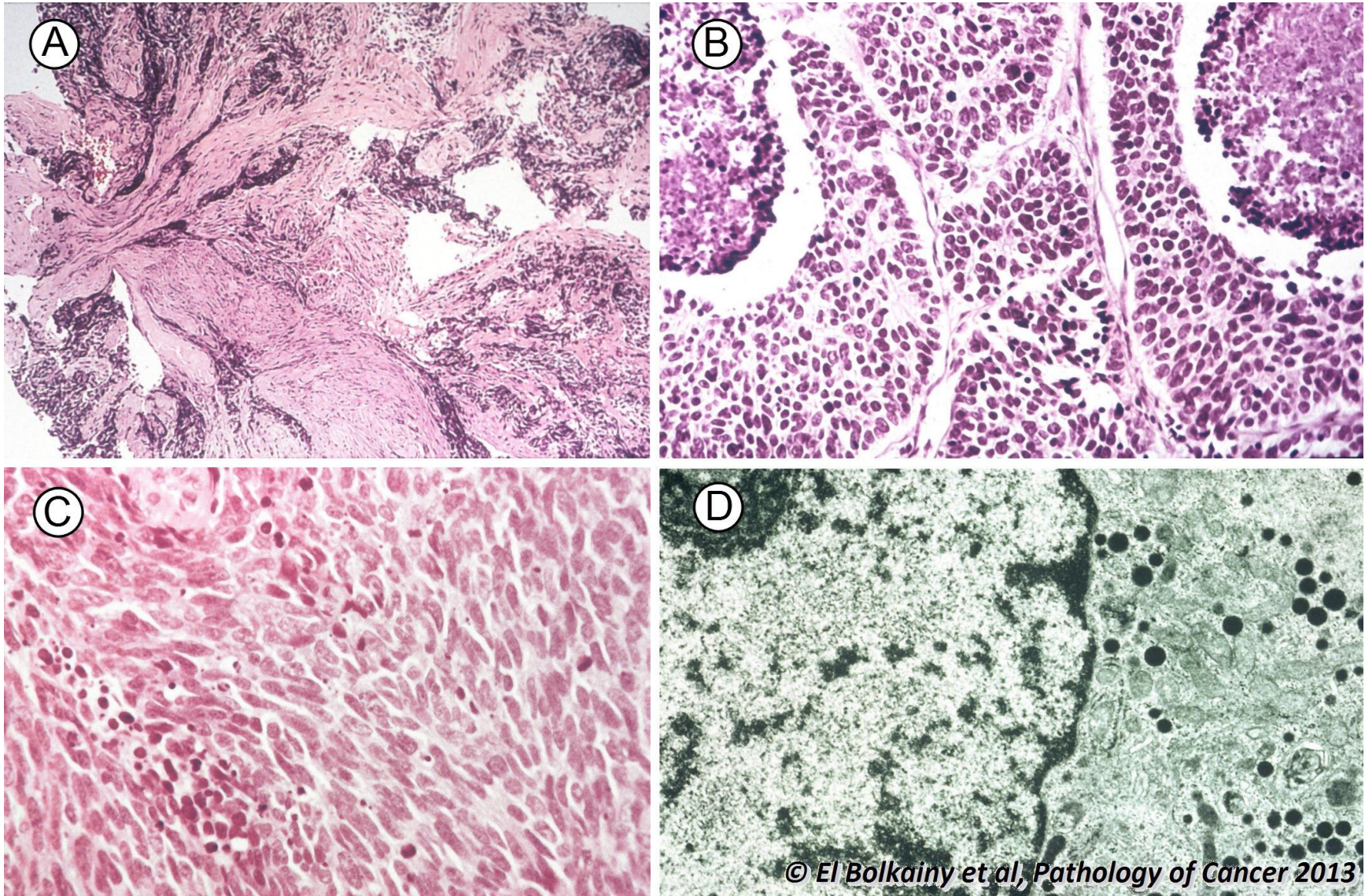
10.7 Large cell carcinoma, histology.



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Picture 10-7 Large cell carcinoma, histology. Malignant cells are large, with abundant cytoplasm, and prominent nucleoli. this includes basaloid, clear cell and neuroendocrine differentiation variants.

10.8 Small cell carcinoma, histology.

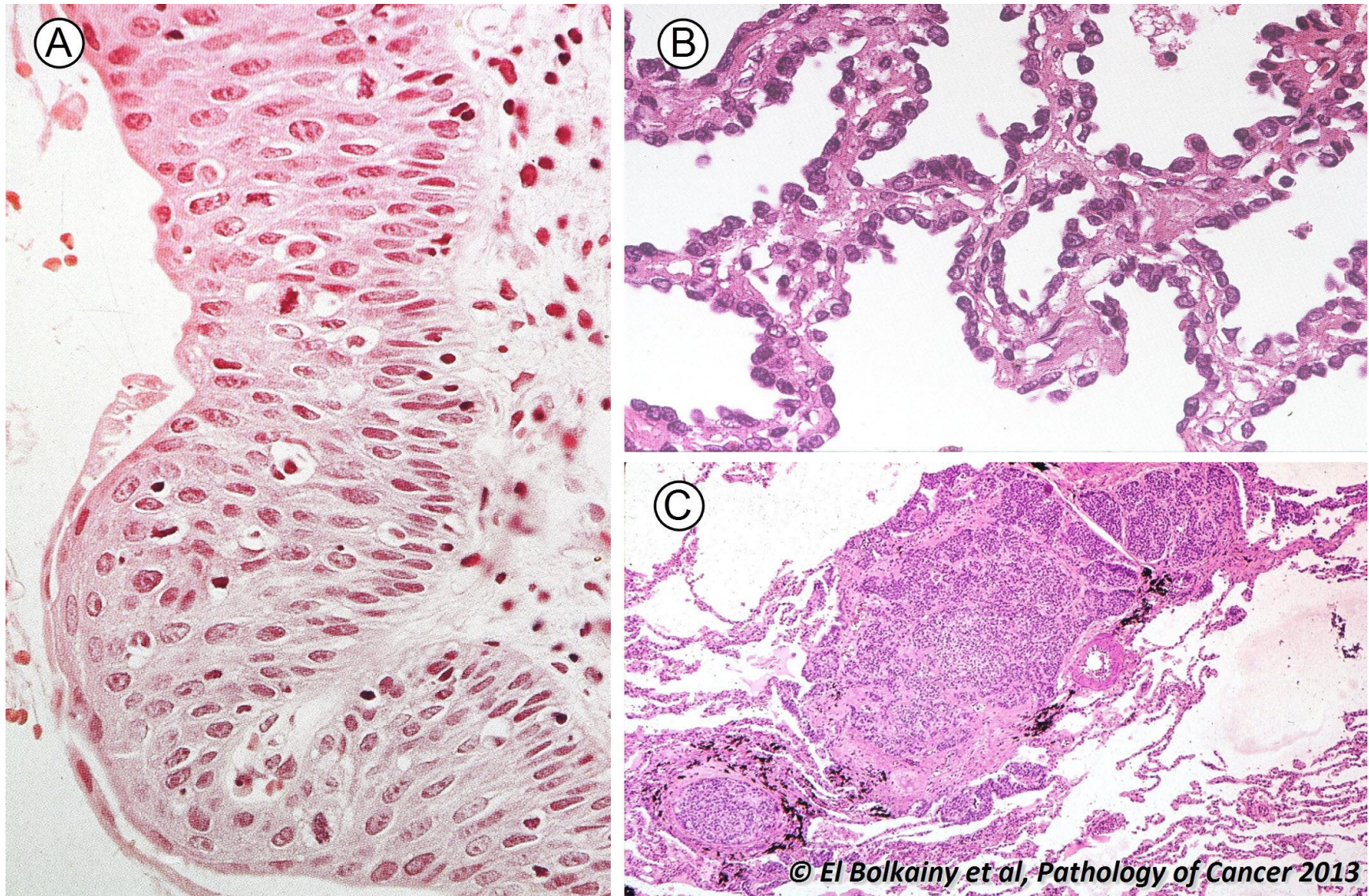


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Picture 10-8

Small cell carcinoma, histology. A, B, and C It is characterized by small rounded or oval cells (< 3 lymphocytes in diameter), moulding, smudging of nuclei, scanty cytoplasm, and active mitosis (60/10 HPF). Immunoreaction to chromogranin & TIF-1. it is rarely combined with squamous or adenocarcinoma component. D Electron microscopy, showing membrane - bound neurosecretory granules characteristic of tumors of neuroectodermal origin.

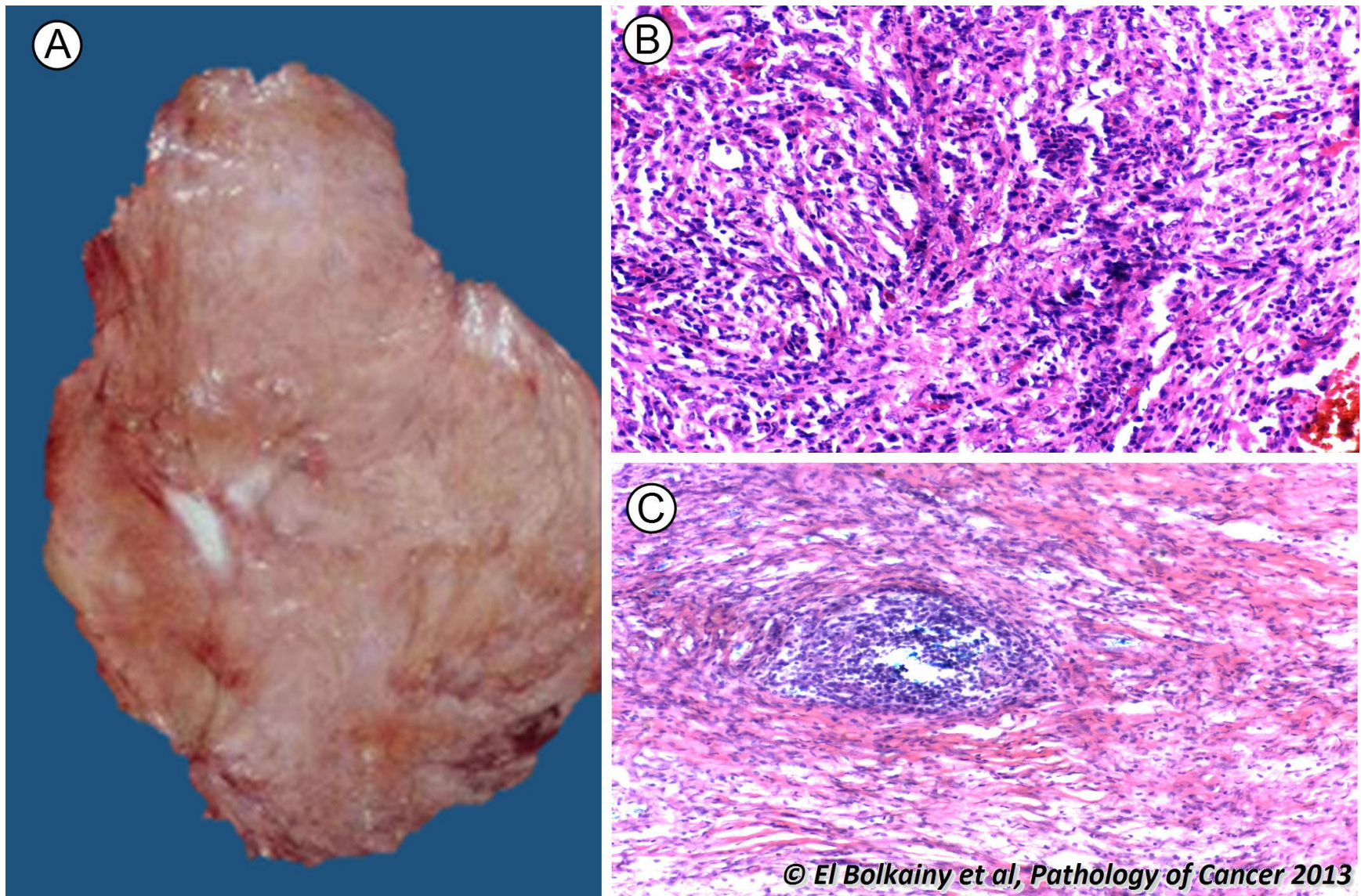
10.9 Atypical precursor lesions.



Picture 10-9

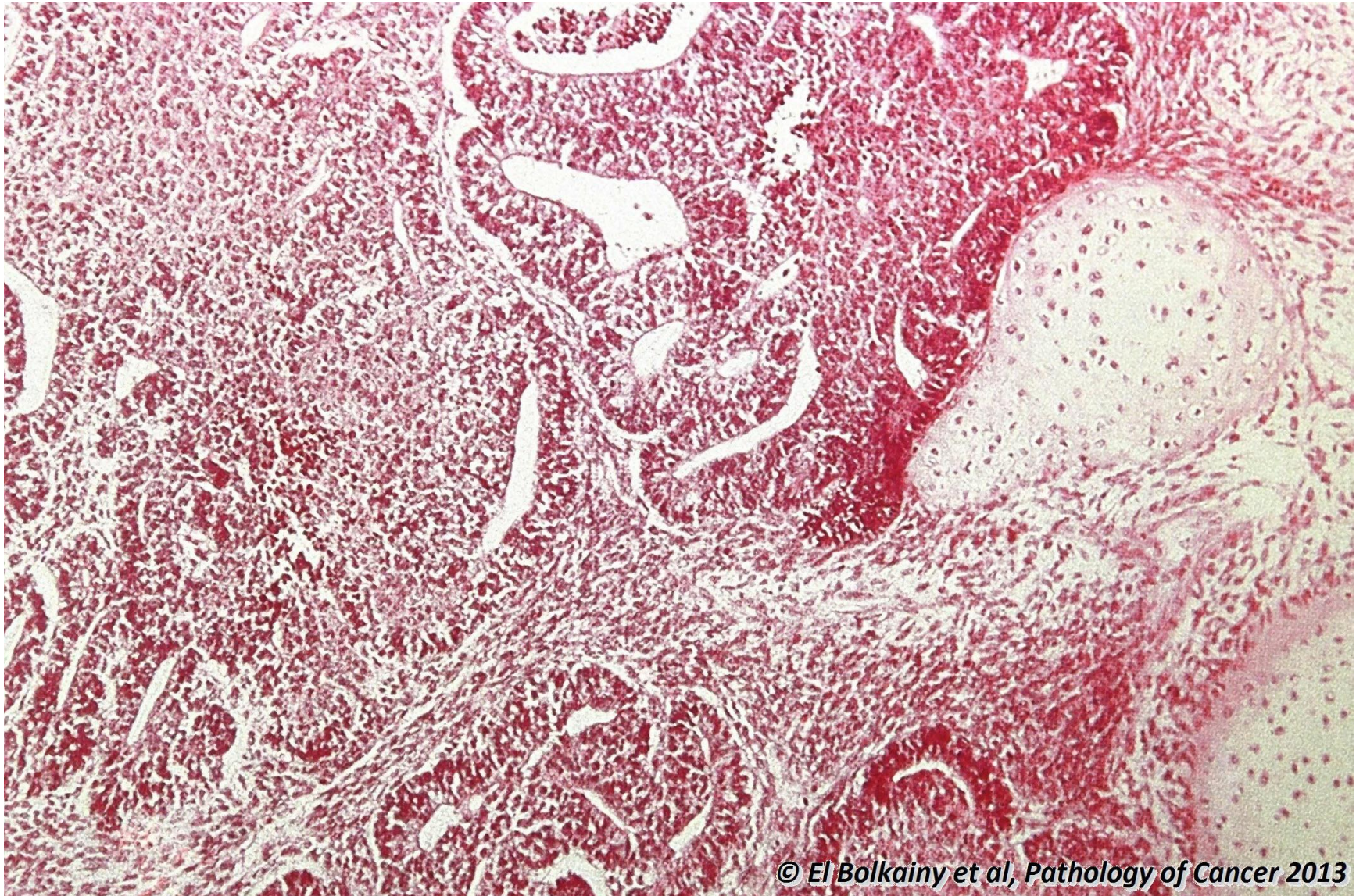
Atypical precursor lesions. **A** Moderate squamous dysplasia. the atypical cells are confined to basal layers of bronchial epithelium. **B** Atypical adenomatous hyperplasia. Microscopic lesion (< 5mm), alveoli lined by cuboidal cells with gaps inbetween. **C** Tumorlet, a microscopic nest of neuroectodermal cells (< 5mm).

10.10 Inflammatory myofibroblastic tumor.



Picture 10-10 Inflammatory myofibroblastic tumor. **A** Gross features, it presents as a circumscribed mass lesion. **B** and **C** The histology is characterized by a mixture of myofibroblasts and inflammatory cells (mainly lymphocytes and plasma cells).

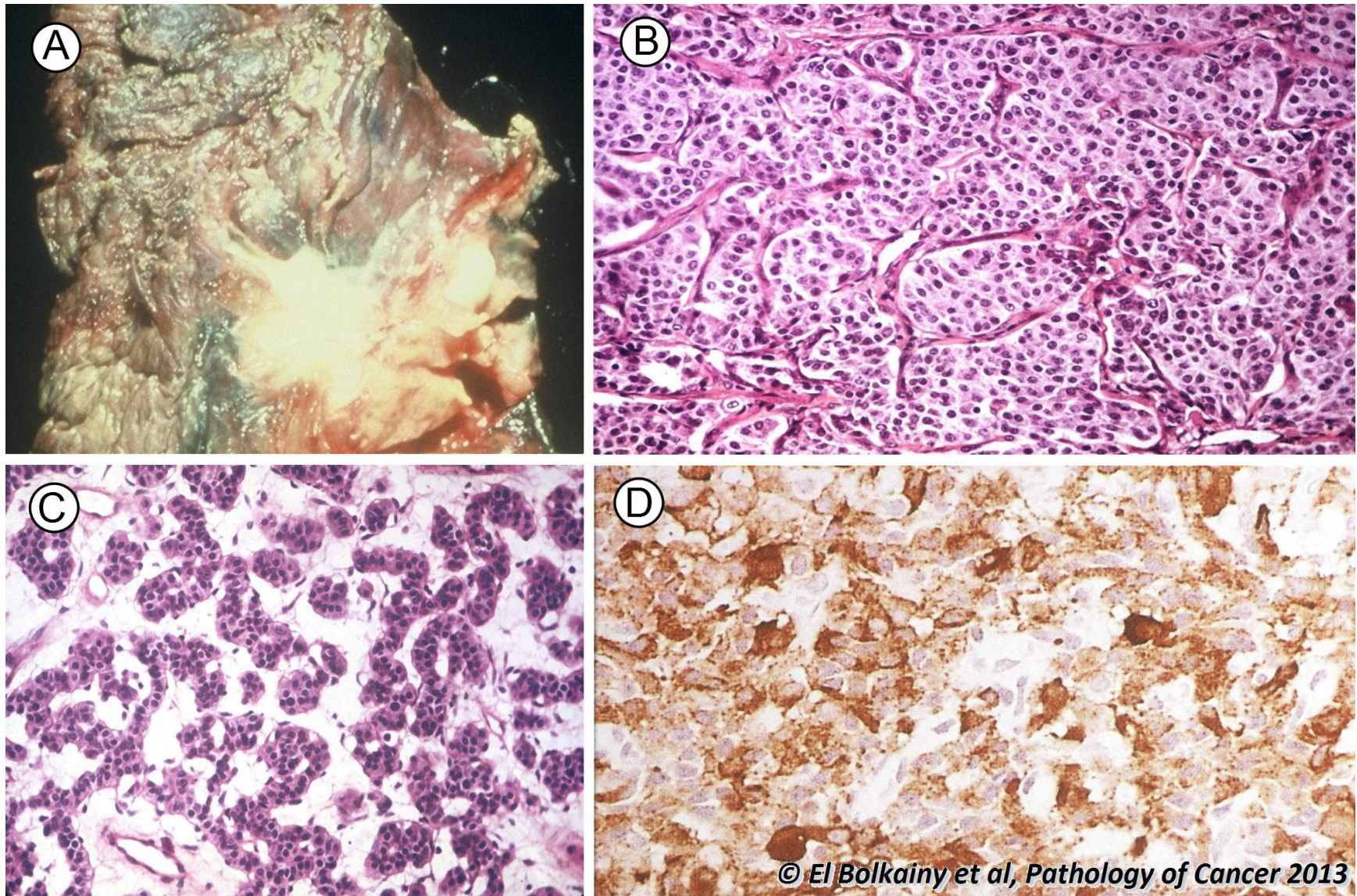
10.11 Pulmonary blastoma, histology.



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Picture 10-11 Pulmonary blastoma, histology. A biphasic malignant tumor composed of epithelioid and primitive blastemal cells, associated with spindle cell mesenchymal component with rhabdomyosarcoma or chondrosarcoma differentiation.

10.12 Typical carcinoid tumor.

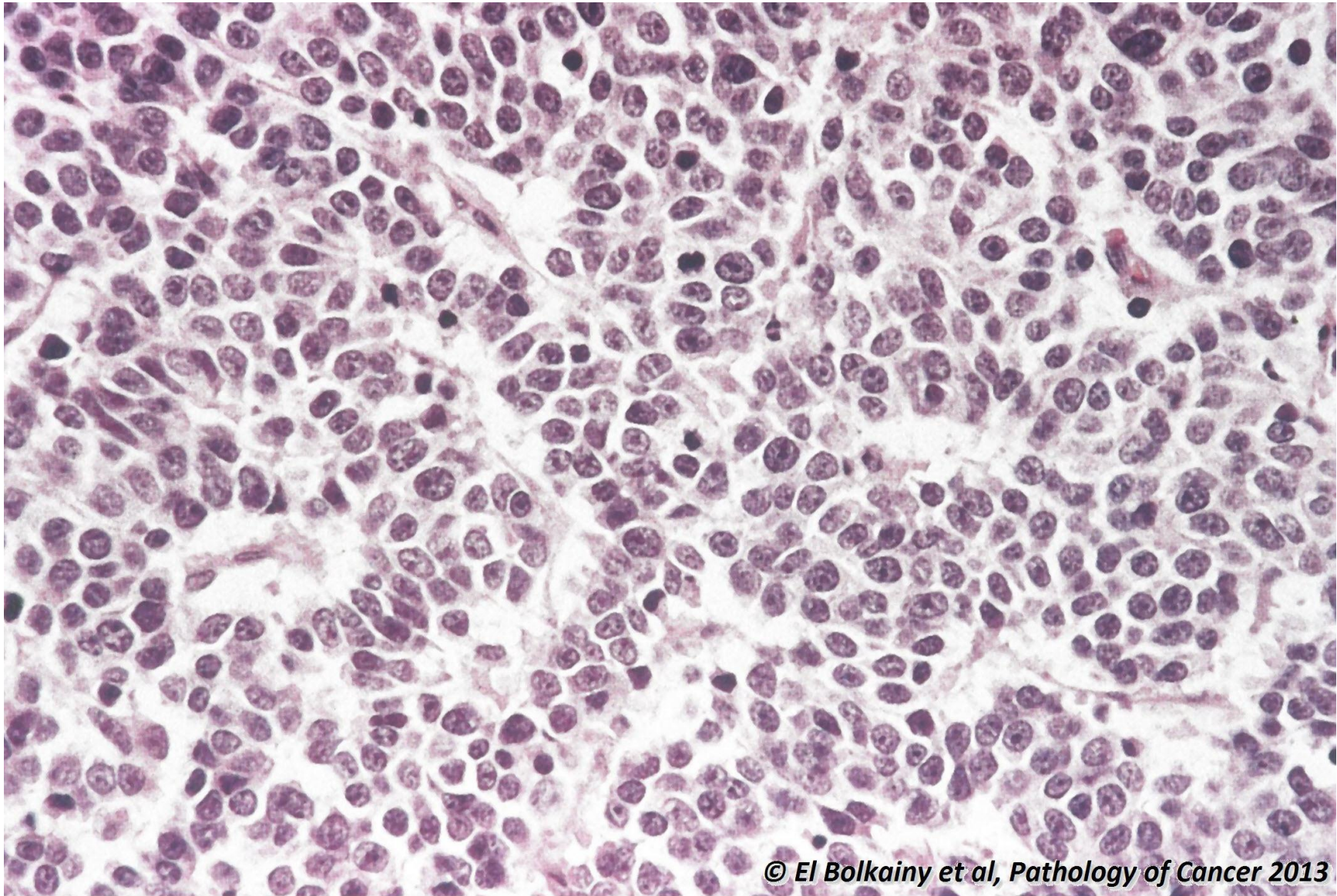


Picture 10-12

Typical carcinoid tumor. A Gross features, a yellowish- white tumor mass invading bronchial wall. B and C Most common subtype (85%) composed of uniform cells with trabecular pattern, rare mitosis (1/ 10HPF) and no necrosis. D It shows strong reaction to chromogranin. It has favorable prognosis (5-year survival 85%).

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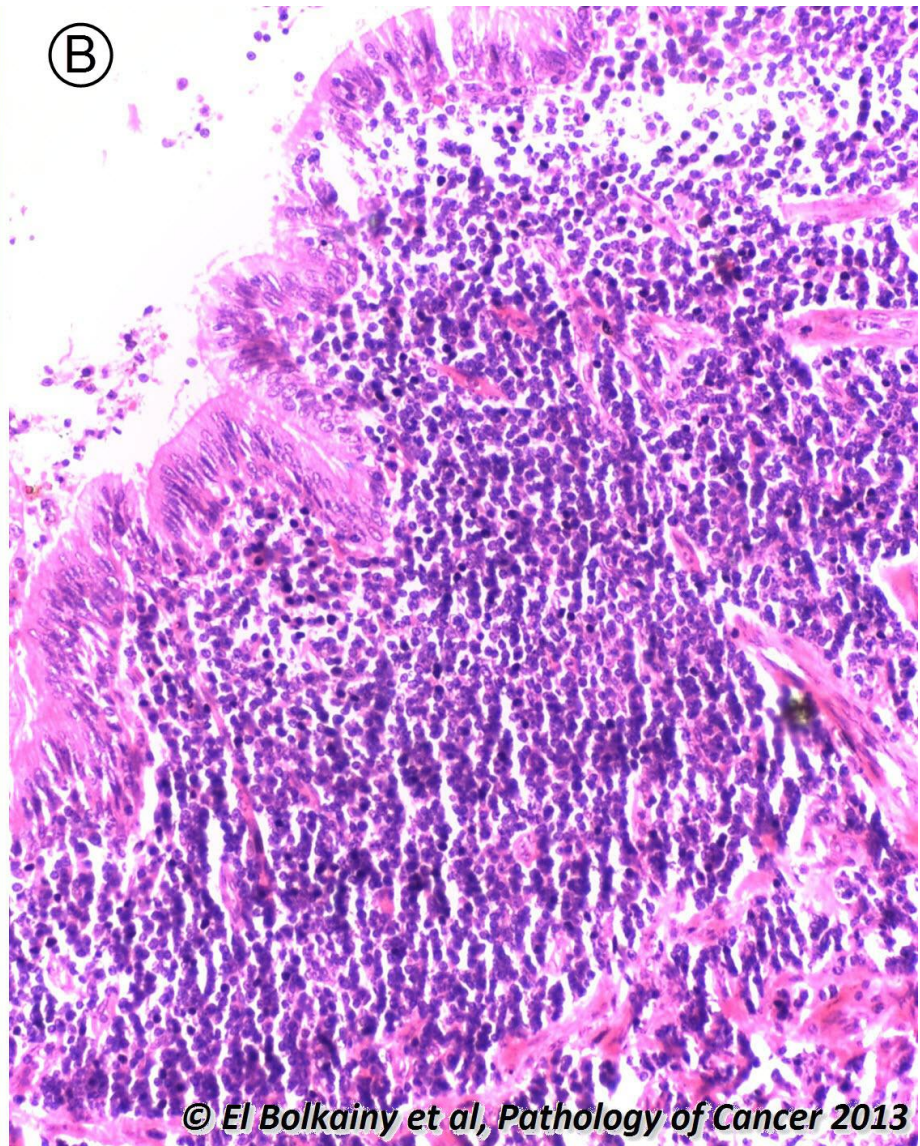
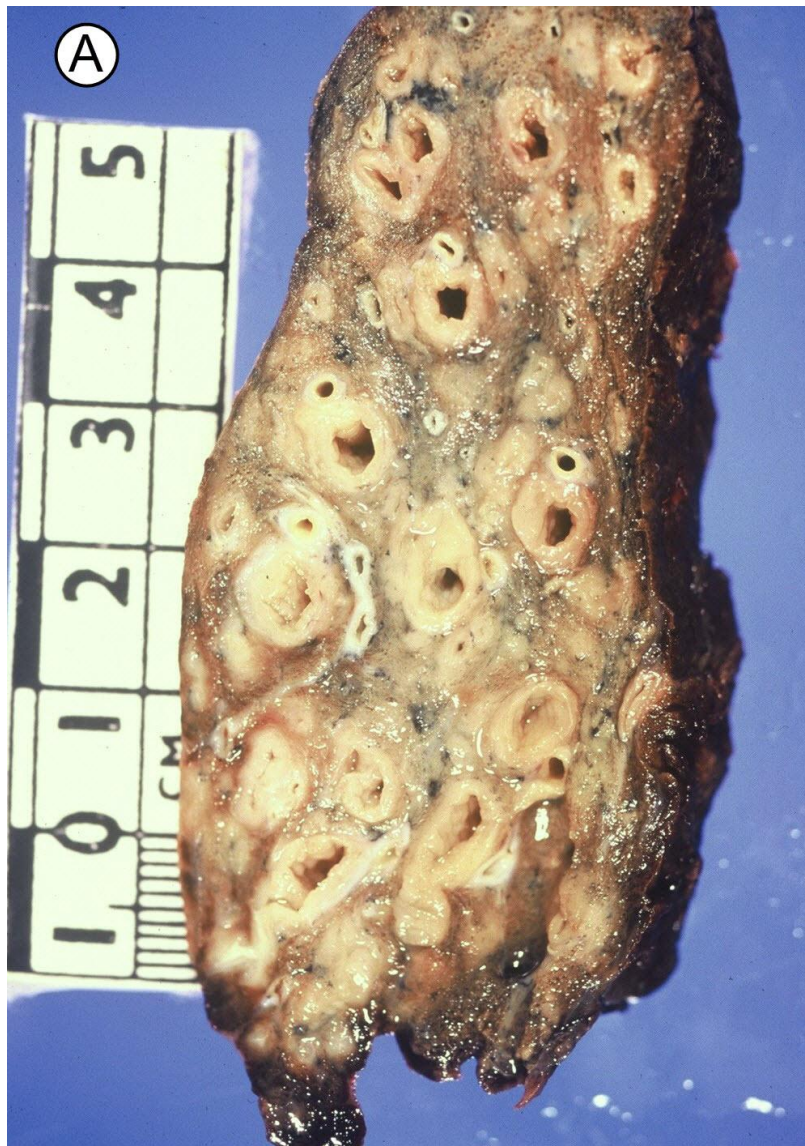
10.13 Atypical carcinoid tumor, histology.



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Picture 10-13 Atypical carcinoid tumor, histology. A less common type (15%), showing active mitosis (2-10 mitoses / HPF), necrosis, weak reactivity to chromogranin and unfavorable prognosis (5-year survival 50%).

10.14 Marginal zone lymphoma (MALT-type).

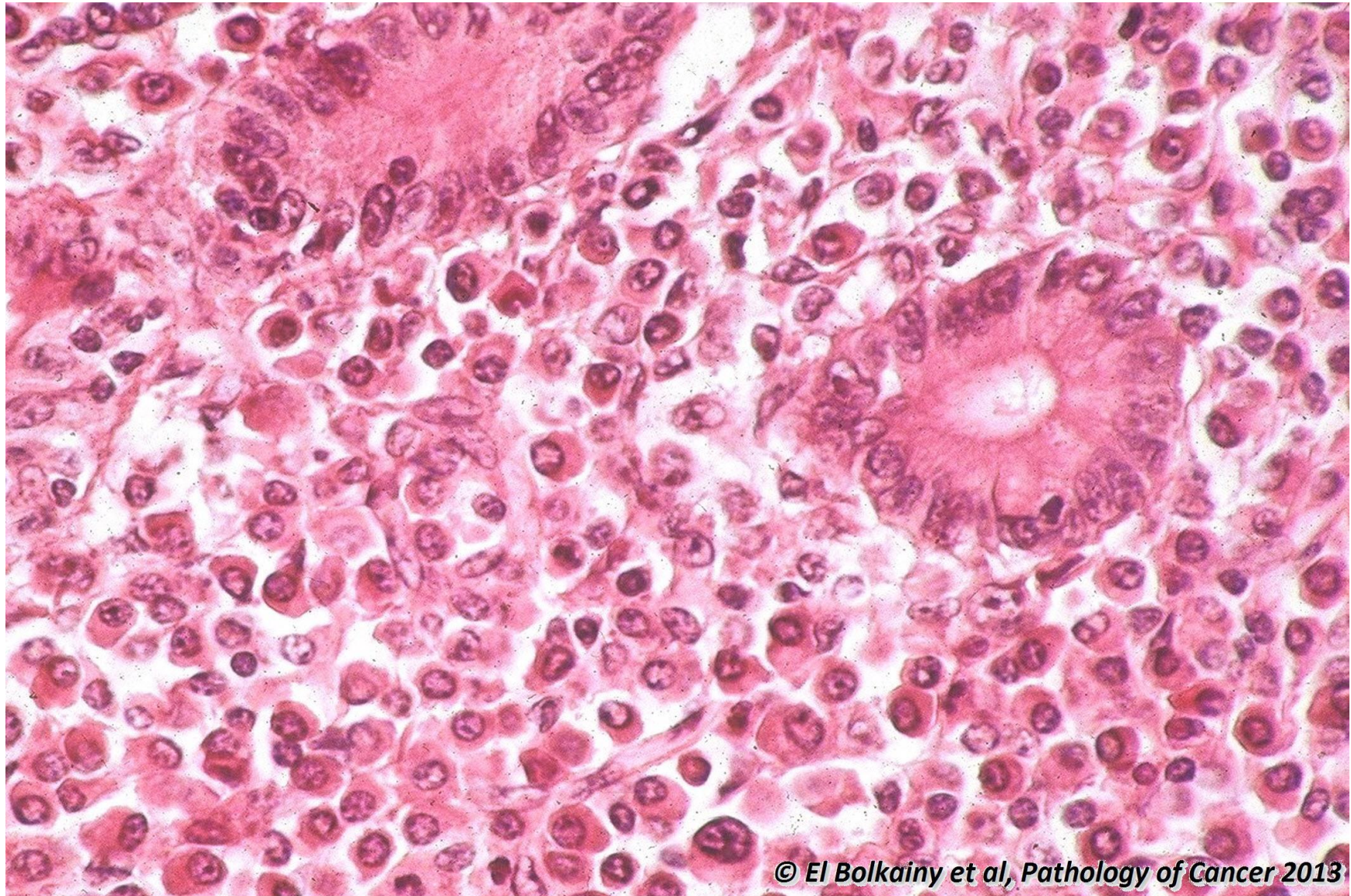


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Picture 10-14

Marginal zone lymphoma (MALT-type). A Gross features. A whitish tumor infiltrate around the bronchioles. B Small lymphocytes (CD20 positive) forming nodules and invading bronchial epithelium. Plasma cells, necrosis and large cell progression may be observed.

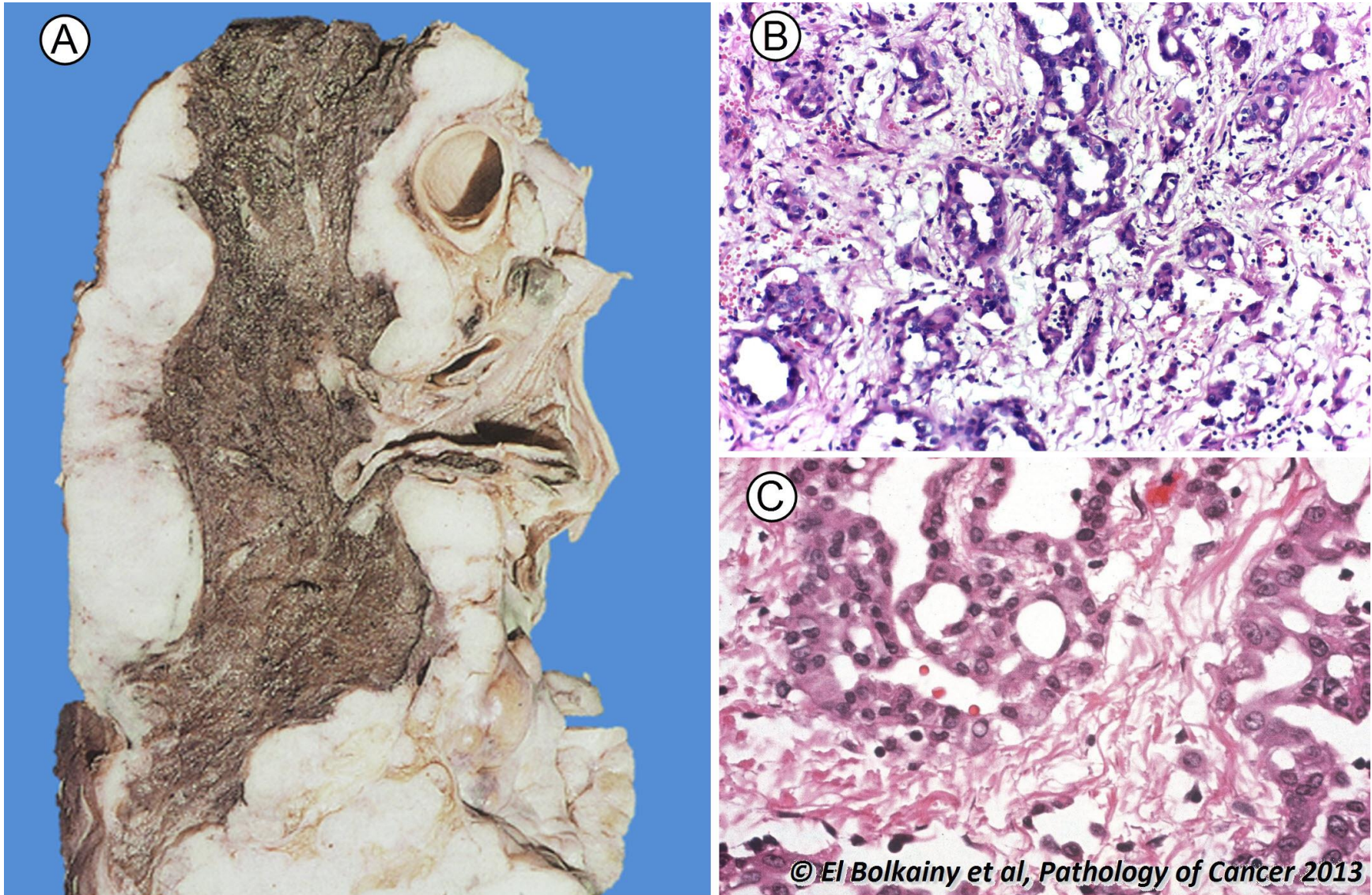
10.15 Solitary extramedullary plasmacytoma.



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Picture 10-15 Solitary extramedullary plasmacytoma. This primary lymphoma is composed entirely of plasma cells (CD138 positive). Prognosis is most favorable after surgical excision.

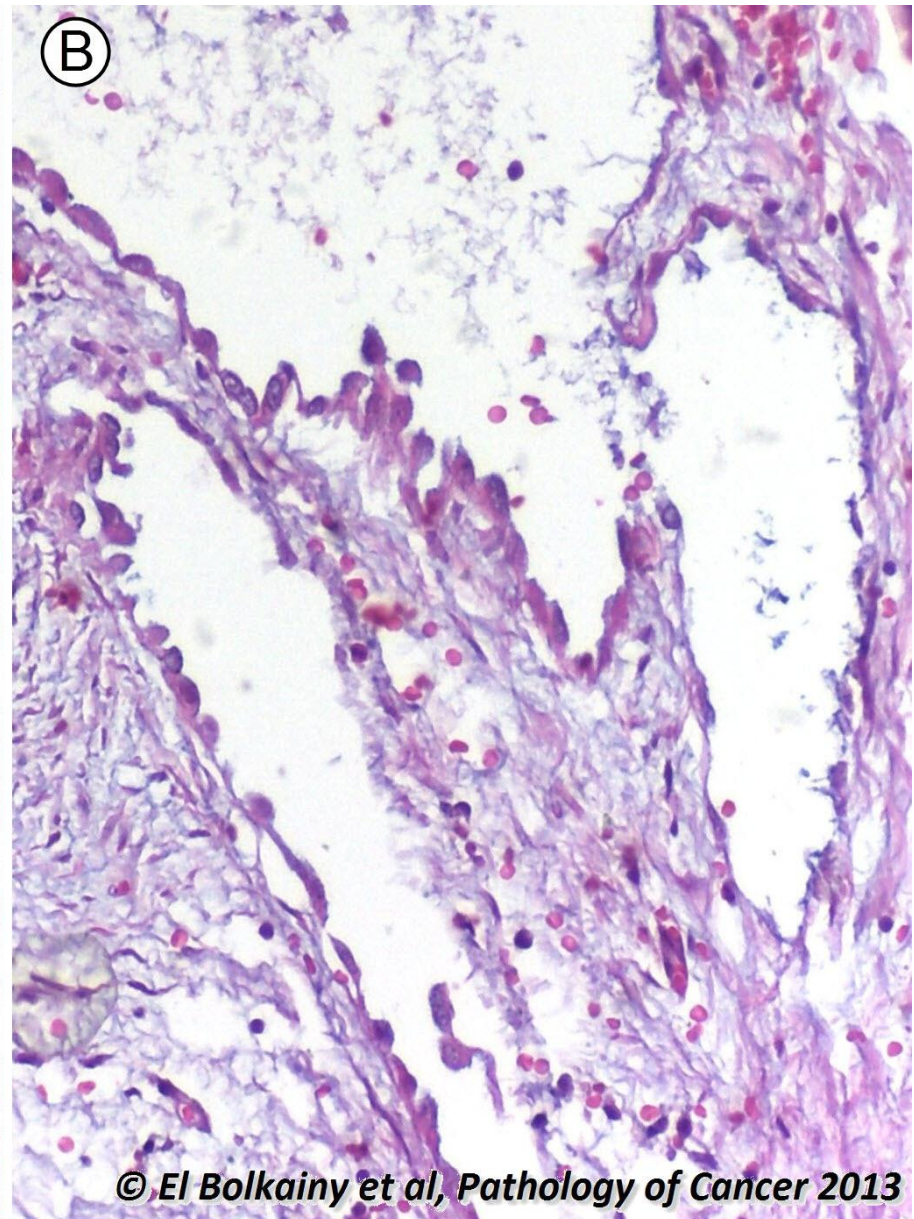
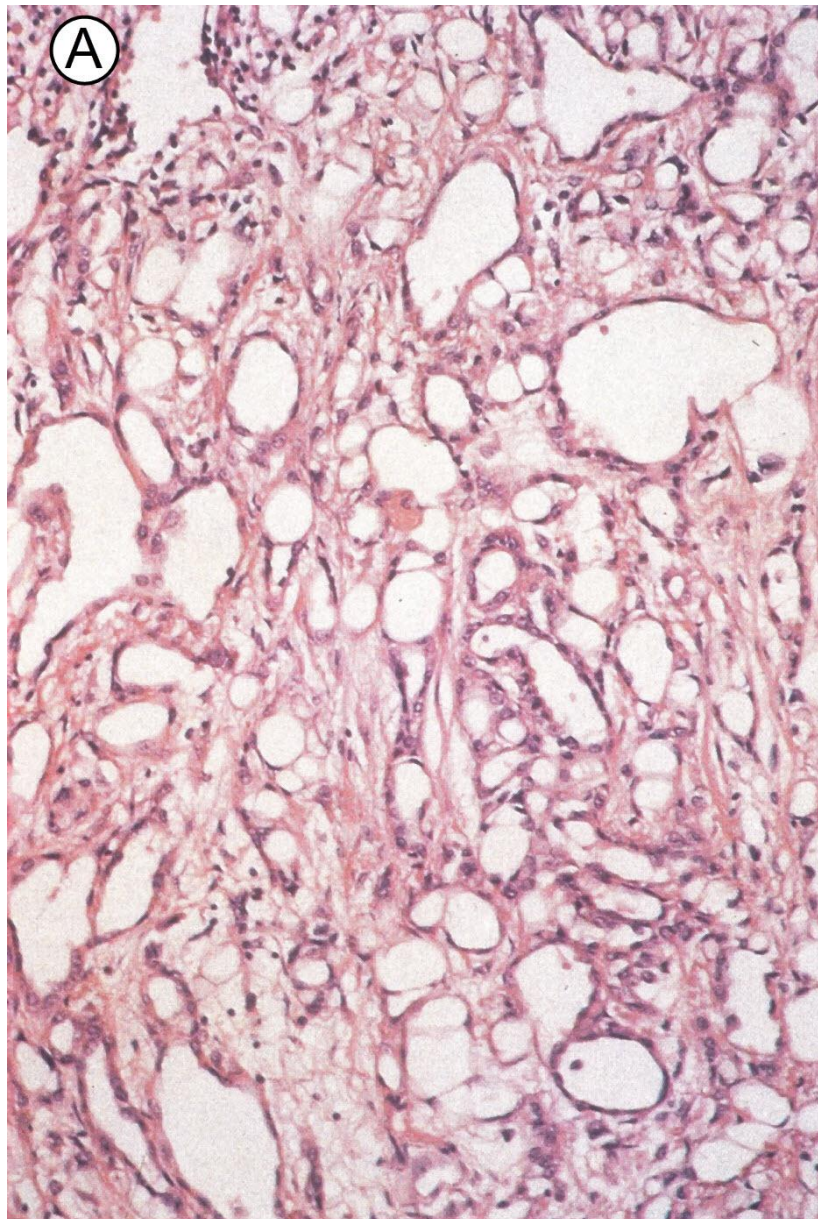
10.16 Pleural mesothelioma.



Picture 10-16

Pleural mesothelioma. **A** Gross features. A surface tumor growing along the pleura and encasing the lung. **B** Histology of a biphasic tumor showing a tubulopapillary epithelioid cells, associated with spindle cell component in the stroma.

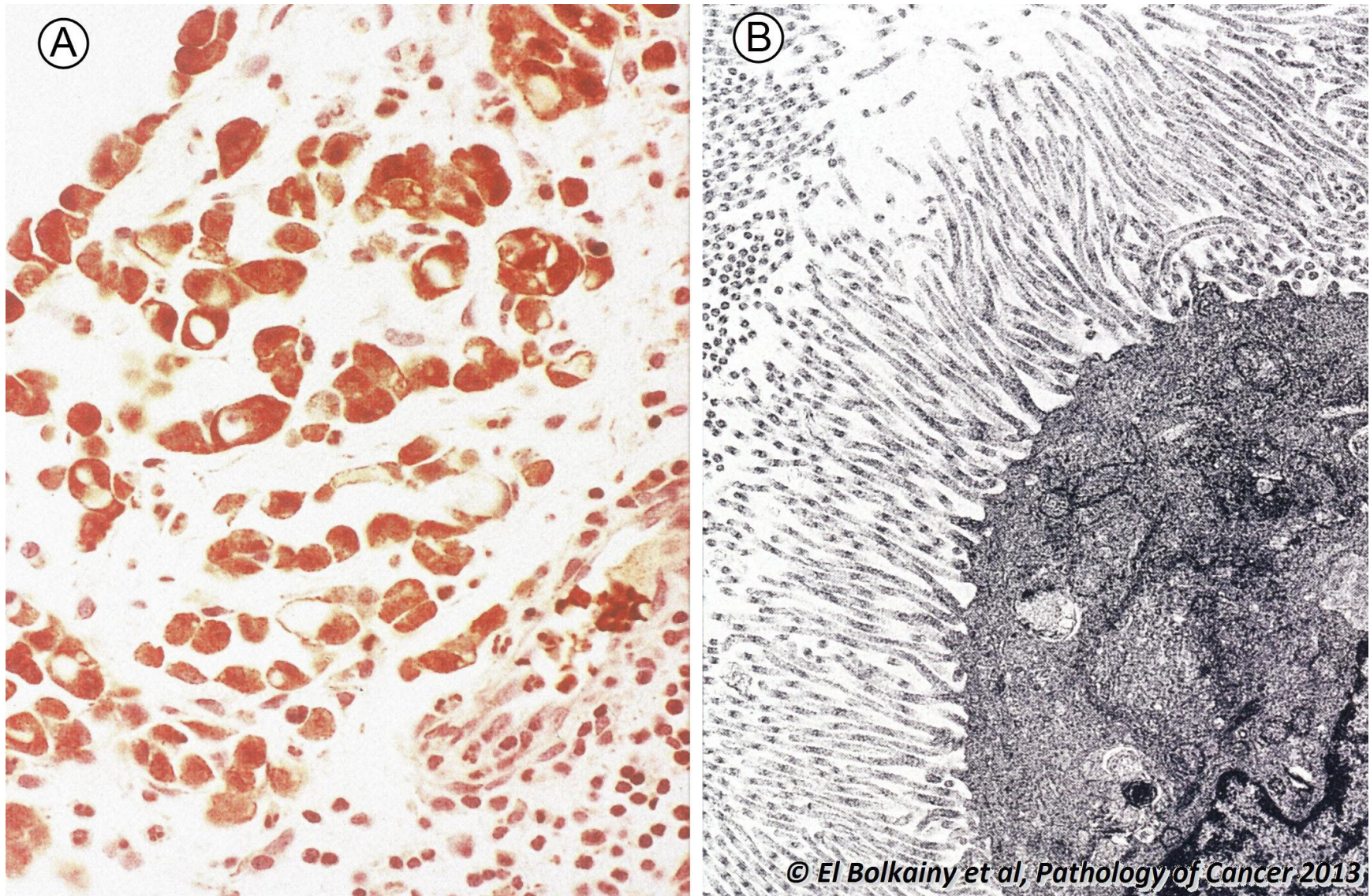
10.17 Mesothelioma, histology of a microcystic variant.



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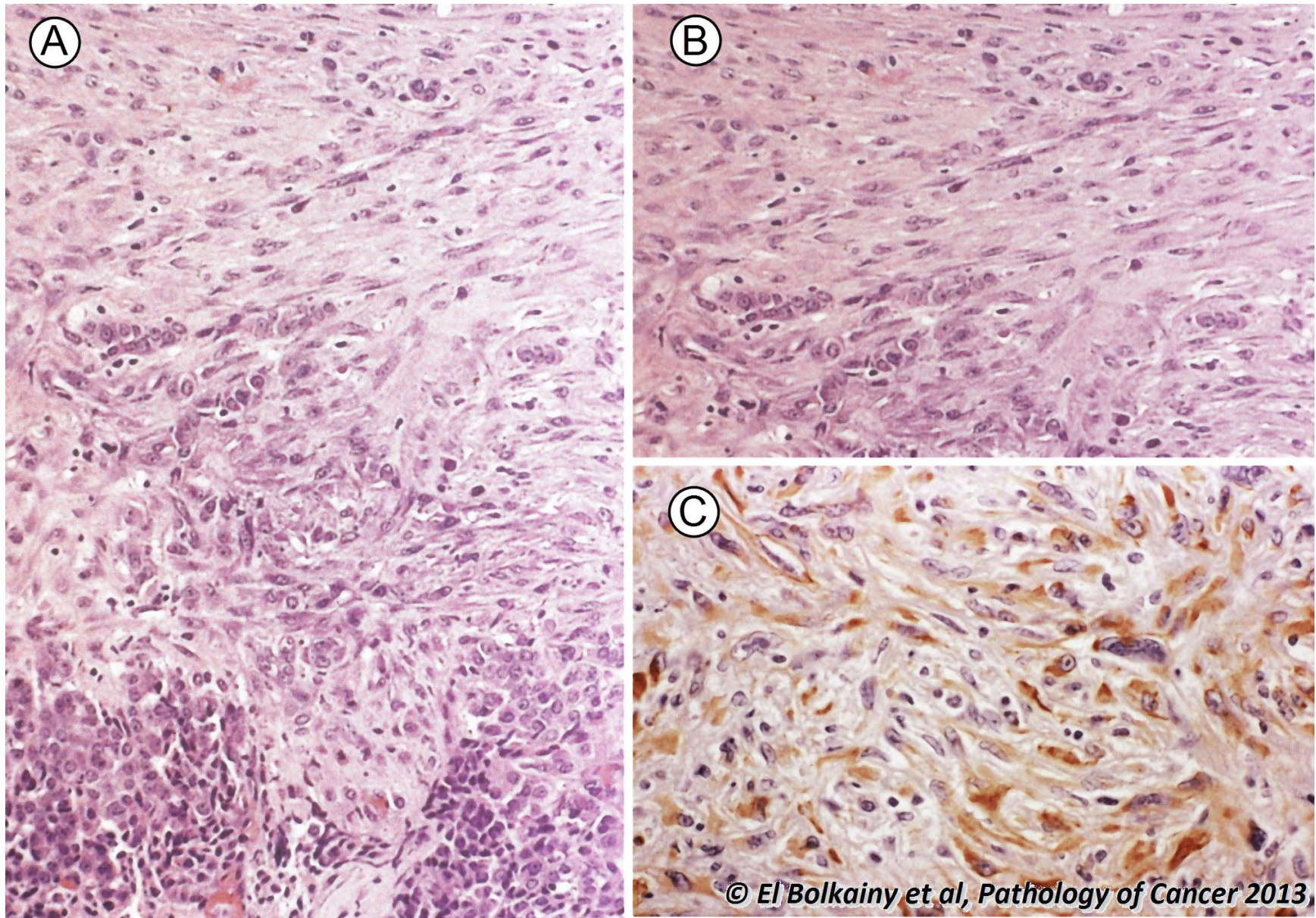
Picture 10-17 Mesothelioma, histology of a microcystic variant. The epithelial structures of the tumor show cystic change. **A** Low power. **B** High power.

10.18 Mesothelioma, confirmatory measures.



Picture 10-18 Mesothelioma, confirmatory measures. **A** Immunohistochemistry, positivity to Calretinin (associated with negativity to CEA). **B** Electron microscopy shows a characteristic long surface microvilli.

10.19 Mesothelioma.

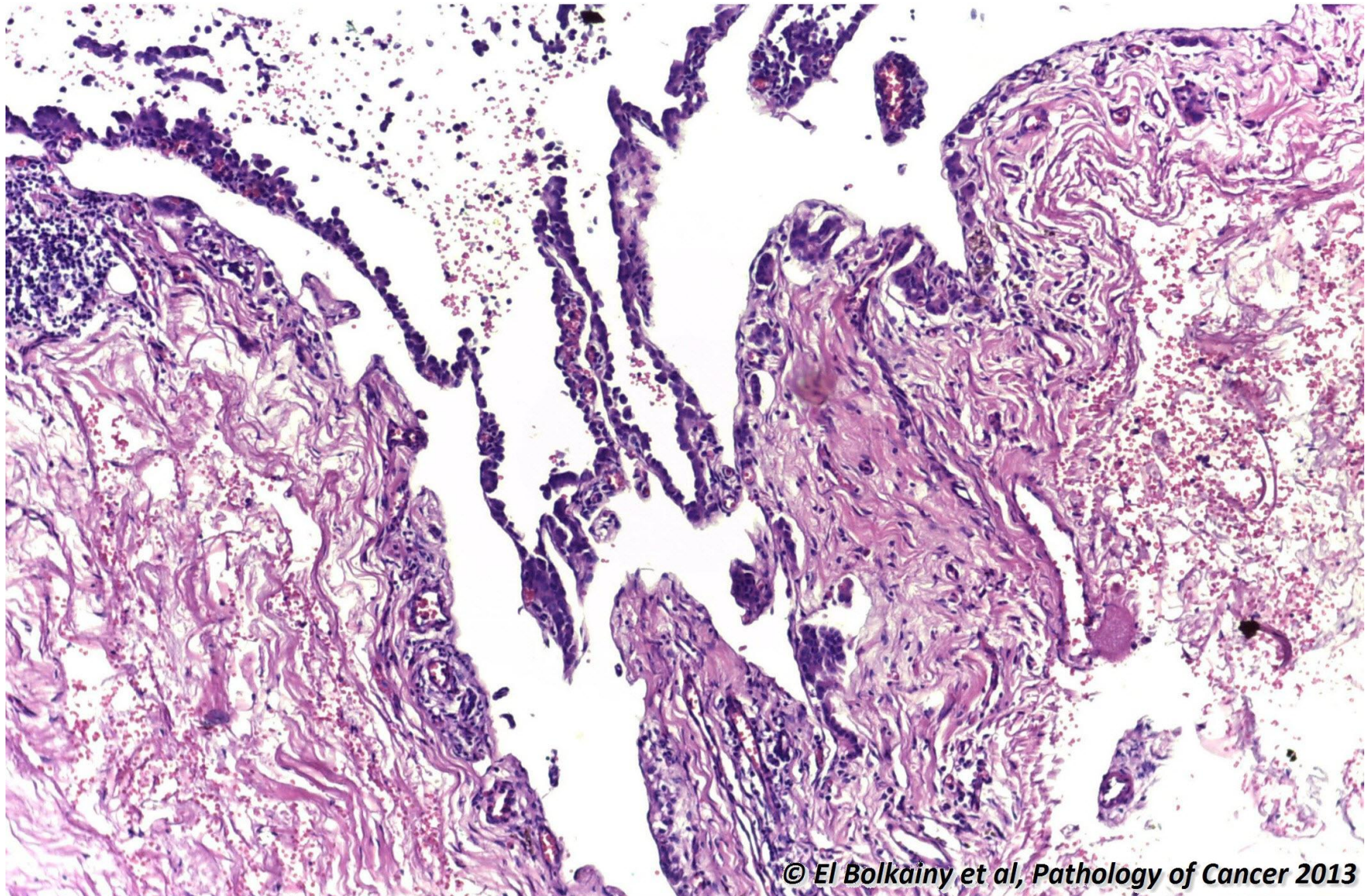


Picture 10-19

Mesothelioma. **A** Biphasic mesothelioma, with clusters of epithelial cells and bundles of malignant spindle cells. **B** Monophasic sarcomatoid mesothelioma. this unusual variant is composed of spindle cells arranged in short bundles or storiform pattern with atypical nuclei. **C** Immunohistochemical reaction showing CK positivity.

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10.20 Reactive mesothelial hyperplasia, histology.

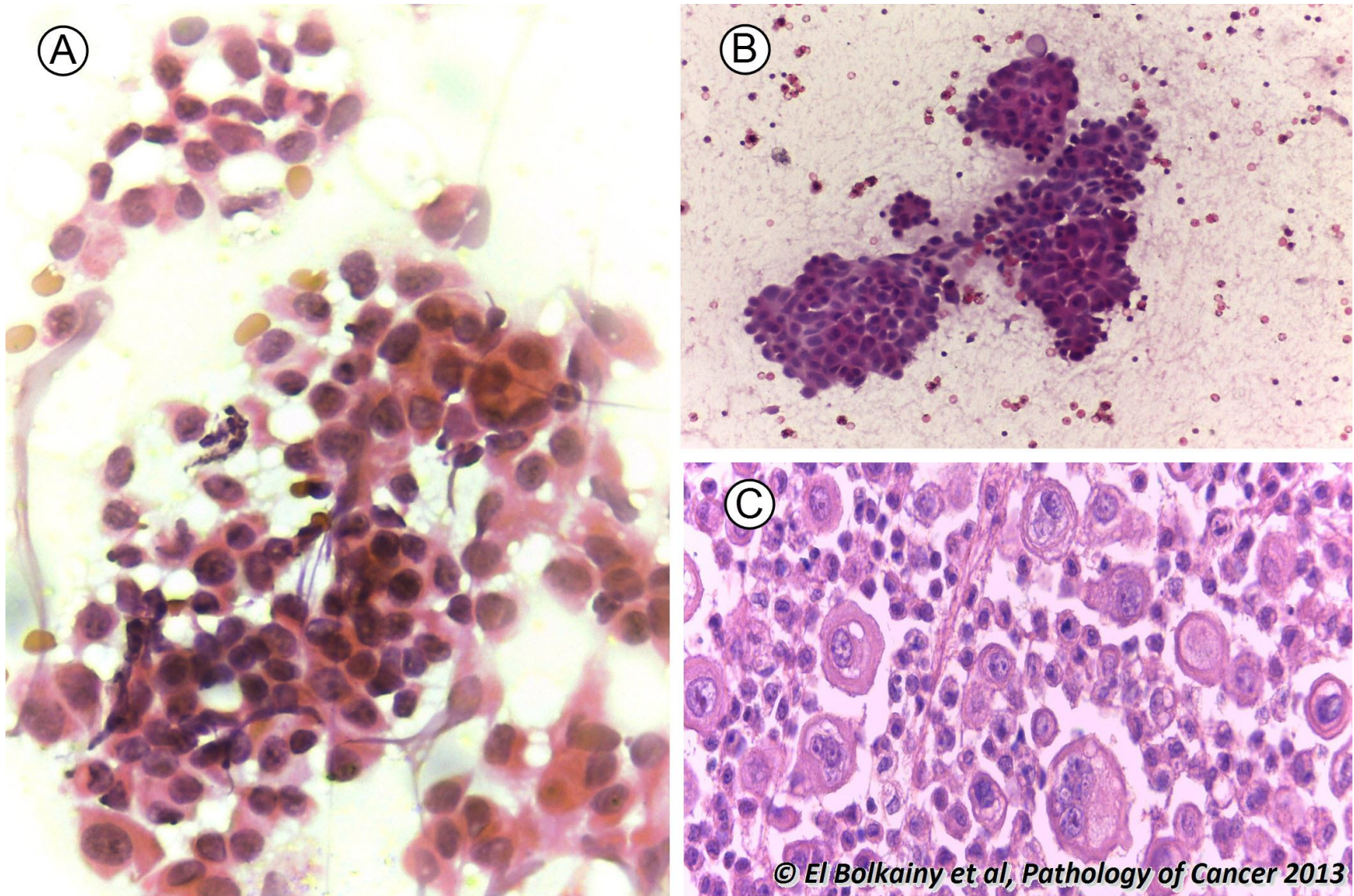


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**Picture
10-20**

Reactive mesothelial hyperplasia, histology. This lesion is distinguished from from mesothelioma by its microscopic size (2-3mm), absence of a mass on CT, superficial nature not invading fat, and immunoreactivity to desmin.

10.21 Mesothelioma, pleural fluid cytologic features.

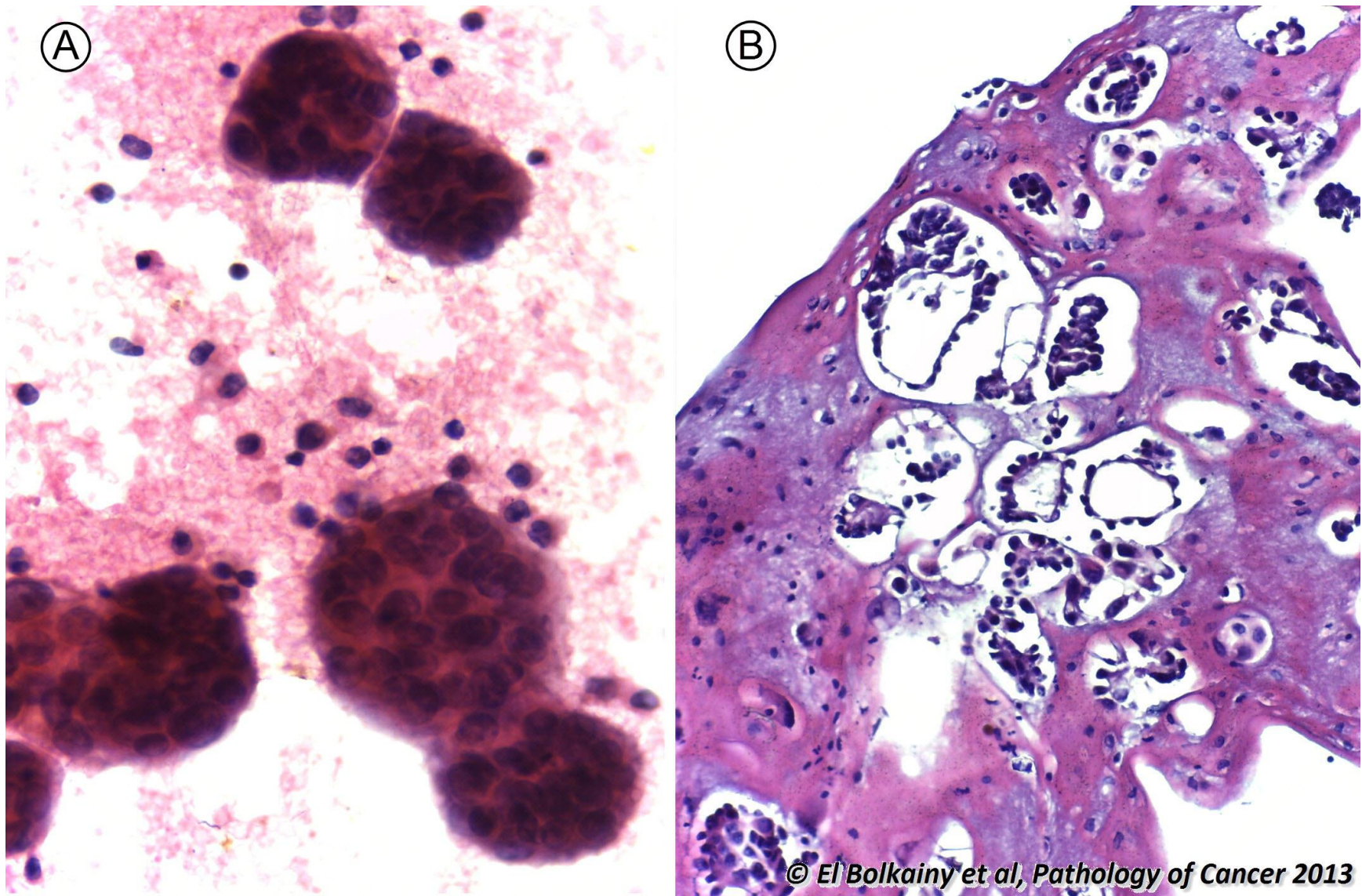


Picture 10-21

Mesothelioma, pleural fluid cytologic features. A and B A loose cluster of tumor cells, with spaces inbetween (windows) and ill-defined periphery. C High power showing large cells with multiple nuclei and eosinophilic cytoplasm.

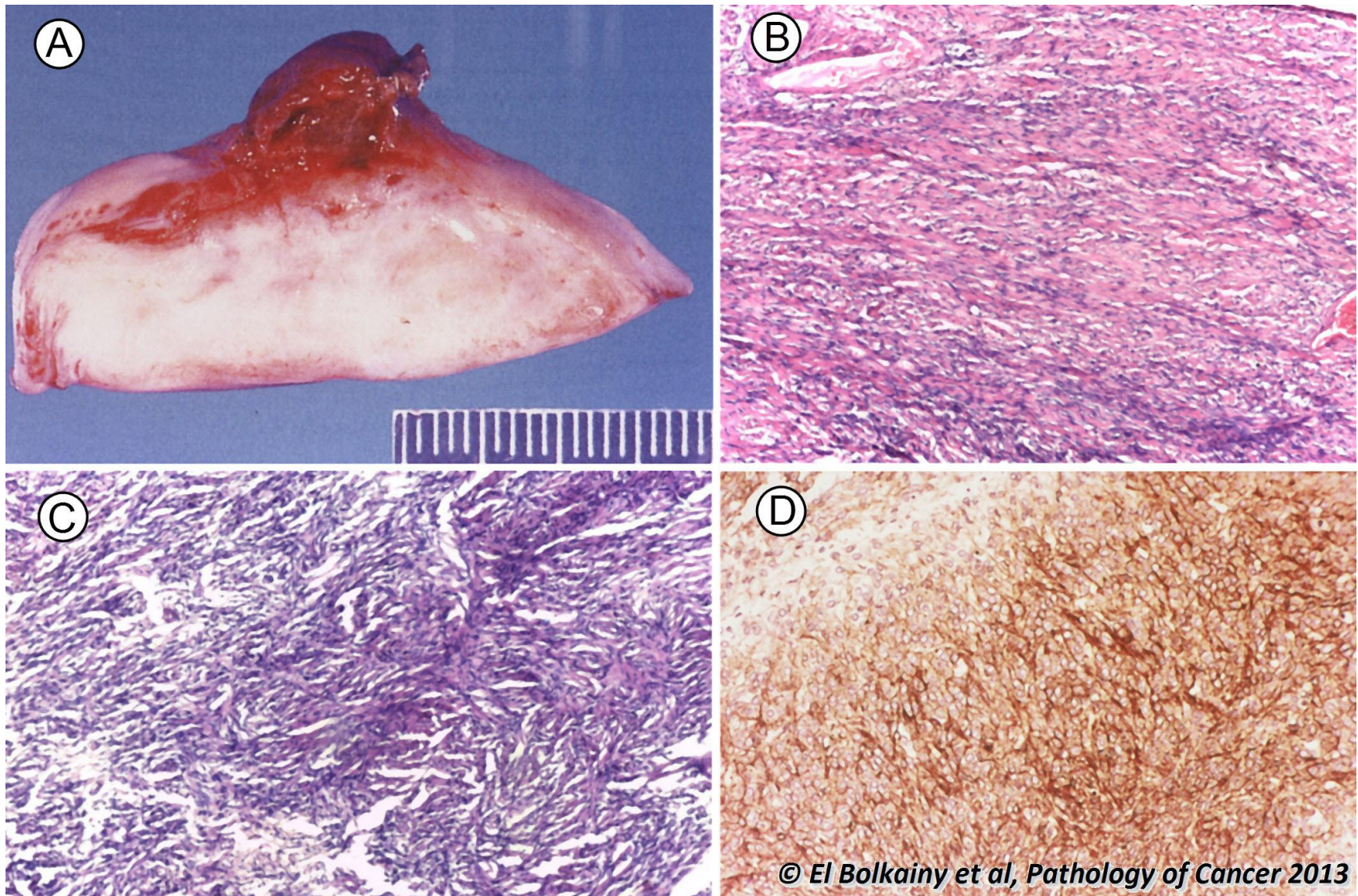
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10.22 Carcinoma, pleural fluid cytologic features.



Picture 10-22 Carcinoma, pleural fluid cytologic features. **A** The neoplastic cells are crowded, overlapping, with sharp common peripheral border. **B** Cell-block section shows acinar lumens of carcinoma clusters.

10.23 Solitary fibrous tumor (formerly fibrous histiocyoma).



Picture 10-23 Solitary fibrous tumor (formerly fibrous histiocyoma). A Gross features. It presents as a gray white and circumscribed mass lesion. B, C and D Biphasic structure of hypocellular fibroblastic areas with dense collagen and focal areas with hemangiopericytoma pattern (CD34 positive and cytokeratin negative).