SCLEROSING LESIONS OF THE MEDIASTINUM

Mark R. Wick, MD

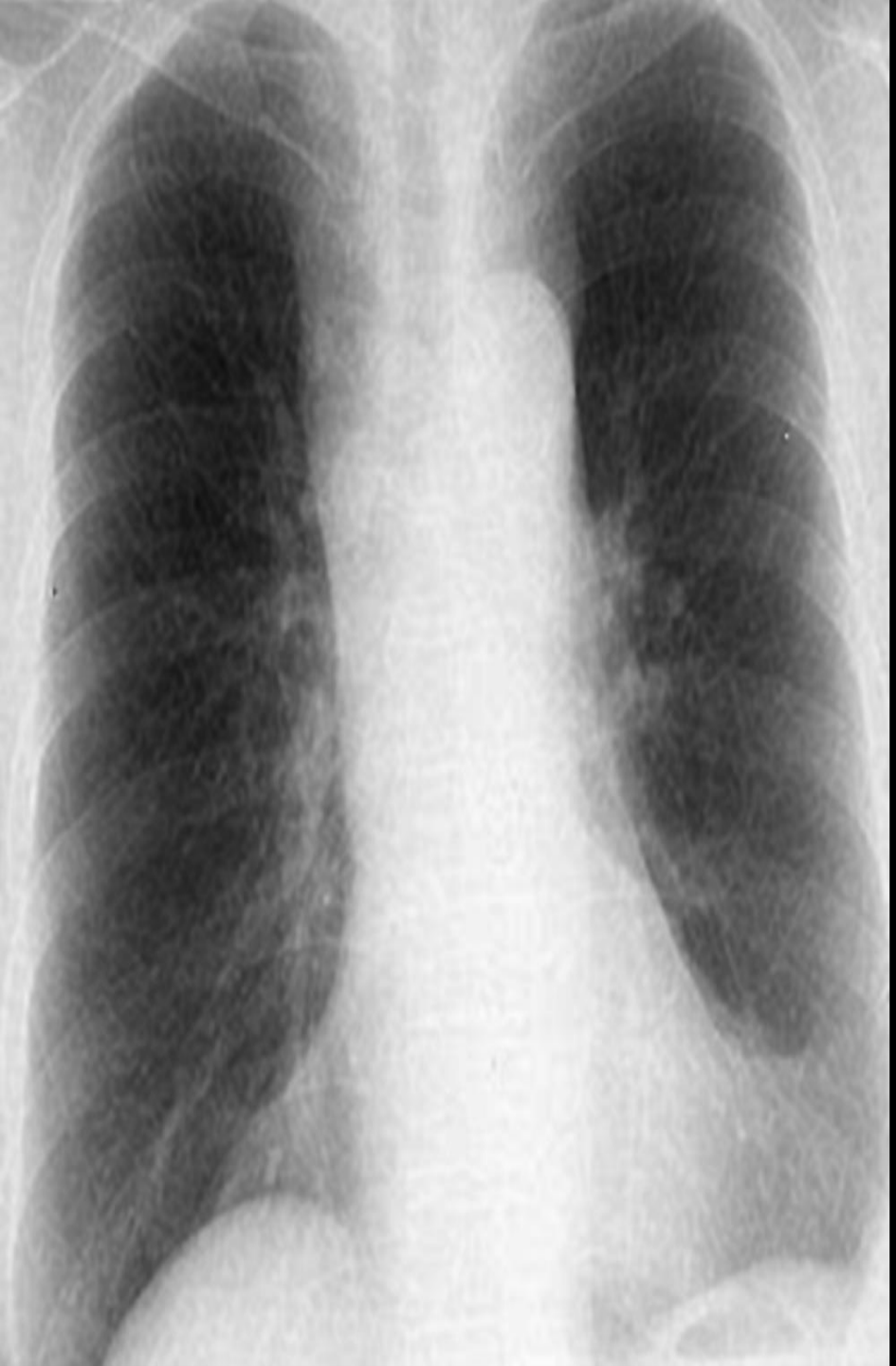
Division of Surgical Pathology
University of Virginia Health System
Charlottesville, VA, USA
mrwick1@usa.net

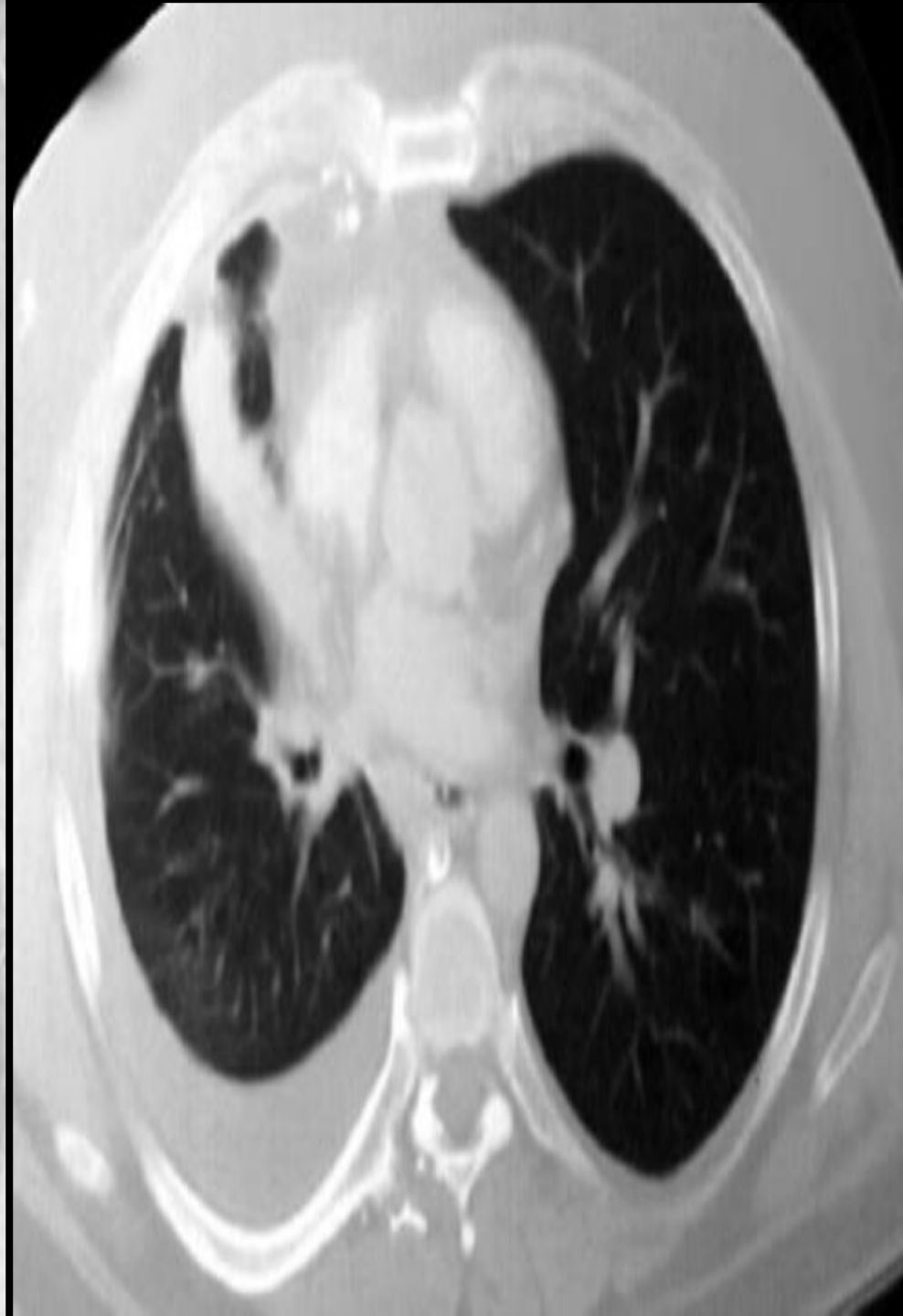
SCLEROSING MEDIASTINITIS

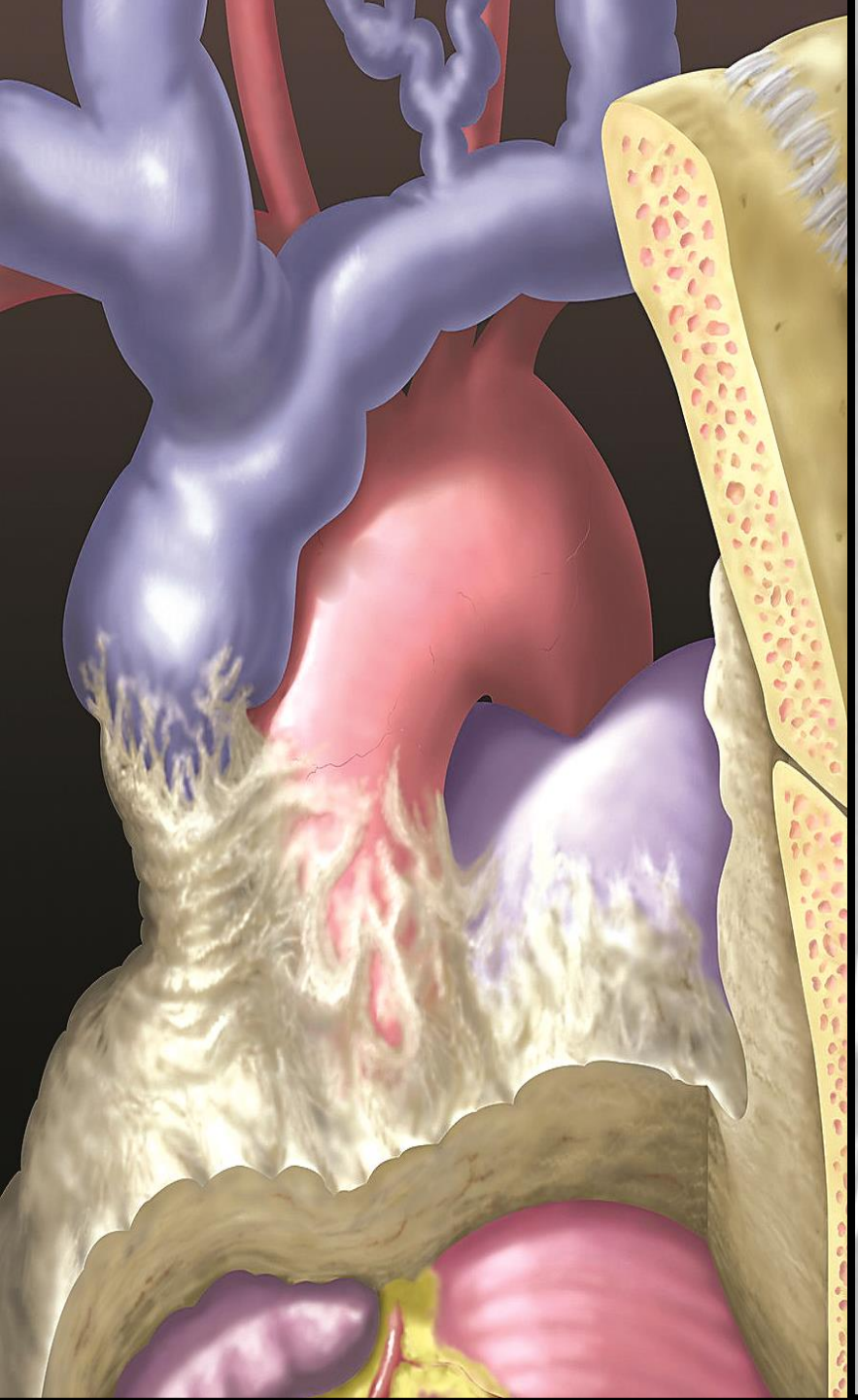
- A slowly-evolving tumefactive fibroinflammatory process in the anterior & middle mediastinum that may present as a discrete mass or an infiltrative lesion that entraps great vessels, thymus, and lung tissue
- May be associated with signs & symptoms of superior vena cava syndrome

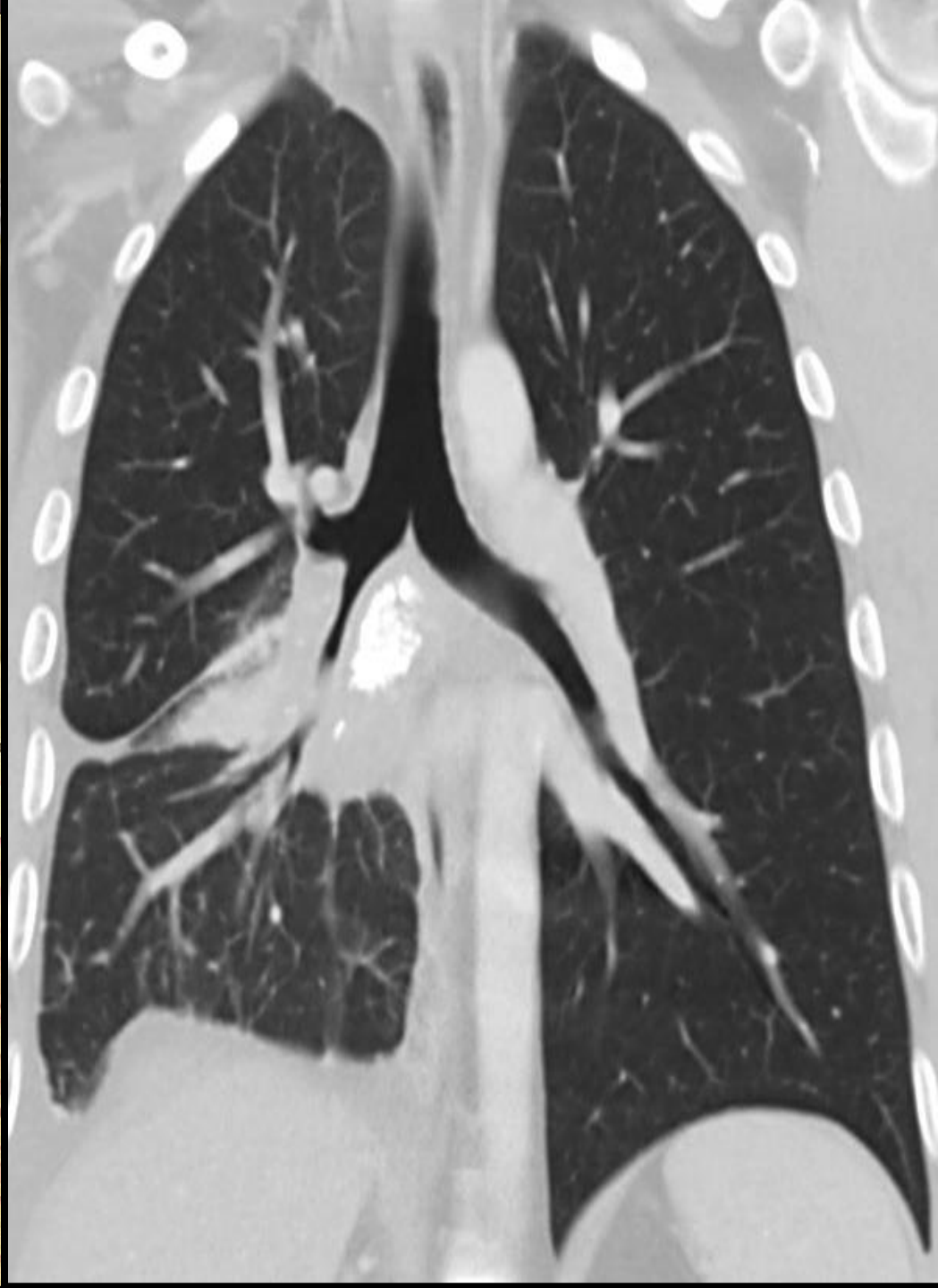
SCLEROSING MEDIASTINITIS:
Other Clinical Data

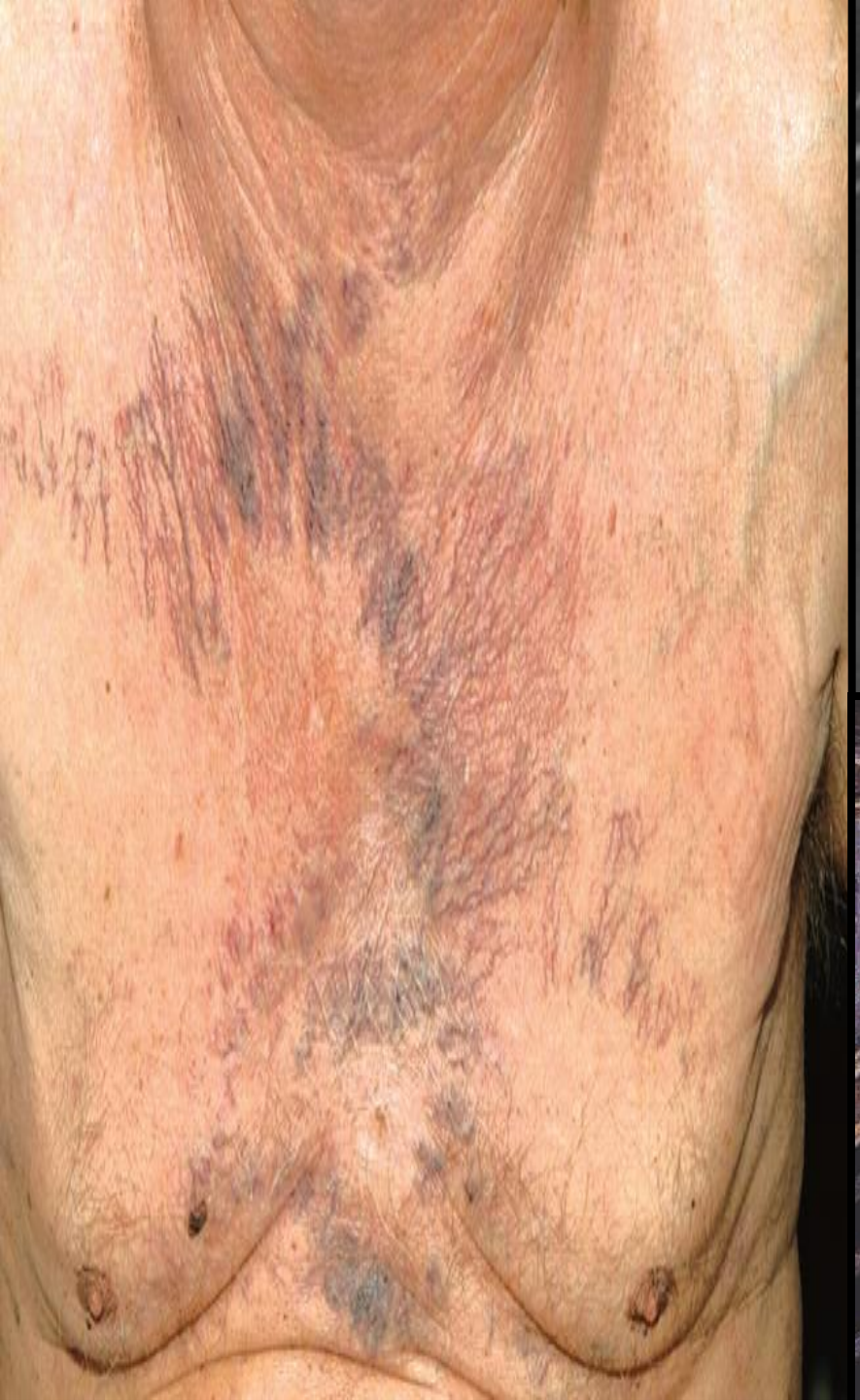
- Most often seen in Caucasian females (F:M ratio 3:1) below the age of 30 yrs.
- Roughly 40% of patients are asymptomatic and have the condition detected radiographically
- The remainder present with cough, short of breath, chest pain, wheezing, dysphagia, or hemoptysis
- Diffuse effacement of mediastinal architecture may be seen radiographically, or a discrete mass can be present with or without calcifications
- Compression of pulmonary artery branches may cause secondary pulmonary infarction

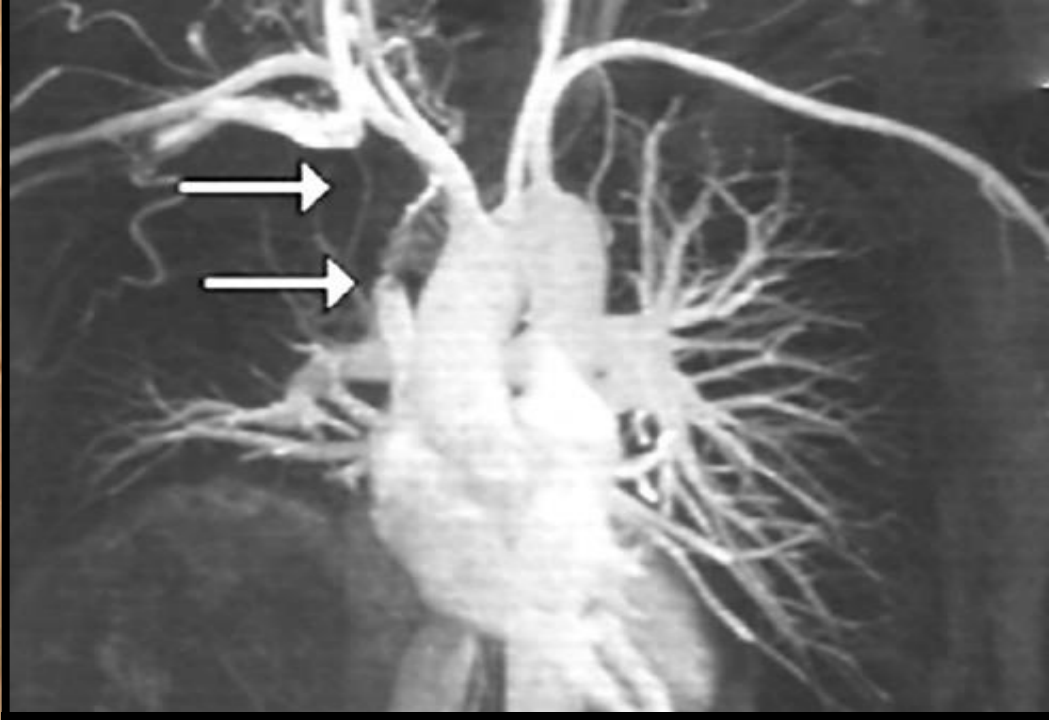


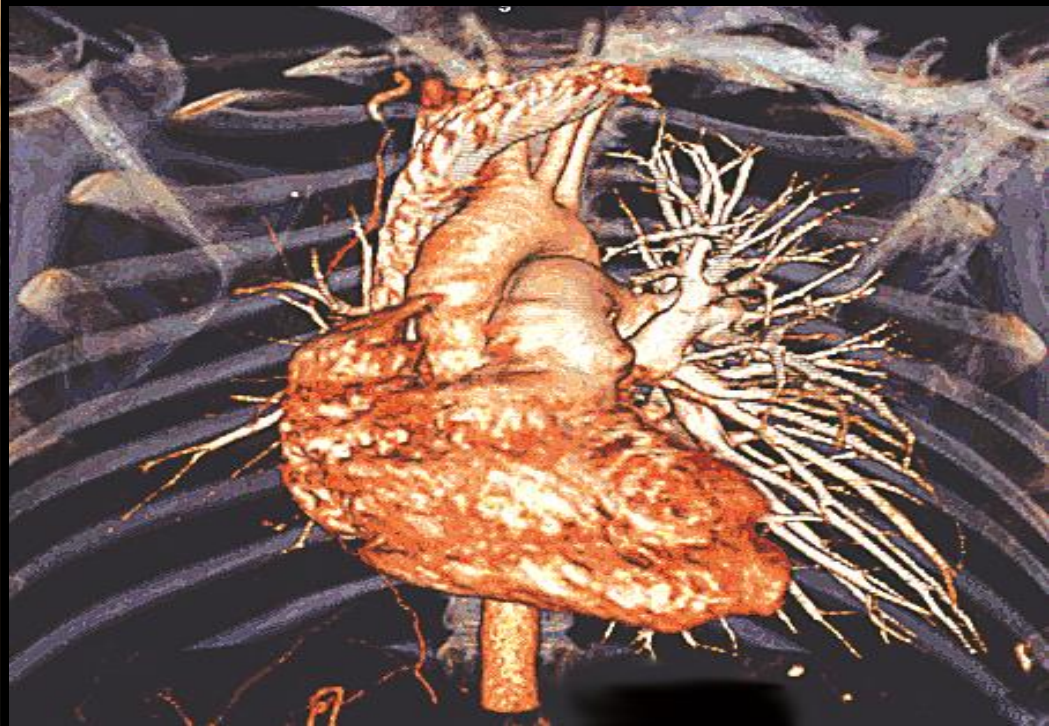










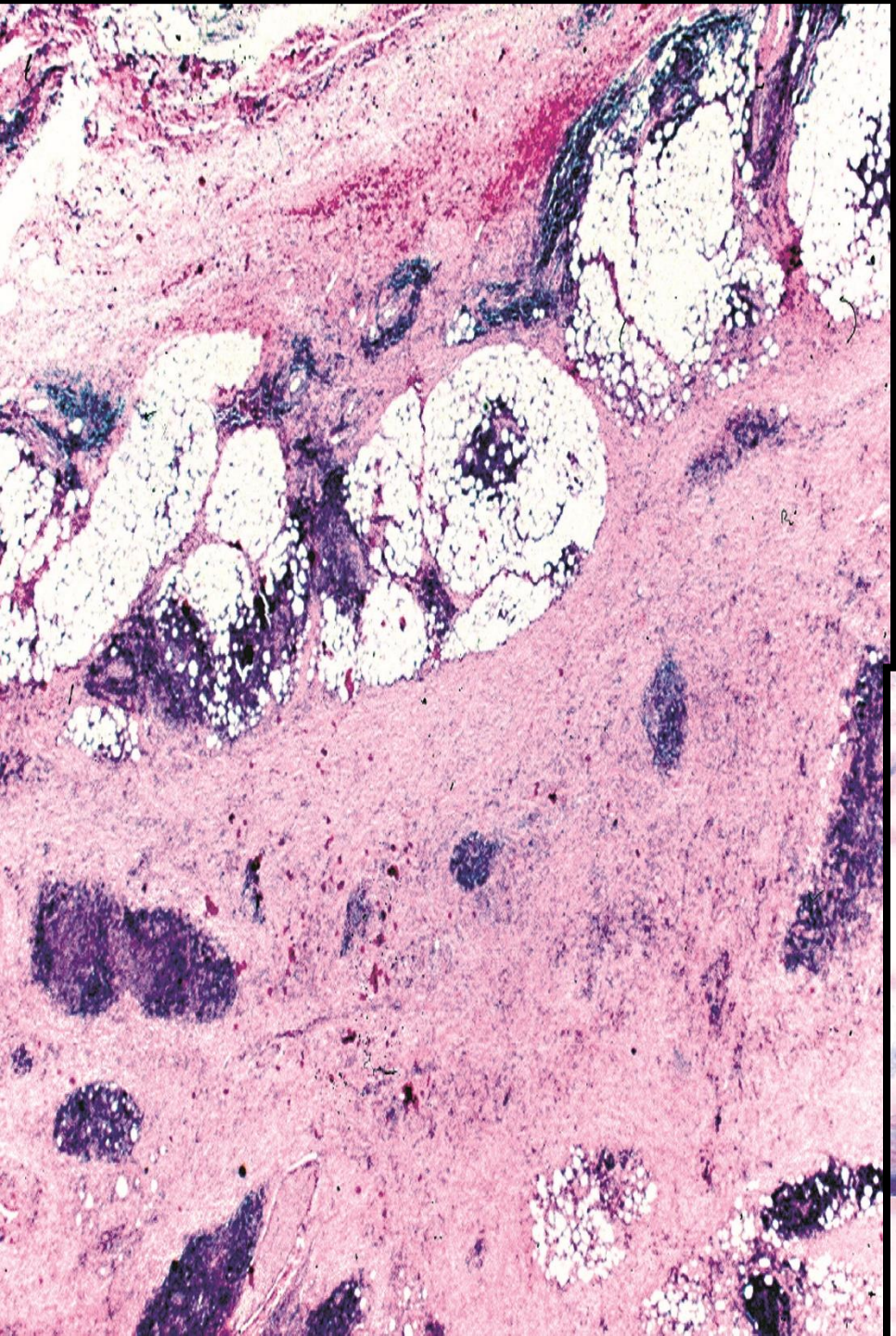


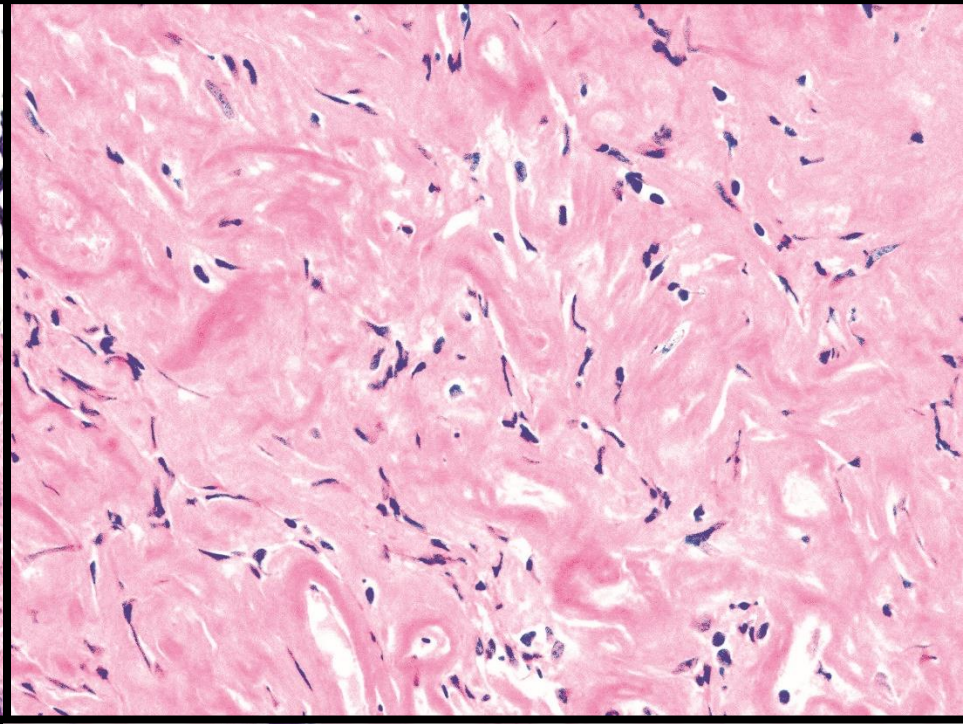
SYNONYMS FOR SCLEROSING MEDIASTINITIS

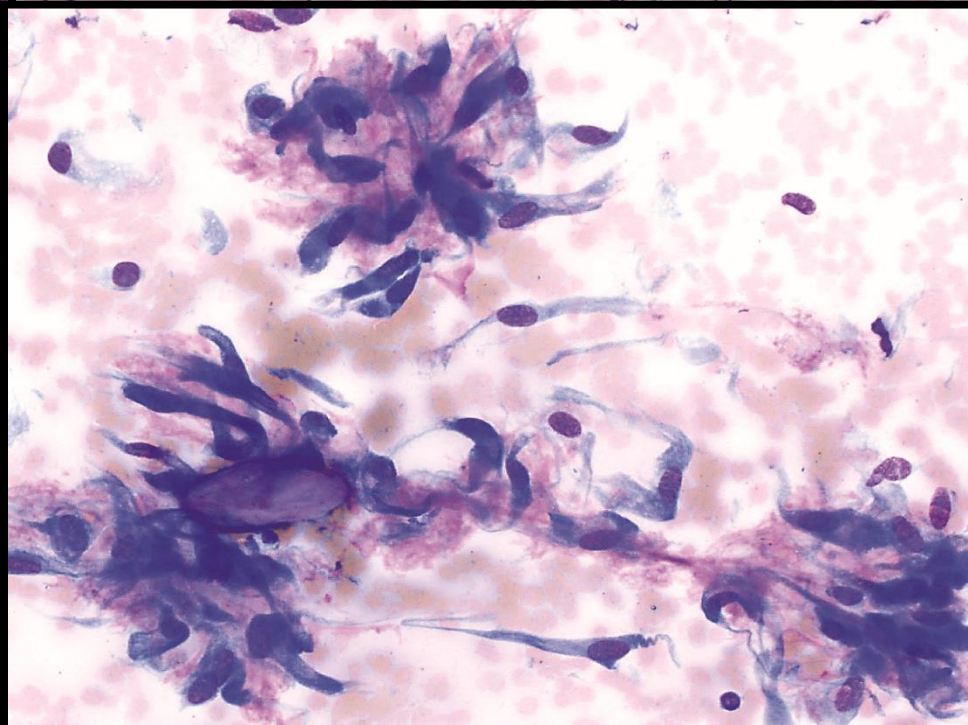
- Fibrosing mediastinitis
- Idiopathic fibrosclerosing disease of the mediastinum
- Granulomatous mediastinitis
- Post-infectious mediastinal fibrosis
- Oulmont's disease

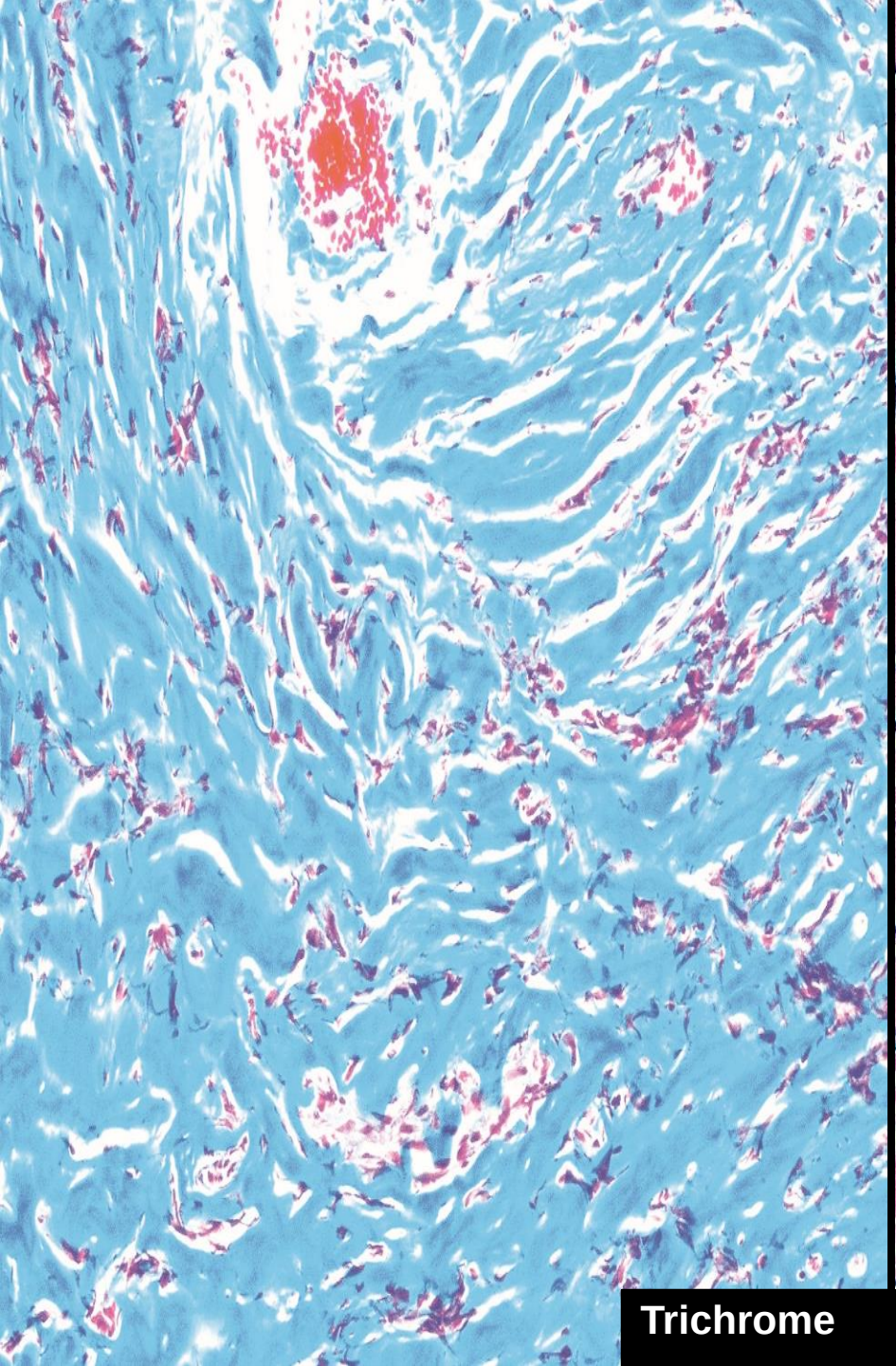
Potential Etiological Factors for Fibrosing Mediastinitis

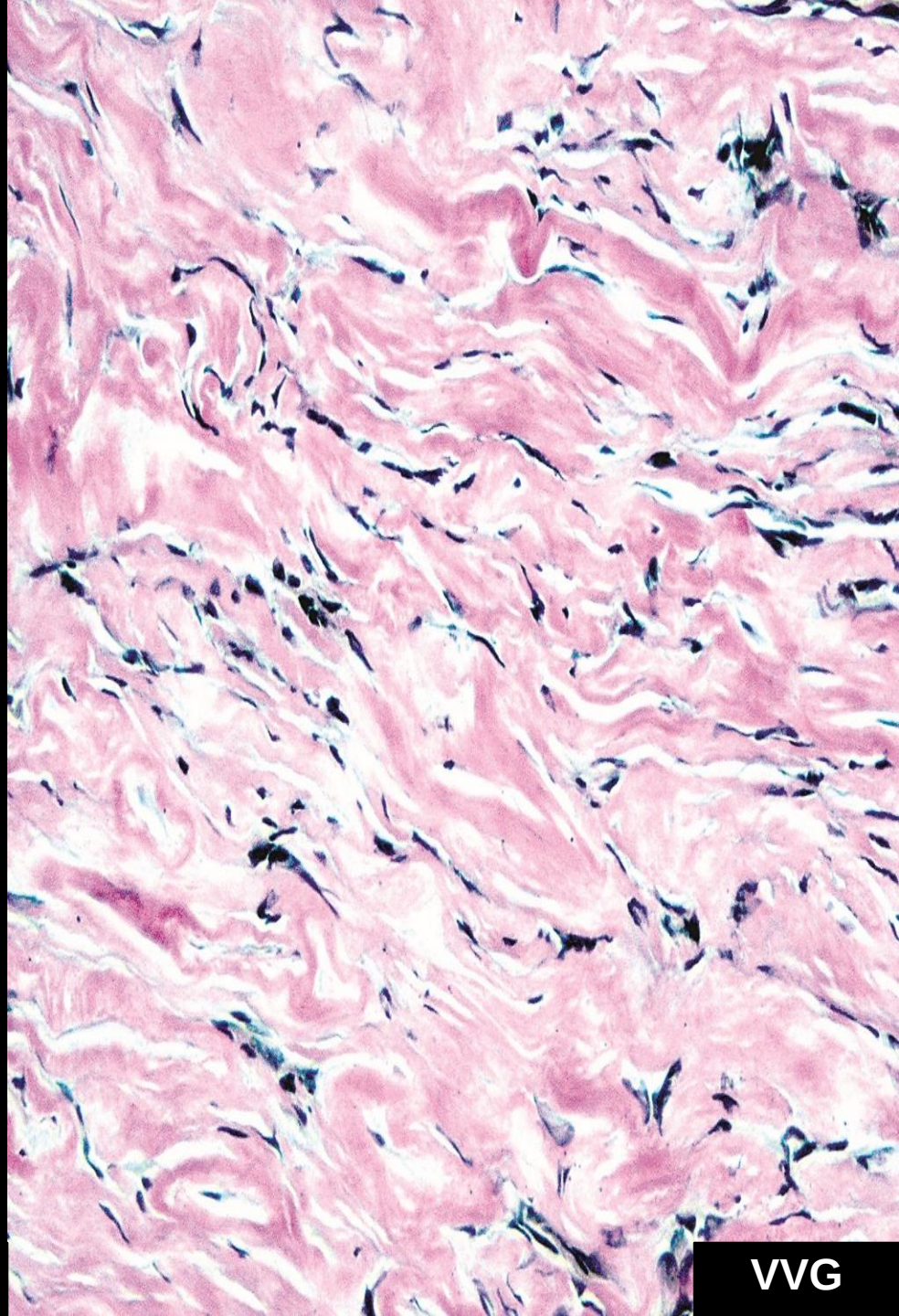
- **Fungal Infections**
  - ***Histoplasmosis***
  - ***Aspergillosis***
  - ***Zygomycosis***
  - ***Cryptococcosis***
- **Mycobacterial Infections**
  - ***Tuberculous***
  - ***Non-tuberculous***
- **Other Bacterial Infections**
  - ***Nocardiosis***
  - ***Actinomycosis***
- **Autoimmune Conditions**
  - ***Behcet syndrome***
  - ***IgG4-related fibrosclerosing disease***
- **Sarcoidosis**
- **Rheumatic Fever**
- **Prior Trauma**
- **Selected Drugs (Methysergide)**
- **Idiopathic**

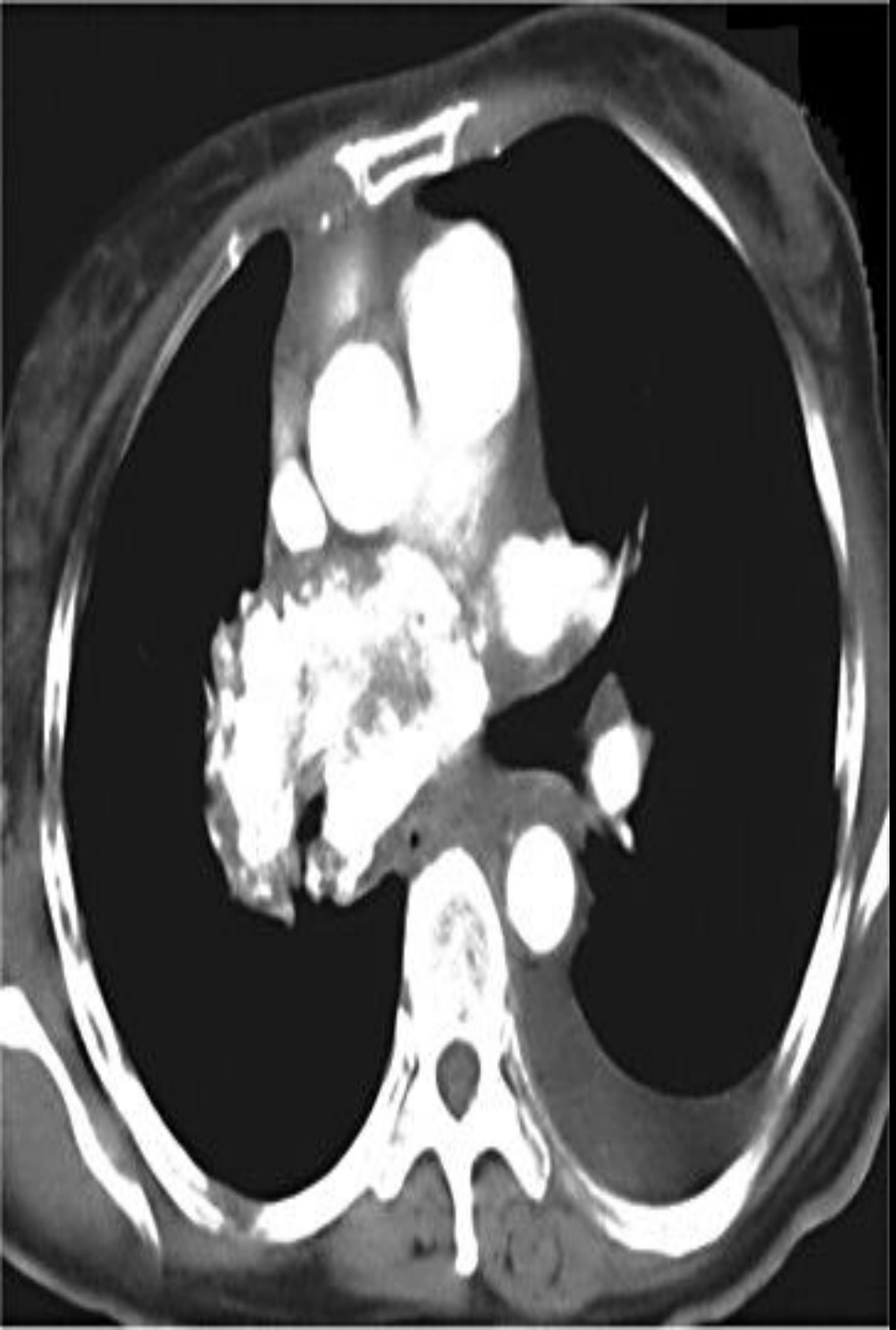


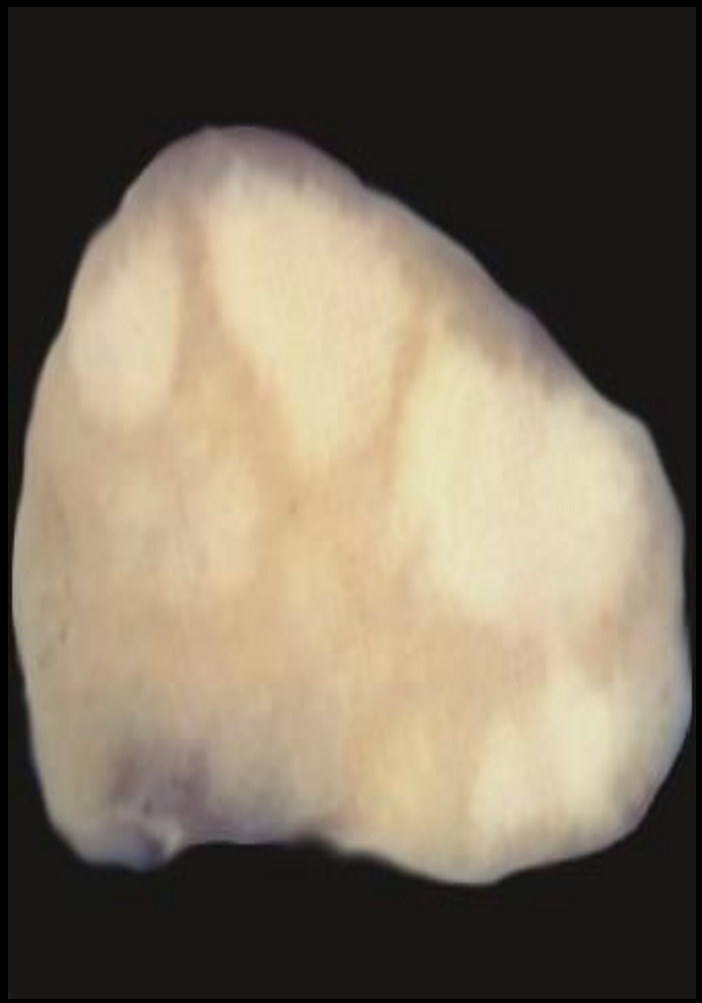


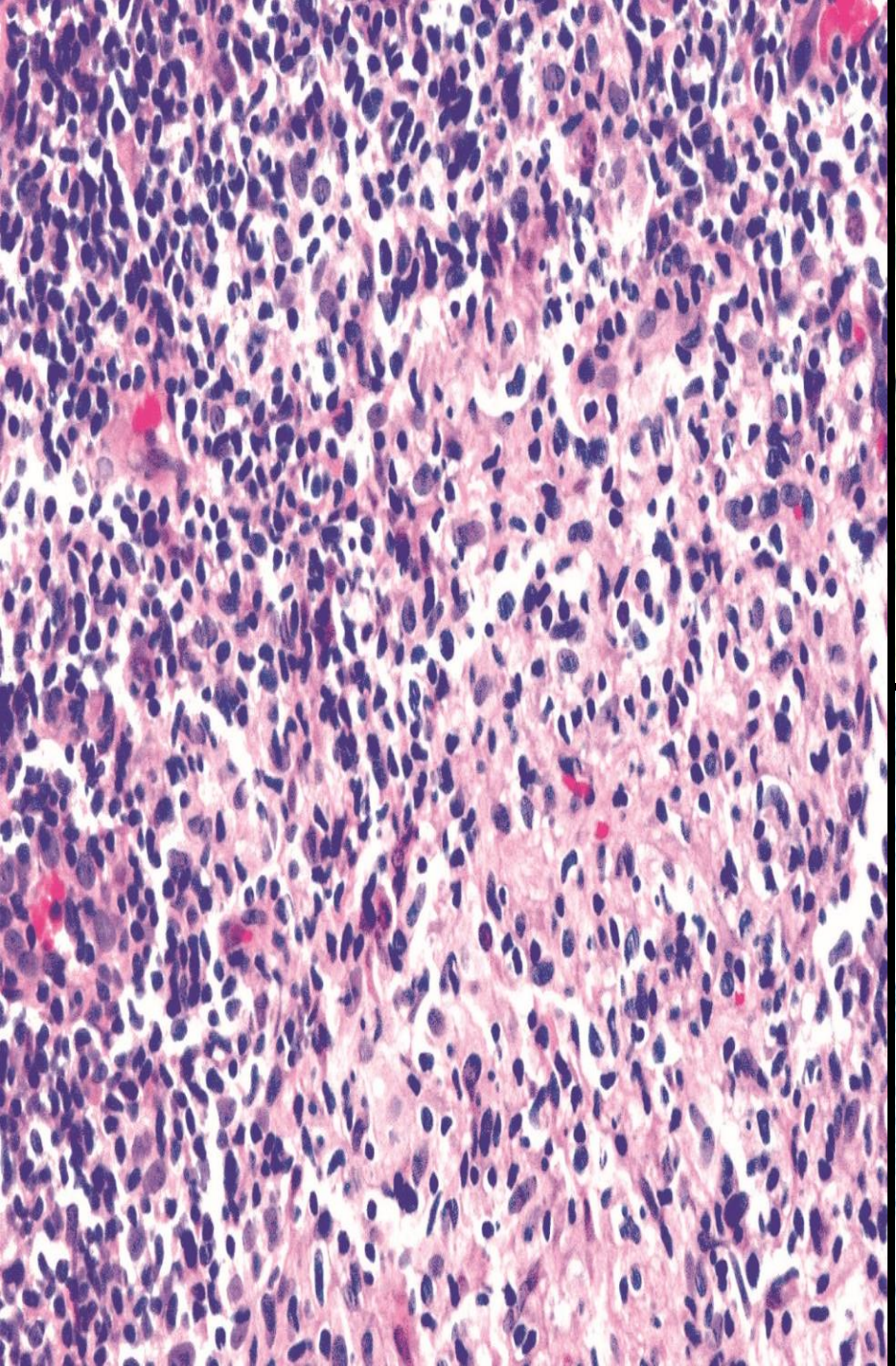


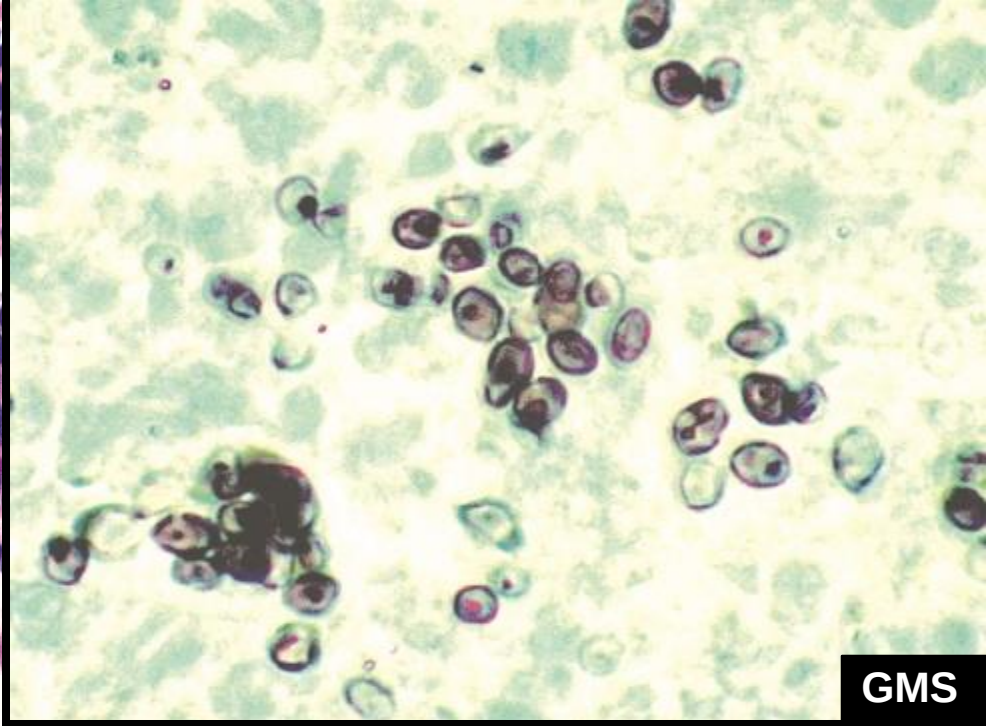

Trichrome

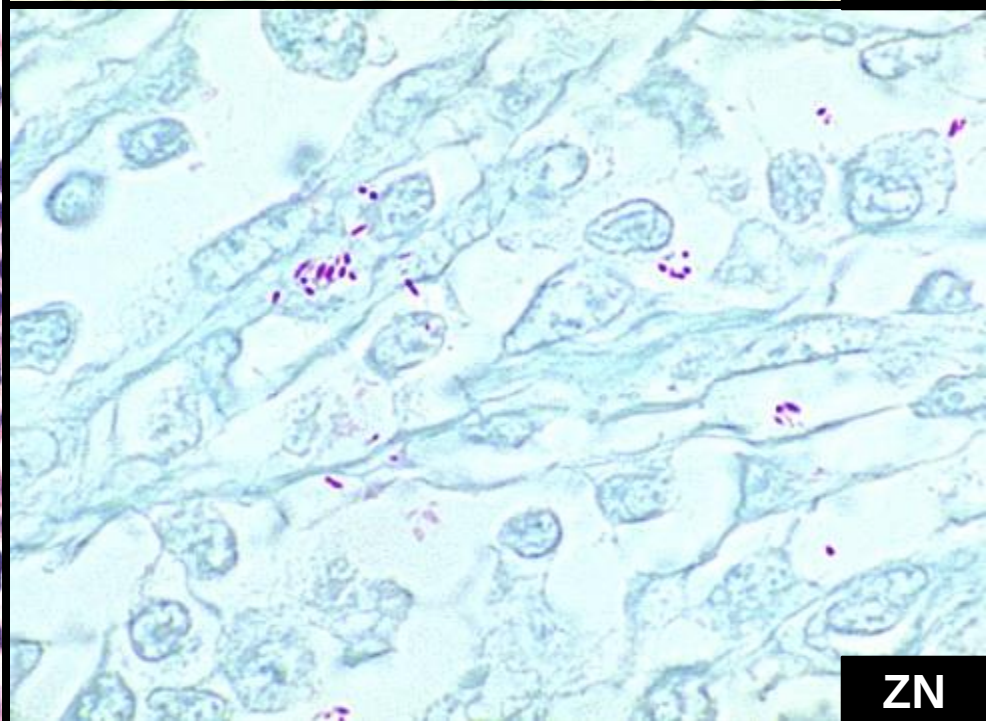

VVG








GMS


ZN

WHAT IS THE RELATIONSHIP BETWEEN SCLEROSING MEDIASTINITIS & IgG4-RELATED FIBROSCLEROSIS?

- This question is still being examined, but the best hypothesis is that ***all*** forms of sclerosing mediastinitis represent a type IV hypersensitivity response that shares similar histologic manifestations, regardless of the inciting factor(s)
- The four principal subsets of the disease are:
  - Infection-related (20-25%)
  - IgG4-related (~30%)
  - Autoimmune disease (*e.g.,* Sjogren syndrome, primary sclerosing cholangitis, primary biliary cirrhosis, inflammatory bowel disease)-related (~20%)
  - Idiopathic (25-30%)

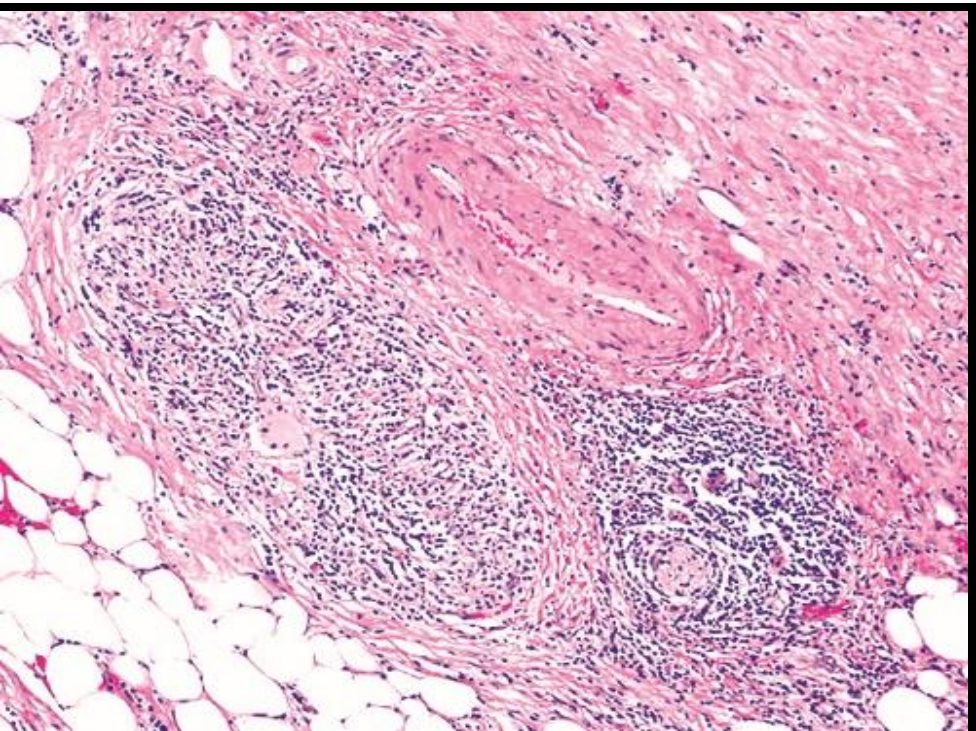
Int J Rheumatol. 2012;2012:207056. doi: 10.1155/2012/207056. Epub 2012 May 10.

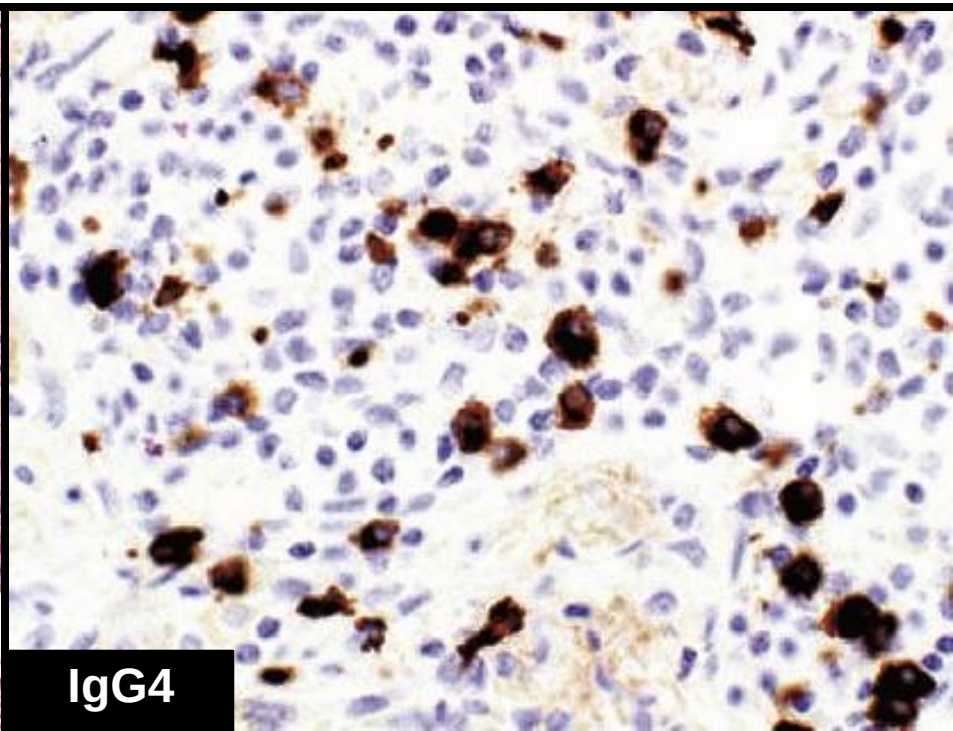
Histopathologic Overlap between Fibrosing Mediastinitis and IgG4-Related Disease.

Peikert T[1], Shrestha B, Aubry MC, Colby TV, Ryu JH, Sekiguchi H, Smyrk TC, Specks U, Yi ES.

Abstract

Fibrosing mediastinitis (FM) and IgG4-related disease (IgG4-RD) are two fibroinflammatory disorders with potentially overlapping clinical and radiological features. In this paper, we looked for histopathologic features of IgG4-RD and enumerated infiltrating IgG4-positive plasma cells within mediastinal tissue biopsies from FM patients. We identified 15 consecutive FM surgical mediastinal tissue biopsies between 1985 and 2006. All patients satisfied the clinical and radiological diagnostic criteria for FM. All patients had either serological or radiological evidence of prior histoplasmosis or granulomatous disease, respectively. Formalin-fixed paraffin-embedded tissue sections of all patients were stained for H&E, IgG, and IgG4. Three samples met the predefined diagnostic criteria for IgG4-RD. In addition, characteristic histopathologic changes of IgG4-RD in the absence of diagnostic numbers of tissue infiltrating IgG4-positive plasma cells were seen in a number of additional cases (storiform cell-rich fibrosis in 11 cases, lymphoplasmacytic infiltrate in 7 cases, and obliterative phlebitis/arteritis in 2 cases). We conclude that up to one-third of histoplasmosis or granulomatous-disease-associated FM cases demonstrate histopathological features of IgG4-RD spectrum. Whether these changes occur as the host immune response against Histoplasma or represent a manifestation of IgG4-RD remains to be determined. Studies to prospectively identify these cases and evaluate their therapeutic responses to glucocorticoids and/or other immunosuppressive agents such as rituximab are warranted.





Mod Pathol. 1999 Mar;12(3):257-64.

Idiopathic fibroinflammatory (fibrosing/sclerosing) lesions of the mediastinum: a study of 30 cases with emphasis on morphologic heterogeneity.

Flieder DB[1], Suster S, Moran CA.

Abstract

The clinicopathologic and immunohistochemical findings in 30 cases of idiopathic fibroinflammatory lesions of the mediastinum are presented. There were 17 male and 13 female patients between 10 and 64 years of age; 19 were African-American, and 10 were Caucasian. Clinically, respiratory and/or systemic symptoms including cough, shortness of breath, and fever were present in 28 patients. Five patients also presented with evidence of superior vena cava syndrome. All of the lesions involved the anterior mediastinum with radiographic evidence of hilar and paratracheal involvement in nine and five patients, respectively. Histologically, the lesions were characterized by an inflammatory fibrosing process that showed three distinctive histologic patterns. On the basis of the histologic pattern, they were subdivided into three distinct groups (stages). Stage I demonstrated edematous fibromyxoid tissue with numerous spindle cells, eosinophils, mast cells, lymphocytes, plasma cells, and thin-walled blood vessels; Stage II showed thick glassy bands of haphazardly arranged collagen with focal interstitial spindle cells, lymphocytes, and plasma cells; and Stage III was characterized by dense acellular collagen with scattered lymphoid follicles and occasional dystrophic calcification. Immunohistochemical studies in 17 cases highlighted large numbers of vimentin- and actin-positive spindle cells and capillary-like vessels in Stage I lesions, with fewer numbers of vimentin-positive, actin-negative spindle cells and vessels in Stage II lesions. Our findings suggest that "sclerosing mediastinitis" represents the final stage of an evolving, dynamic process with different morphologic appearances akin to abnormal wound healing. Thus, we propose the term fibroinflammatory lesion of the mediastinum to convey the true nature of the process.

SCLEROSING MEDIASTINITIS: Outcomes

- Most cases pursue a slowly-evolving, self-limited course that may last for several years
- Administration of antifungal or antimycobacterial drugs empirically does not appear to alter outcomes
- Symptomatic patients may benefit from placement of vascular stents, balloon angioplasty, or surgical reconstructive procedures
- Only ~3% of patients die of cardiorespiratory failure

Because of the potential simulation of sclerosing mediastinitis by other fibrosing conditions, the former diagnosis is one of ultimate exclusion and close correlation with clinical findings

FIBROSING NEOPLASMS THAT MAY SIMULATE SCLEROSING MEDIASTINITIS IN SMALL BIOPSIES

- "Obliterative subtotal sclerosis"-type Hodgkin's lymphoma
- Sclerosing non-Hodgkin lymphoma (large-cell type)
- Sclerosing seminoma
- Desmoplastic mesothelioma presenting in the mediastinum
- Sclerotic ("ancient") thymoma
- Sclerosing thymic carcinoid
- Sclerosing paraganglioma
- Calcifying fibrous pseudotumor
- Solitary fibrous tumor
- Peripheral nerve sheath tumors
- Selected metastatic carcinomas

"Obliterative Subtotal Sclerosis"-Type Hodgkin Lymphoma (HL)

- This terminology was used by Rappaport in the 2nd series AFIP fascicle on hematopoietic tumors in 1966, to refer to a subtype of nodular sclerosis HL cases in which a densely-fibrotic stroma dominated the microscopic image of the lesion
- The OSS variant of HL is not well-recognized by general pathologists, but several publications have described its ability to imitate non-neoplastic fibrosclerosing conditions such as Oulmont's and Ormond's diseases in the mediastinum and retroperitoneum

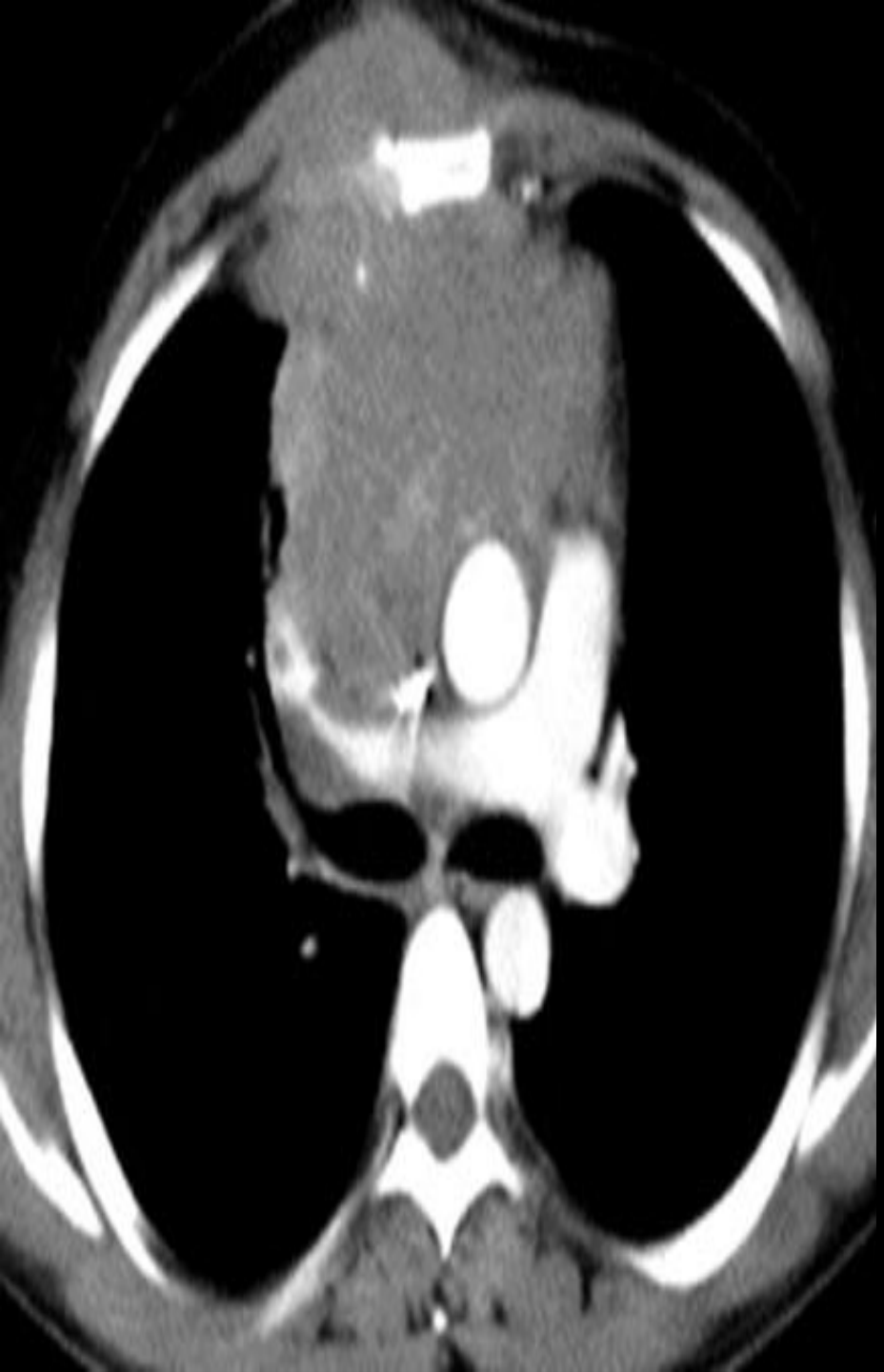
South Med J. 1994 Sep;87(9):921-3.

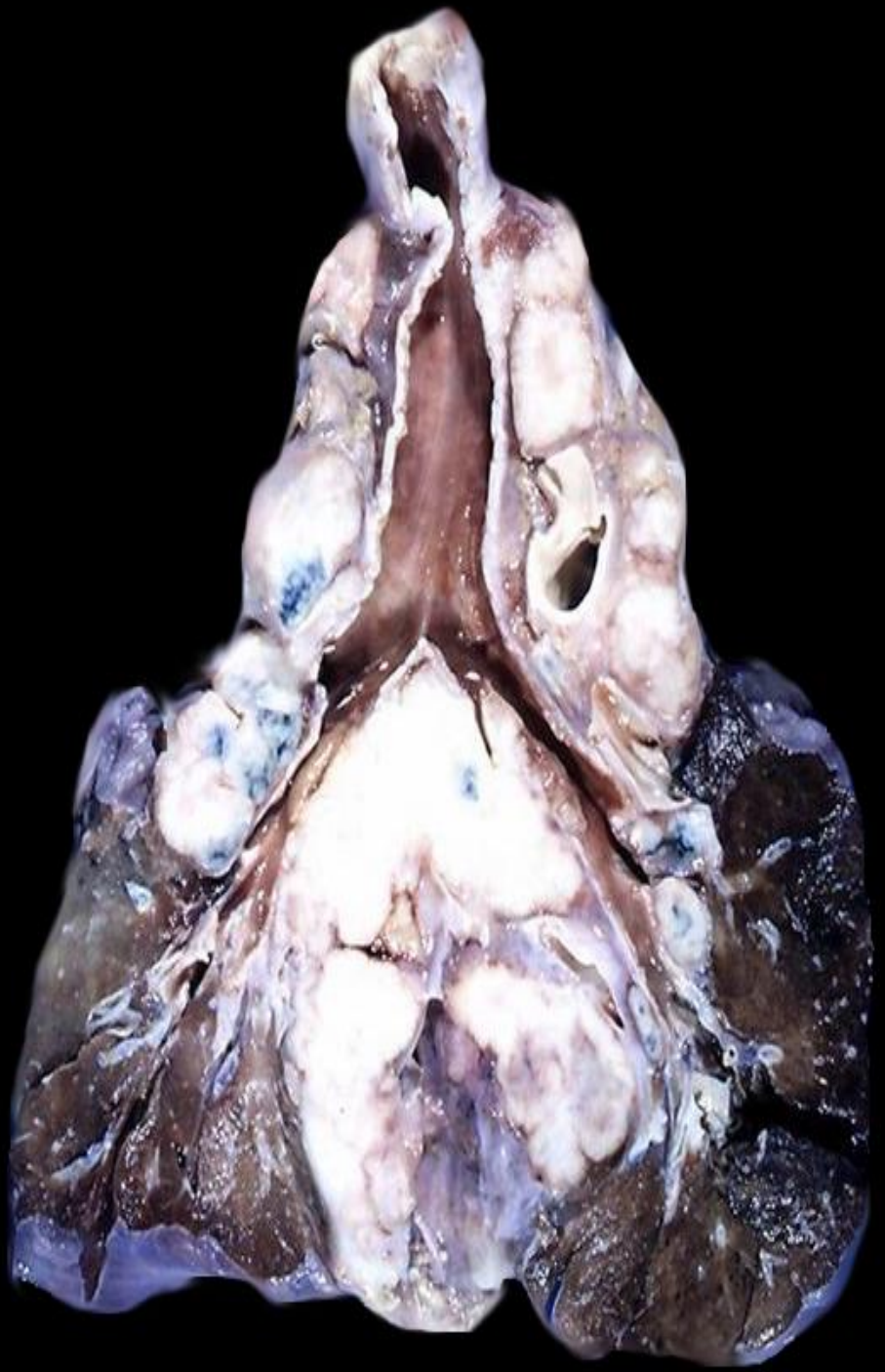
Hodgkin's disease masquerading as sclerosing mediastinitis.

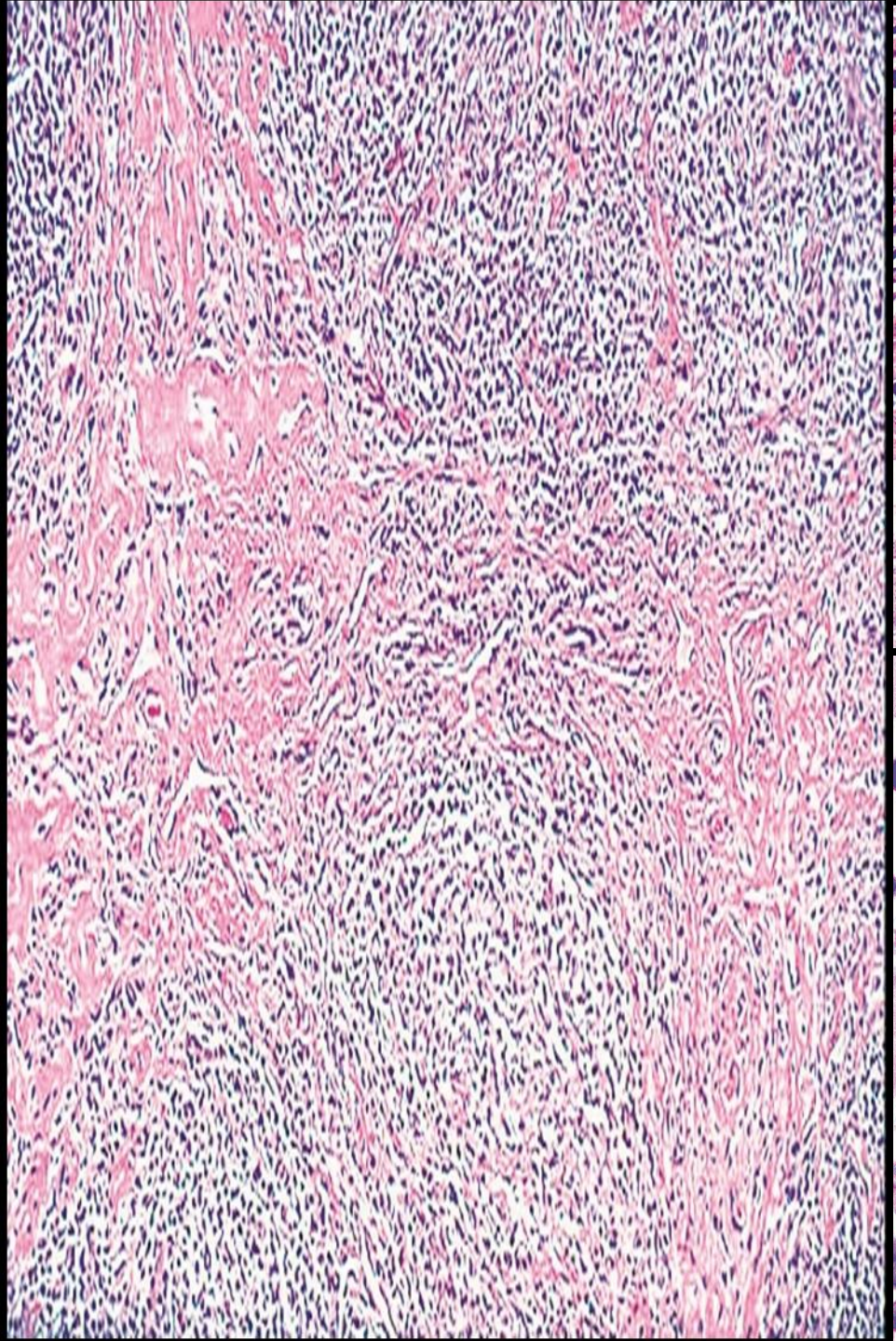
Flannery MT[1], Espino M, Altus P, Messina J, Wallach PM.

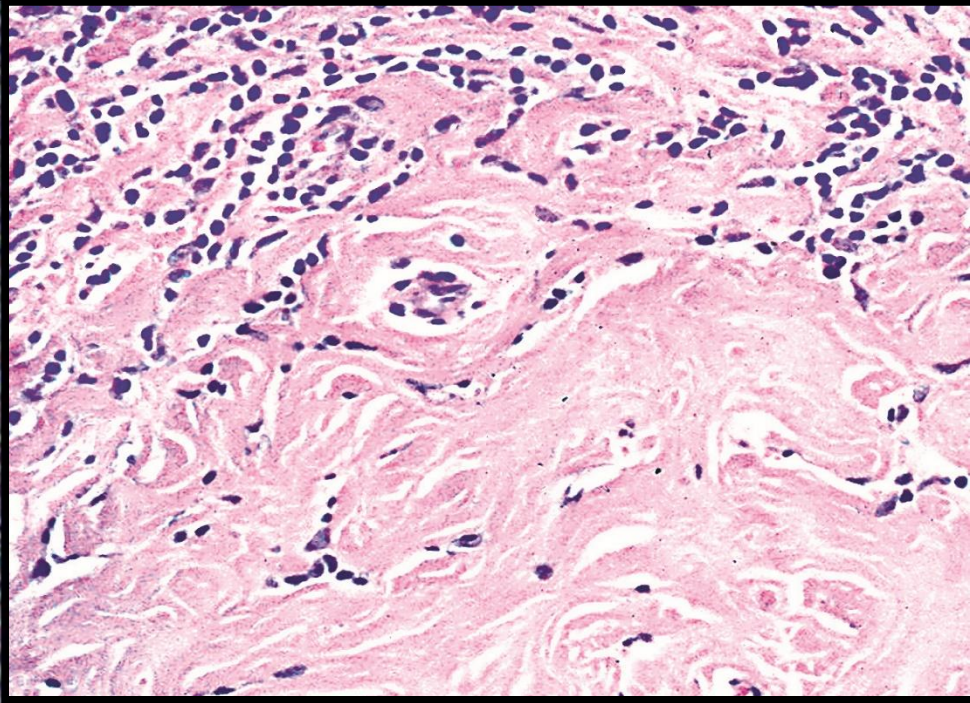
Abstract

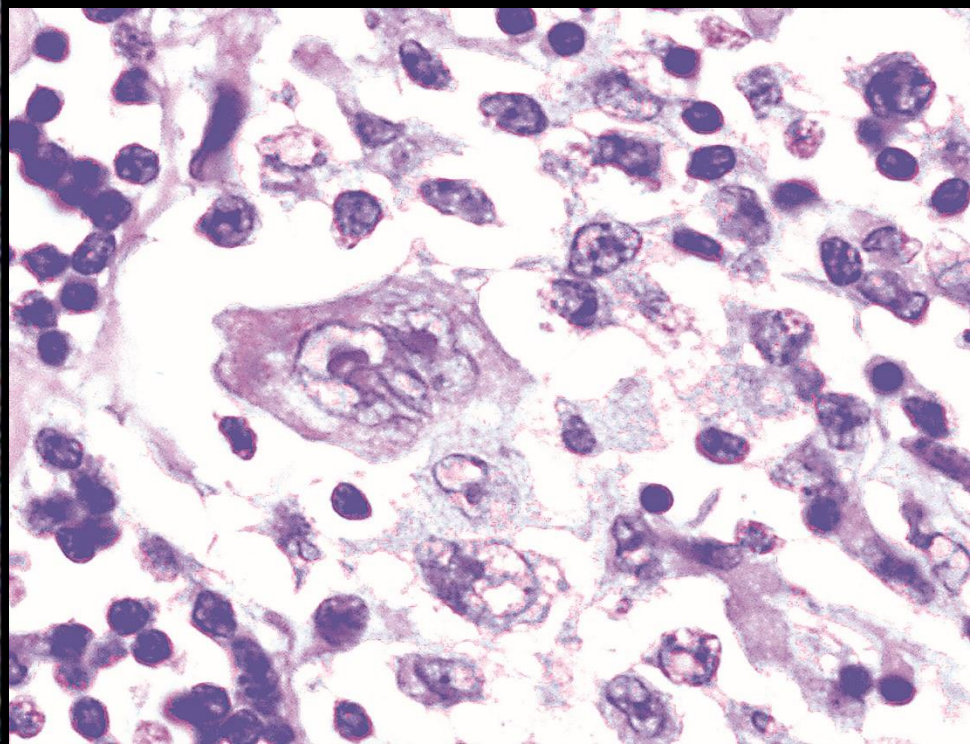
Cases in which fibrotic variants of Hodgkin's disease have been confused with sclerosing mediastinitis have rarely been reported. Sclerosing mediastinitis typically involves the superior/middle mediastinum and, in the United States, is most commonly due to histoplasmosis. We describe the case of a patient who came to us with fevers, a mixed anemia, and a posterior mediastinal mass that on pathologic examination appeared to be due to idiopathic sclerosing mediastinitis. Only inclusion of a biopsy specimen from a local celiac node, after a new porta hepatis mass was found, revealed the correct diagnosis of Hodgkin's disease of the nodular sclerosing type. With the correct diagnosis, early intervention and appropriate therapy resulted in clinical cure.











LARGE-CELL NON-HODGKIN LYMPHOMA OF THE THYMIC REGION, SCLEROSING B-CELL TYPE

- Recognized in the late 1970s & early 1980s as a distinctive intrathoracic neoplasm that could be associated with the superior vena cava syndrome
- Now well-characterized as a B-cell proliferation that is centered in the thymus, with singular cytogenetic & molecular characteristics

Cancer. 1981 Feb 15;47(4):748-56.

Diffuse histiocytic lymphoma with sclerosis: a clinicopathologic entity frequently causing superior venacaval obstruction.

Miller JB, Variakojis D, Bitran JD, Sweet DL, Kinzie JJ, Golomb HM, Ultmann JE.

Abstract

Of 107 patients with diffuse histiocytic lymphoma (DHL) seen at the University of Chicago, 14 (13%) were classified as having moderate to marked sclerosis. Three of the 14 (21%) had predominantly retroperitoneal masses. Fifty percent of our group, however, had bulky disease seen predominantly or exclusively in the mediastinum, and all of these individuals had superior venacaval (SVC) obstruction. Of the seven patients with SVC syndrome, three were in Pathologic Stage IIA, three were in Clinical Stage II, and only one was in Clinical Stage IIIA. No other patients with DHL displayed SVC obstruction or predominantly mediastinal disease. Five of seven patients with SVC syndrome had large cleaved cell histology. In spite of an apparently favorable histopathologic subtype and a tendency to localized involvement, patients with DHL and sclerosis who have bulky or disseminated disease appear to be resistant to megavoltage radiotherapy alone and relatively resistant to combination chemotherapy.

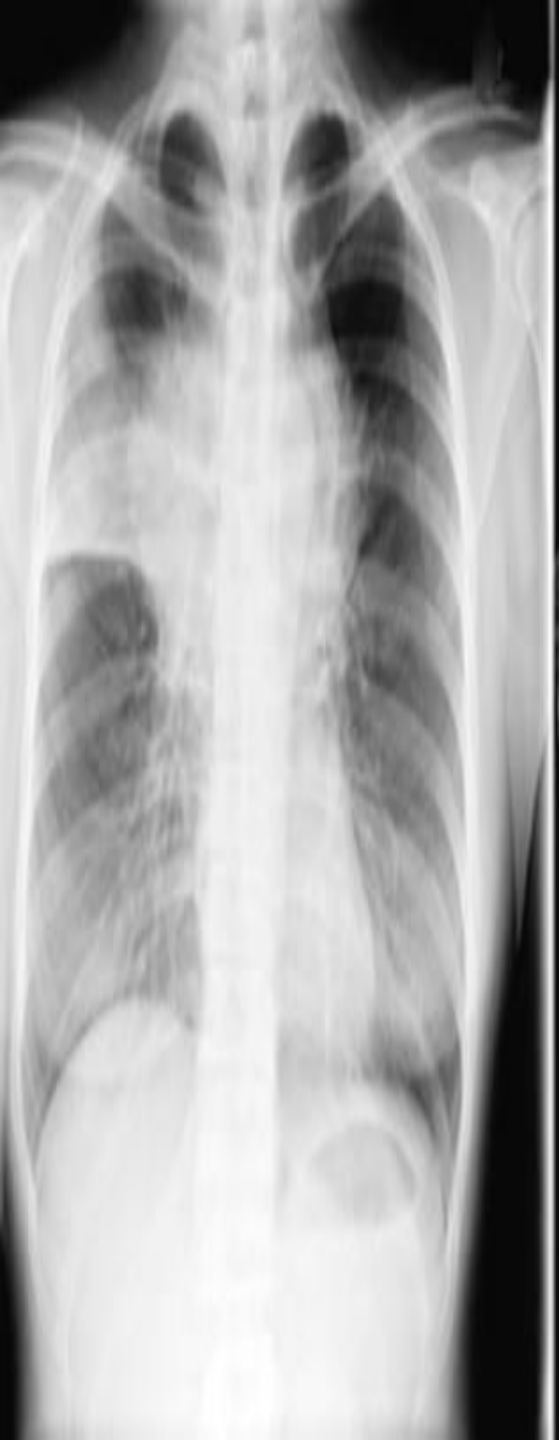
Am J Surg Pathol. 1986 Mar;10(3):176-91.

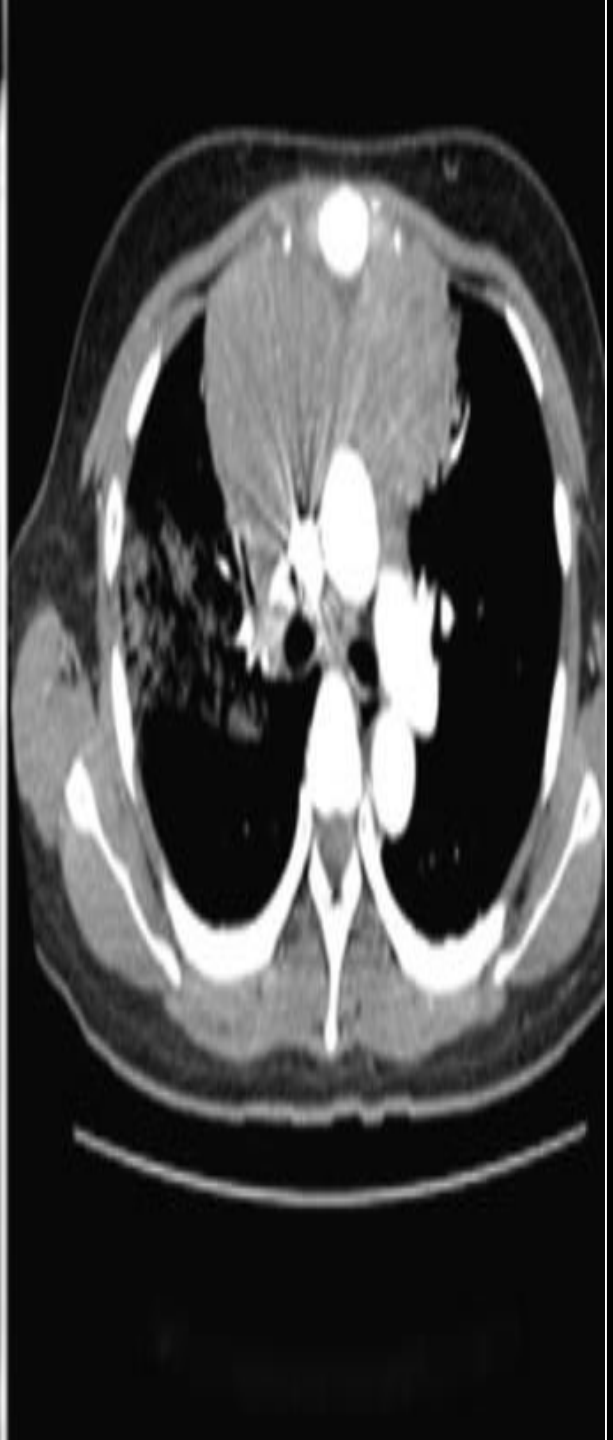
Mediastinal diffuse large-cell lymphoma with sclerosis. A clinicopathologic study of 60 cases.

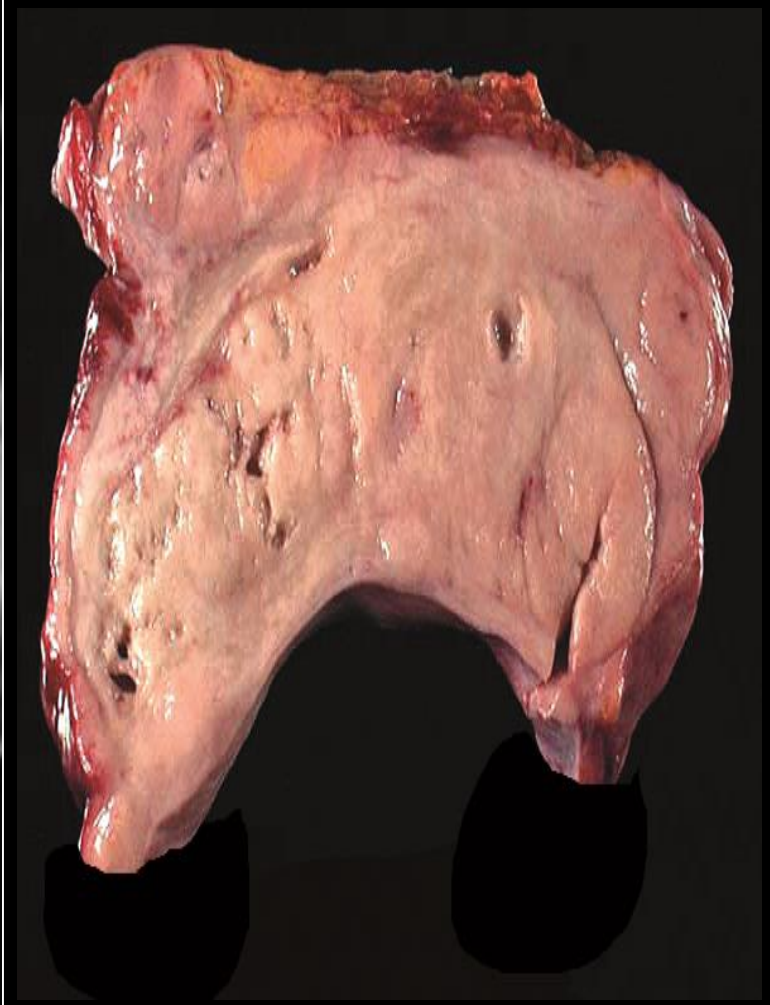
Perrone T, Frizzera G, Rosai J.

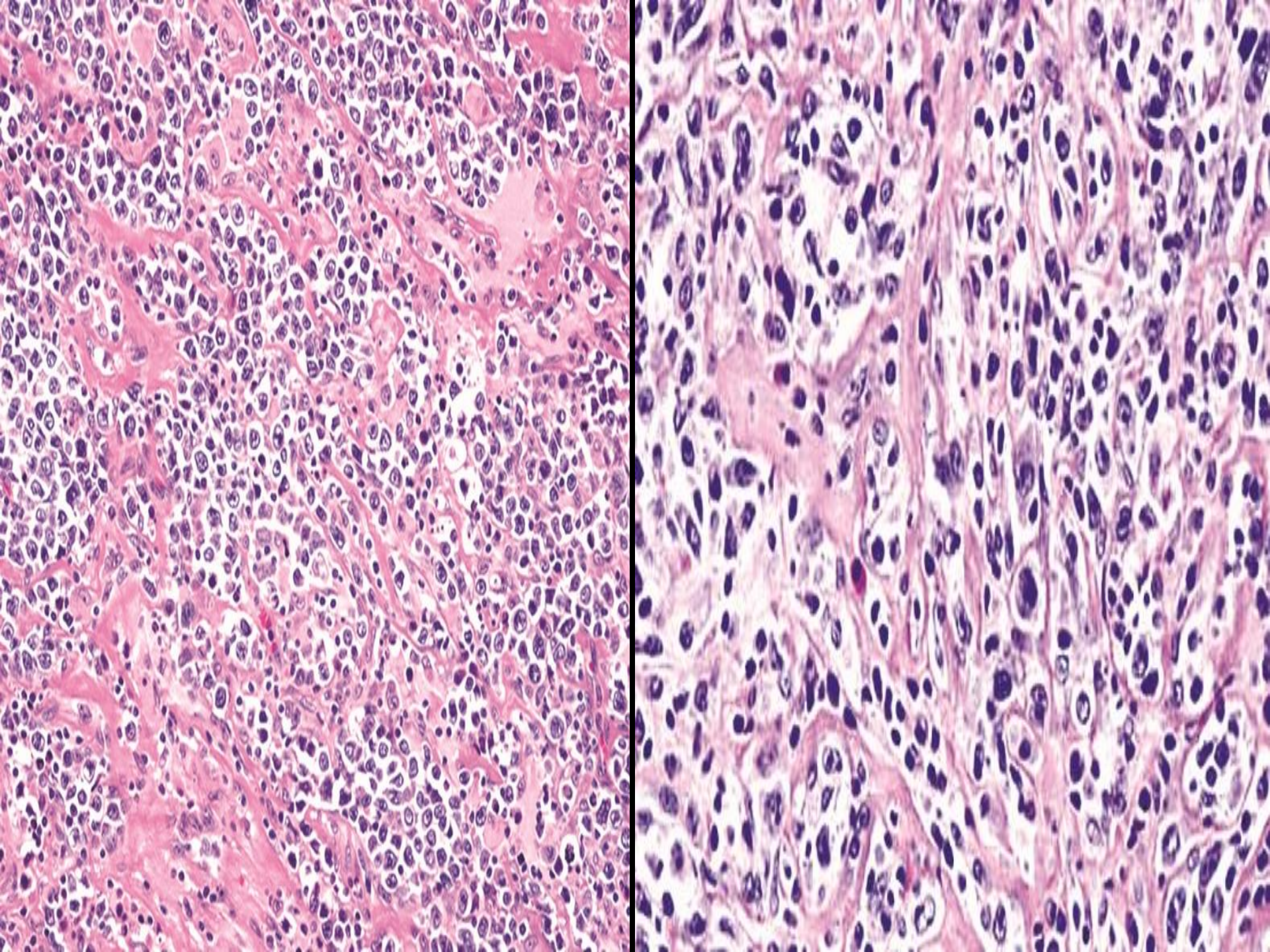
Abstract

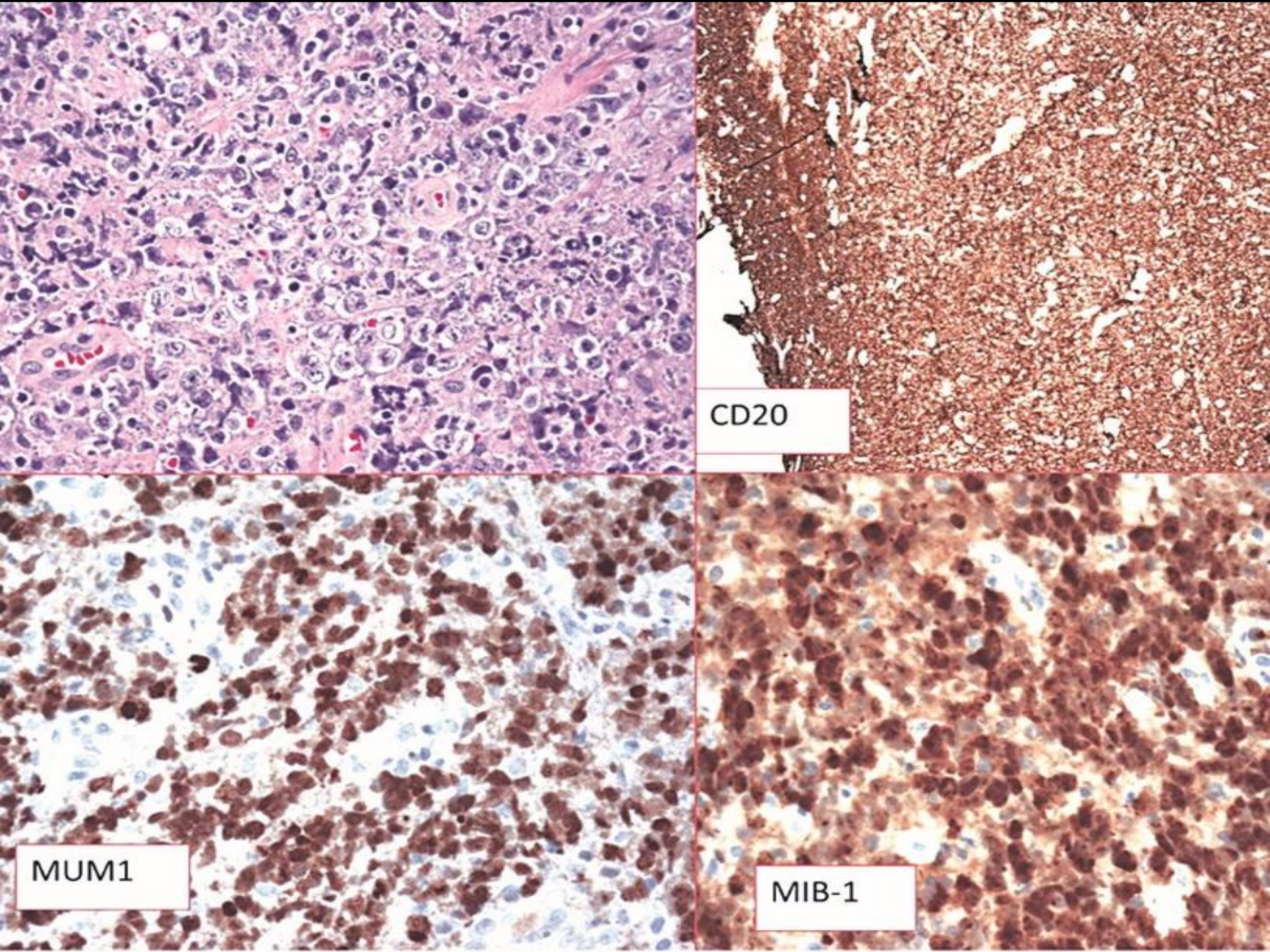
A retrospective analysis was conducted of 60 cases of mediastinal diffuse large-cell lymphoma with sclerosis (MDLLS). The study group consisted of 43 females and 17 males. Eighty-five percent were 35 years of age or younger at time of initial diagnosis. Thirty are alive and well at least 1 year after diagnosis (median: 34.5 months), six are alive with disease (median: 13 months), 20 died of disseminated disease (median: 16.5 months), and four died of other causes. Complete autopsy was performed on eight of the patients who died of disease. The most frequently involved extrathoracic organs were lymph nodes, kidney, liver, pancreas, gastrointestinal tract, and ovary. Fifty-six cases were classified according to the Lukes-Collins scheme: 35 were follicular center cell, 13 immunoblastic T (IBT), seven immunoblastic B (IBB), one a composite of IBB and nodular sclerosing Hodgkin's disease; four cases were unclassifiable. Lymphoreticular origin was proven immunohistochemically in 53 cases, including the four unclassifiable examples and eight cases typed as B-cell tumors. Unfavorable prognostic factors were age less than 25 years at diagnosis, tumor outside the thoracic cavity at presentation, disease recurrence, and IBT or IBB tumor histology. Favorable signs were good response to initial therapy and marked tumor sclerosis. MDLLS is most often mistaken for malignant thymoma, seminoma, and Hodgkin's disease. Criteria helpful for the recognition of MDLLS are discussed.










CD20
MUM1
MIB-1

Haematologica. 2011 Feb;96(2):262-8. doi: 10.3324/haematol.2010.030809. Epub 2010 Oct 22.

Clinical, pathological and genetic features of primary mediastinal large B-cell lymphomas and mediastinal gray zone lymphomas in children.

Oschlies I[1], Burkhardt B, Salaverria I, Rosenwald A, d'Amore ES, Szczepanowski M, Koch K, Hansmann ML, Stein H, Möller P, Reiter A, Zimmermann M, Rosolen A, Siebert R, Jaffe ES, Klapper W.

Author information

Abstract

Background Primary mediastinal large B-cell lymphoma is a rare lymphoma accounting for no more than 3% of all B-cell lymphomas in children and adolescents. However, patients in this young age group with this lymphoma have the shortest event-free survival of patients with any B-cell lymphoma under current standard chemotherapy protocols. Lymphomas with features intermediate between primary mediastinal large B-cell lymphoma and classical Hodgkin's lymphoma (mediastinal gray zone lymphomas) have been acknowledged in the latest World Health Organization classification. Recent studies suggest that mediastinal gray zone lymphomas have an aggressive clinical course whereas patients, at least adult ones, with primary mediastinal large B-cell lymphoma might respond very well to chemotherapy in combination with anti-CD20 antibody.

DESIGN AND METHODS: We aimed to evaluate whether biological differences or so far unrecognized admixed mediastinal gray zone lymphomas might explain the relatively poor outcome of pediatric patients with apparent primary mediastinal large B-cell lymphoma. We, therefore, performed a retrospective histopathological, immunohistochemical and interphase cytogenetic analysis of 52 pediatric lymphomas.

RESULTS: The childhood primary mediastinal large B-cell lymphomas (n=44) showed a similar pattern of histology, immunophenotype and gains at 9p (59%) and 2p (41%) as adult cases, as determined from published data. We identified only four so far unrecognized cases of mediastinal gray zone lymphoma among 52 lymphomas registered in previous trials. Conclusions Mediastinal gray zone lymphoma is very rare in children and adolescents. It does, therefore, seem unlikely that these lymphomas account for the unsatisfactory clinical results with current therapy protocols in pediatric patients. These data have major implications for the design of future treatment protocols for mediastinal lymphomas in children and adolescents.

SCLEROSING SEMINOMA OF THE MEDIASTINUM

- A rare variant of seminoma, previously reported only in the testis; the speaker also has observed 3 such cases in the anterior mediastinum
- Tumor cells are scant in number and obscured by stromal fibrosis and chronic inflammation
- Immunostains for PLAP, CD117, OCT ¾, and SALL4 are usually necessary to document the presence of neoplastic germ cells in such tumors

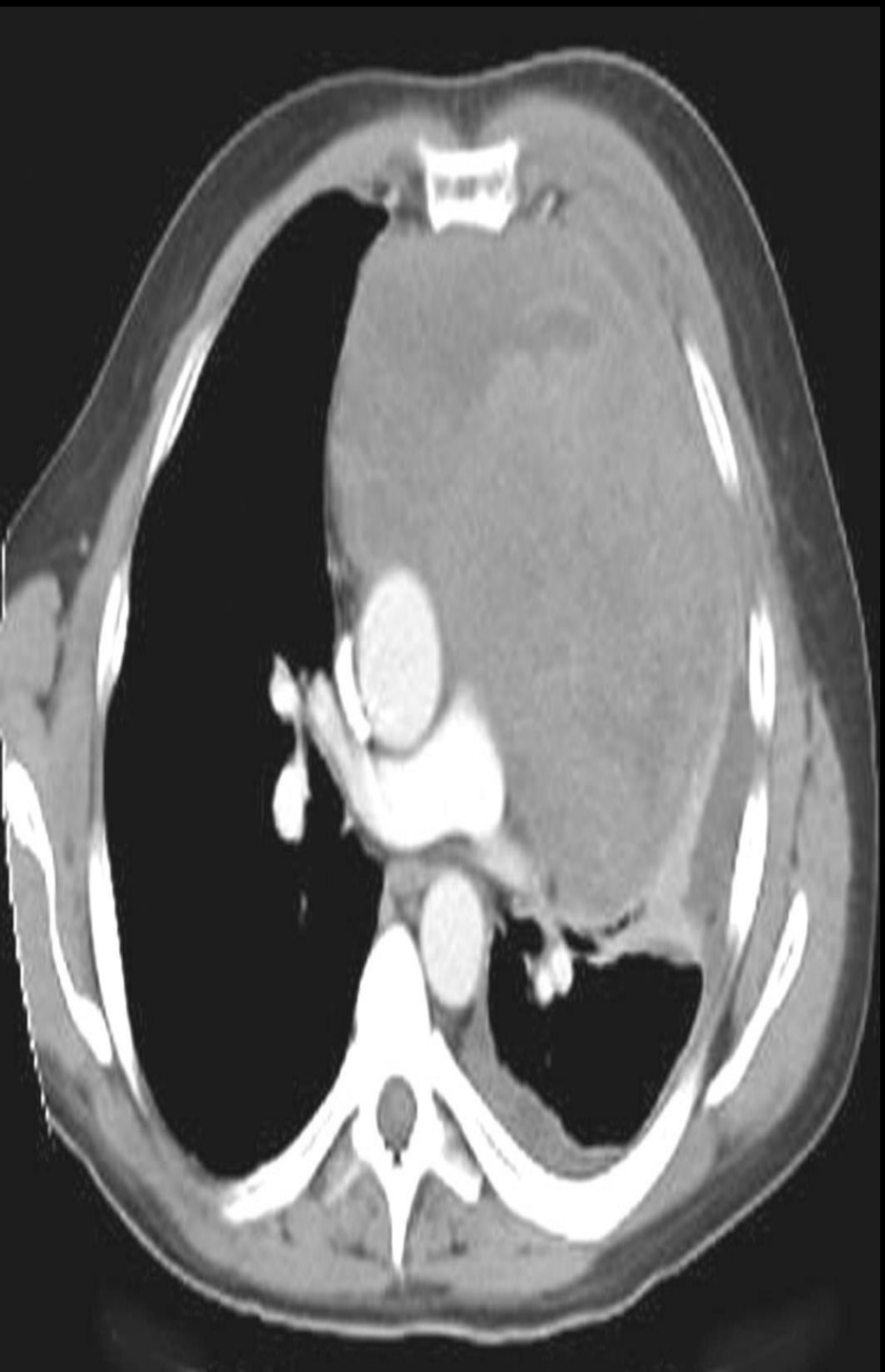
Arch Pathol Lab Med. 1980 Oct;104(10):527-30.

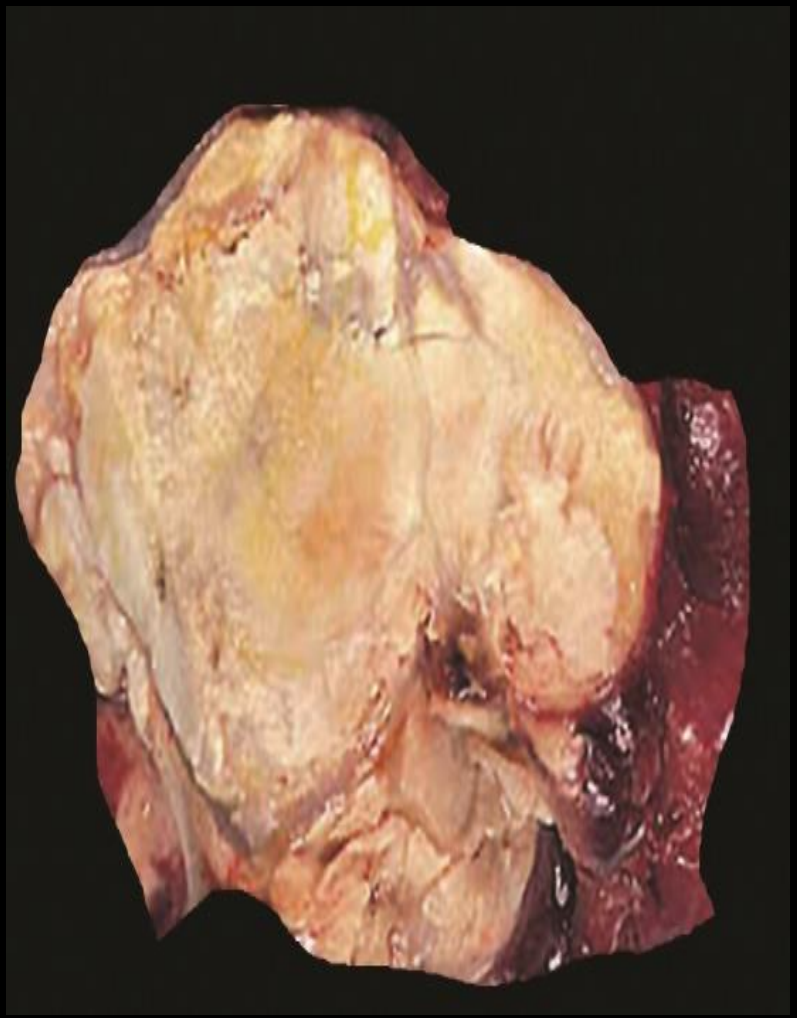
Cribriform and sclerosing seminoma devoid of lymphoid infiltrates.

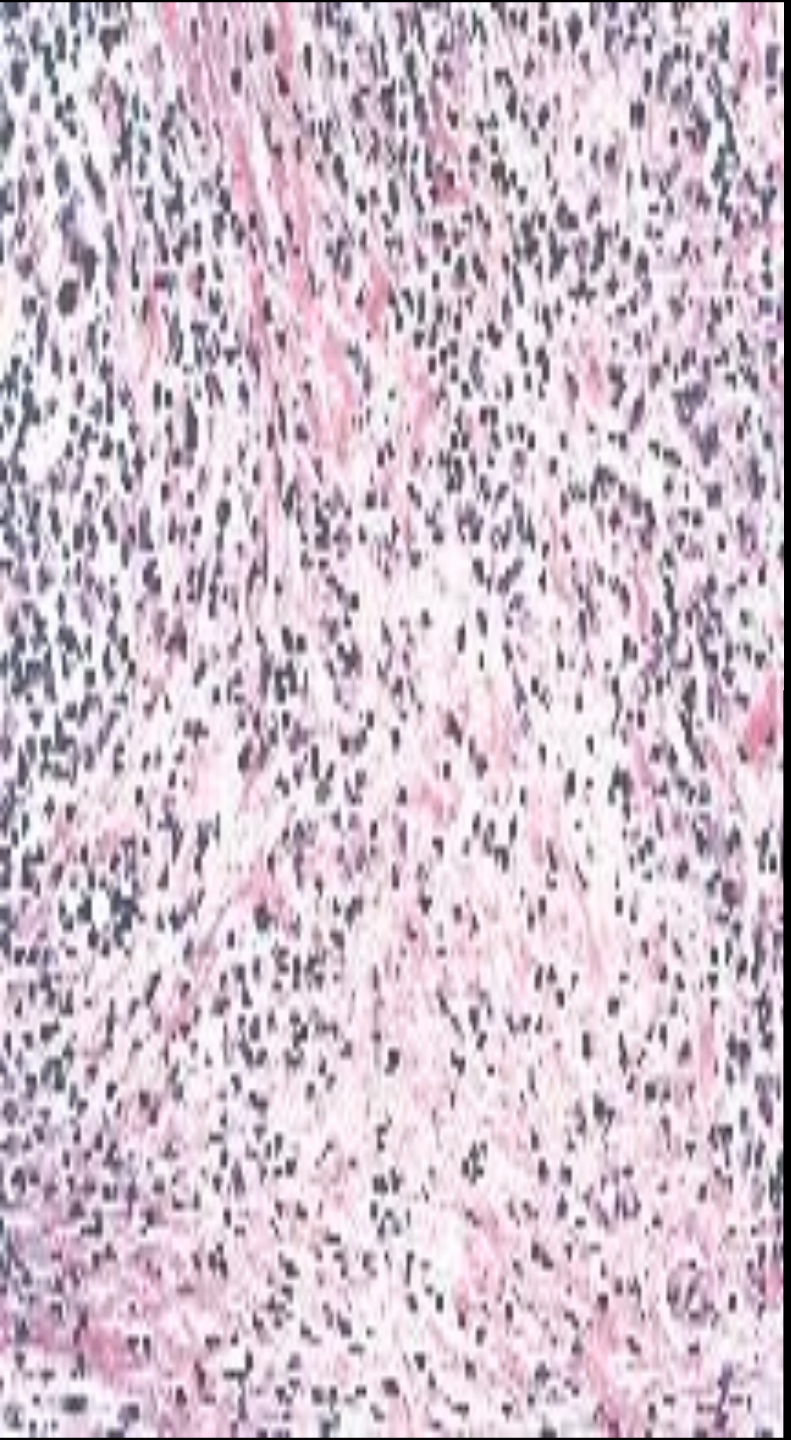
Damjanov I, Niejadlik DC, Rabuffo JV, Donadio JA.

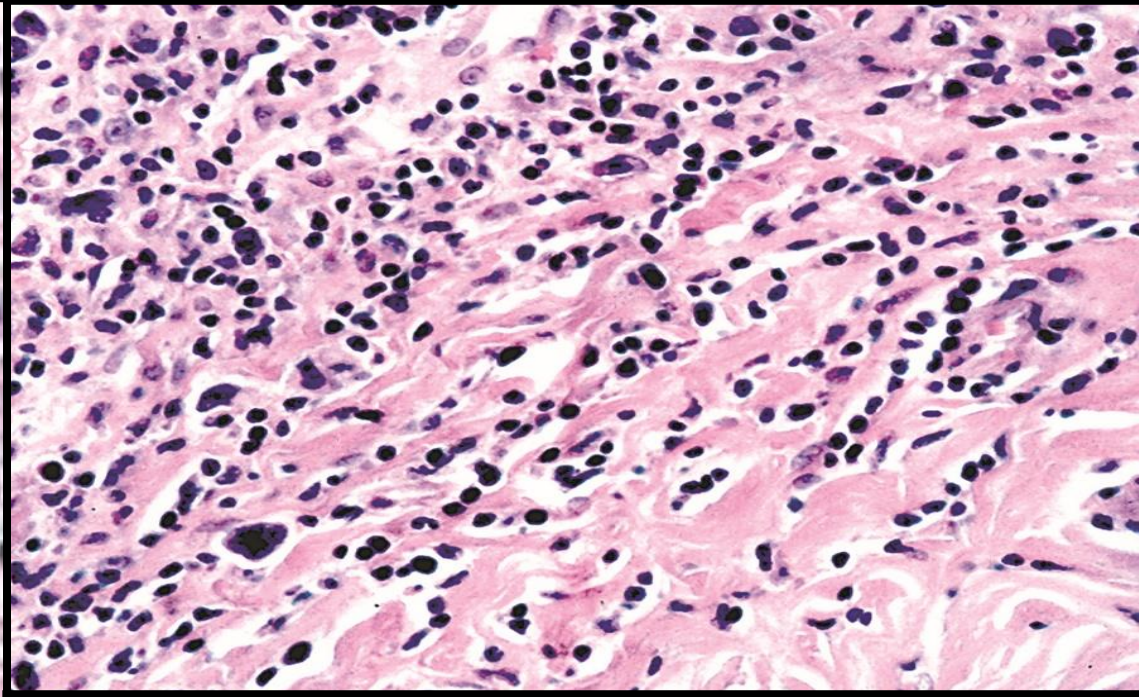
Abstract

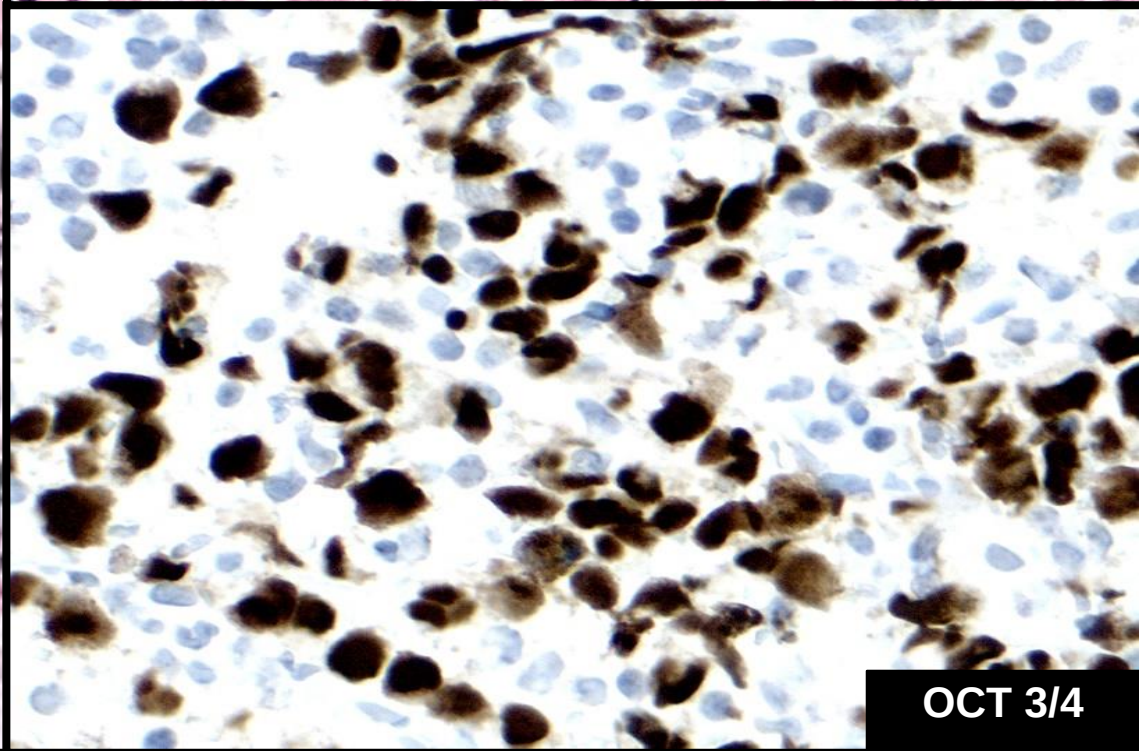
The clinical, gross, microscopic, and ultrastructural features of a histologically atypical testicular seminoma were studied. Microscopically, the tumor consisted of uniform polygonal cells, with either clear or granular cytoplasm, arranged in a nested cribriform pattern. Nests of tumor cells were surrounded by broad bands of acellular fibrous tissue devoid of typical lymphoid infiltrates. Ultrastructurally, the tumor was indistinguishable from classic seminoma. Despite the large size of the tumor and the presence of abdominal metastases, the patient's condition responded favorably to chemotherapy and he is free of tumor four years after initial therapy.










OCT 3/4

DESMOPLASTIC MESOTHELIOMA OF THE MEDIASTINUM (DMM)

- An uncommon histologic variant of an uncommon neoplasm in an uncommon anatomical location
- DMM may be surprisingly hypocellular, with a predominance of hyalinizing stroma which superficially resembles the histologic appearance of a fibrohyaline (asbestos-related) serosal plaque
- At least modest nuclear atypia and growth into fat are necessary microscopic diagnostic elements
- Neoplastic cells are pankeratin-positive

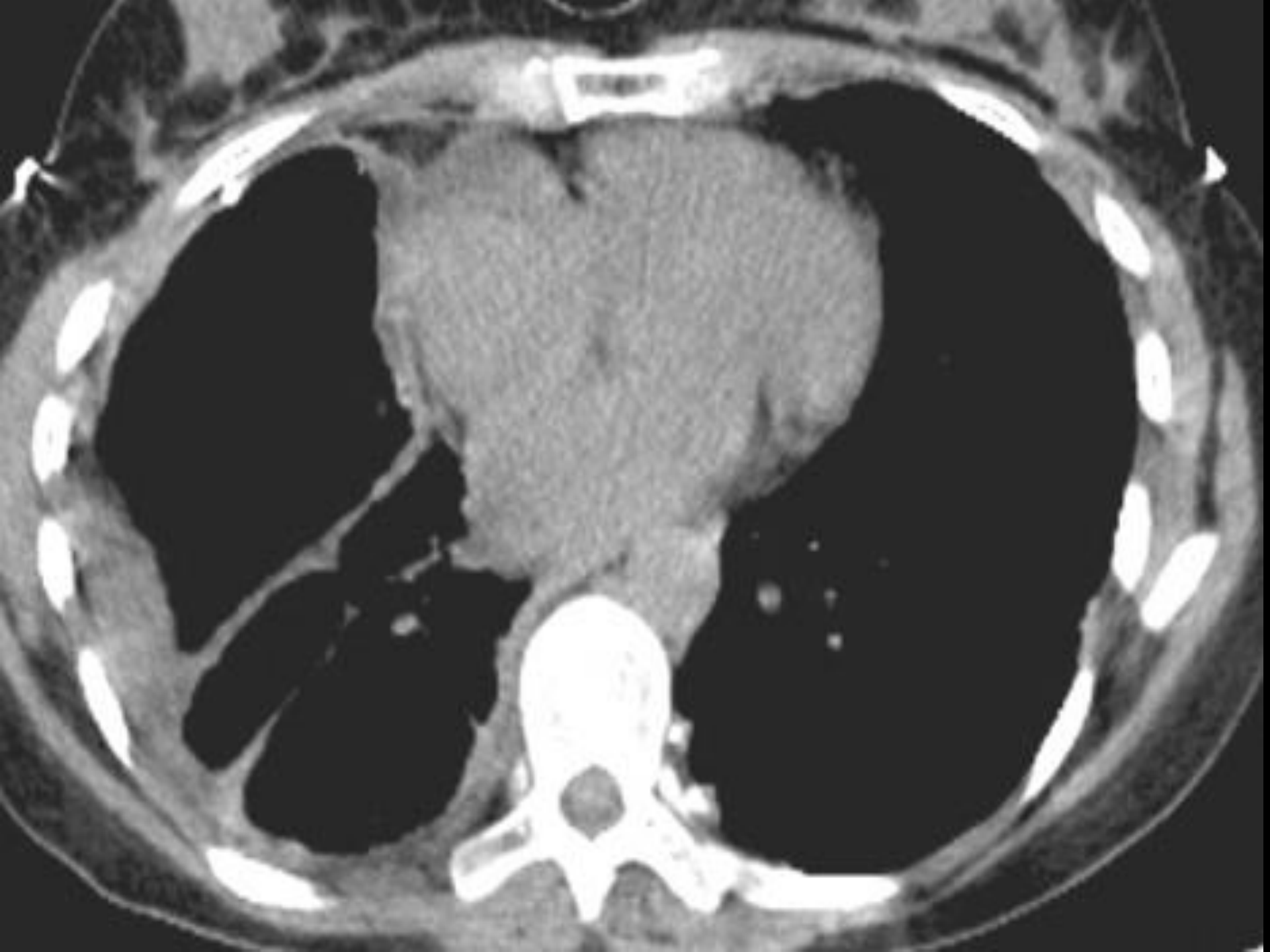
Hum Pathol. 1992 Jan;23(1):79-82.

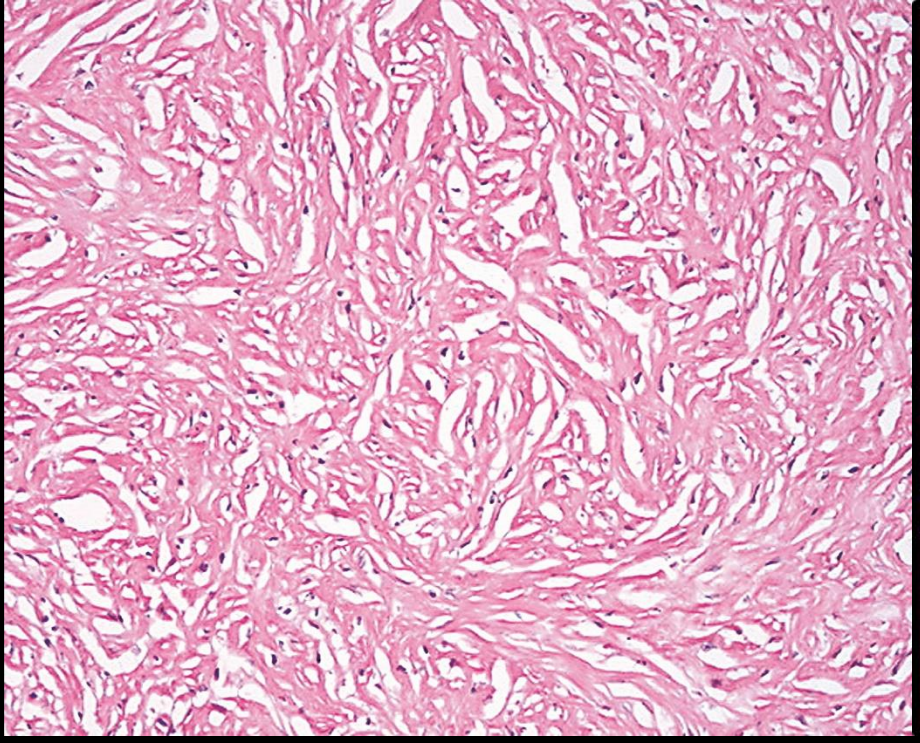
Desmoplastic malignant mesothelioma masquerading as sclerosing mediastinitis: a diagnostic dilemma.

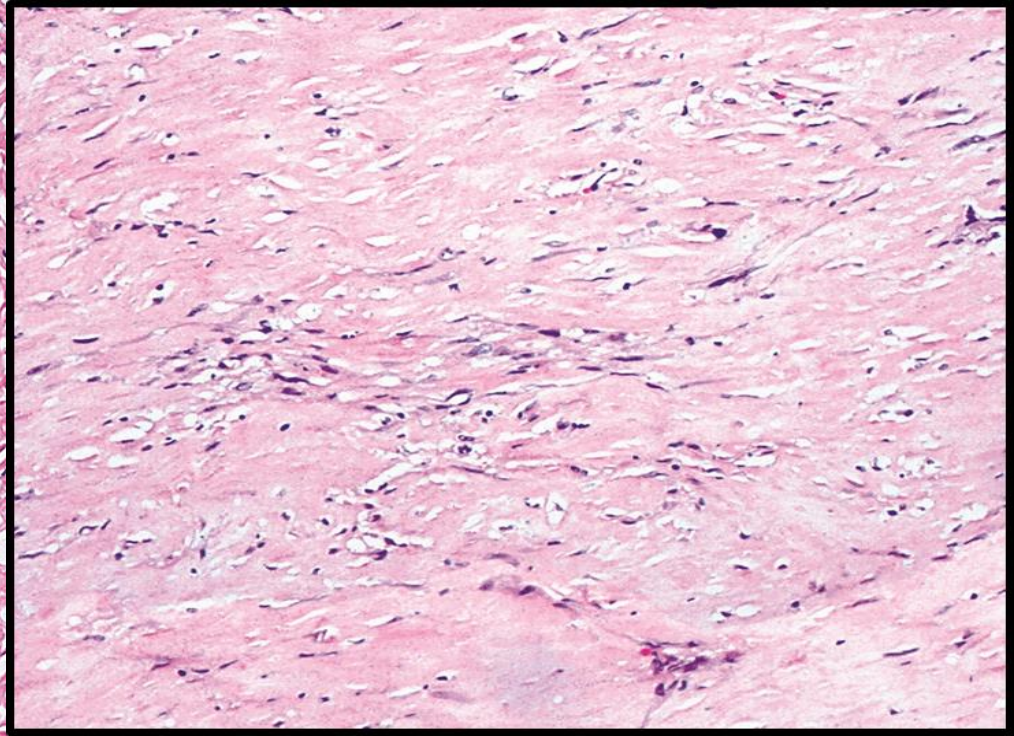
Crotty TB[1], Colby TV, Gay PC, Pisani RJ.

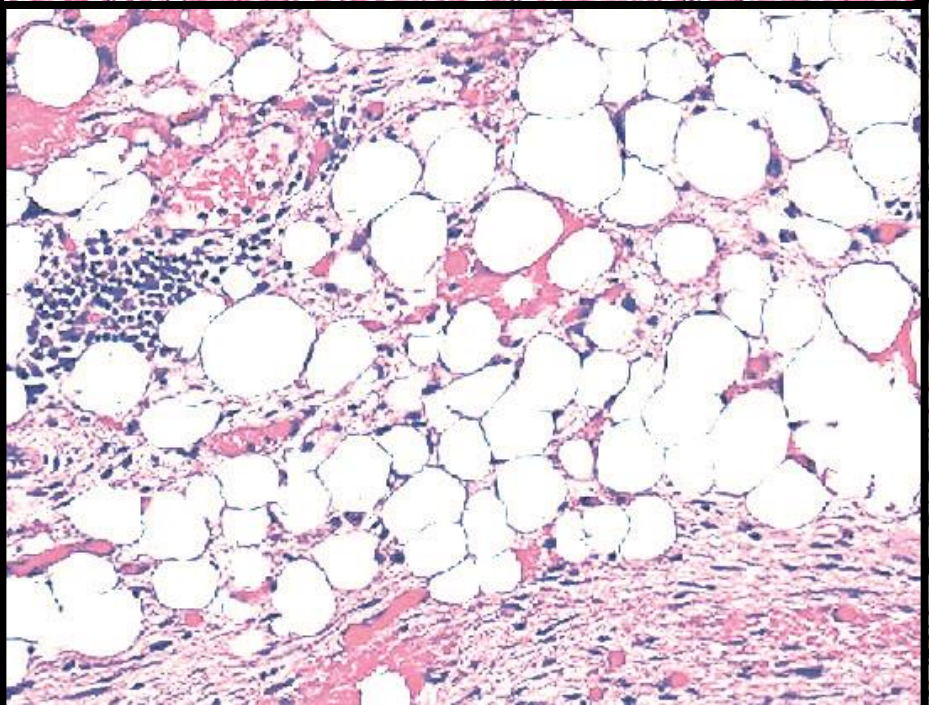
Abstract

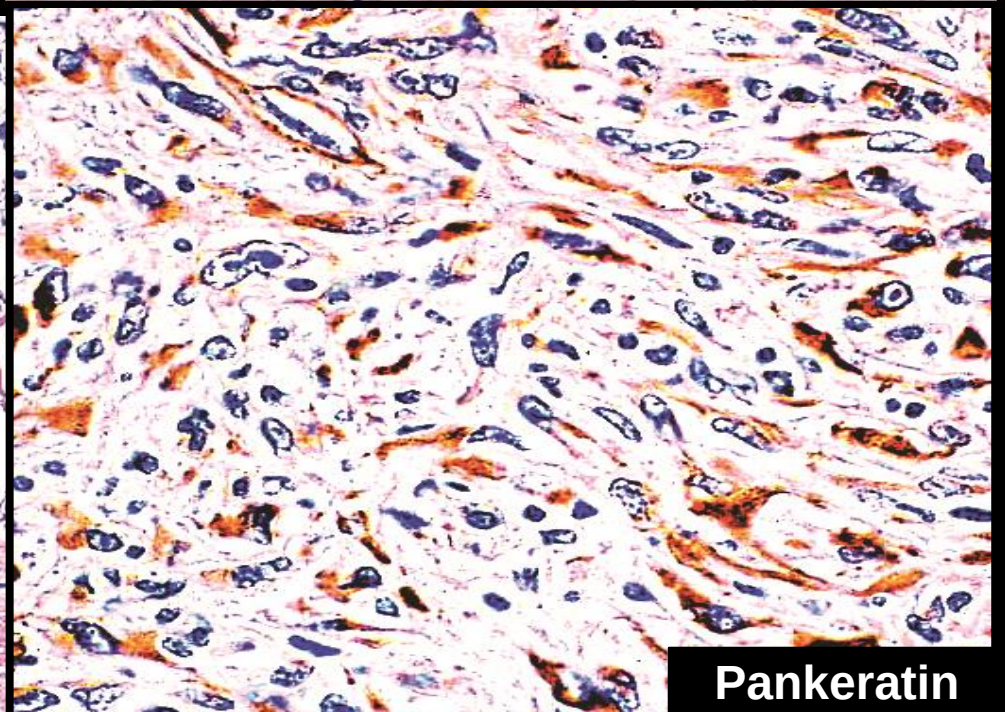
A 48-year-old woman presented with dyspnea, chest discomfort, and left vocal cord paralysis that developed 2 months after a flu-like illness. Radiographic examination showed prominence of mediastinal soft tissues and an ill-defined left upper lobe infiltrate. Dense mediastinal sclerosis was found at thoracotomy, and biopsy samples taken from the sclerotic areas showed densely hyalinized fibrotic tissue. Necrotizing granulomas containing organisms resembling Histoplasma capsulatum were present within mediastinal lymph nodes. Based on these findings, a diagnosis of sclerosing mediastinitis was made. During the next year, the patient's respiratory function deteriorated, and biopsy samples taken during a second thoracotomy 1 year later were again interpreted as sclerosing mediastinitis. The patient died postoperatively; at autopsy, the sclerotic mass involving the mediastinum was composed of a mixture of dense fibrosis and sarcomatous tissue. The final diagnosis was localized mediastinal desmoplastic malignant mesothelioma. We report it here because of its unusual clinical presentation, which mimicked sclerosing mediastinitis.










Pankeratin

"ANCIENT" (SCLEROTIC) THYMOMA

- An unusual thymoma variant reported by Moran & Suster in 2004
- Only 10% of patients had myasthenia gravis; the remainder presented with nondescript signs & symptoms or were entirely asymptomatic
- Densely-fibrotic stroma accounted for 85% to 90% of the tumor masses in each case
- Thorough sampling was necessary to document the presence of epithelial neoplastic cell groups

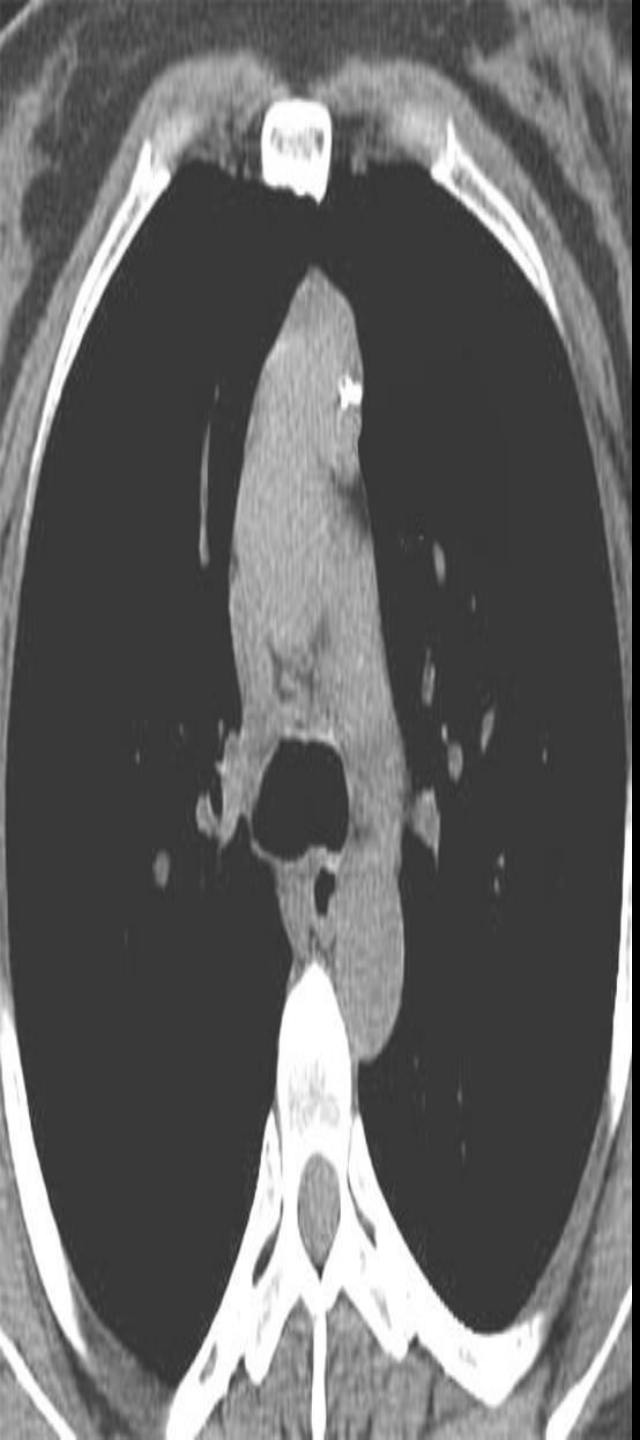
Am J Clin Pathol. 2004 Jun;121(6):867-71.

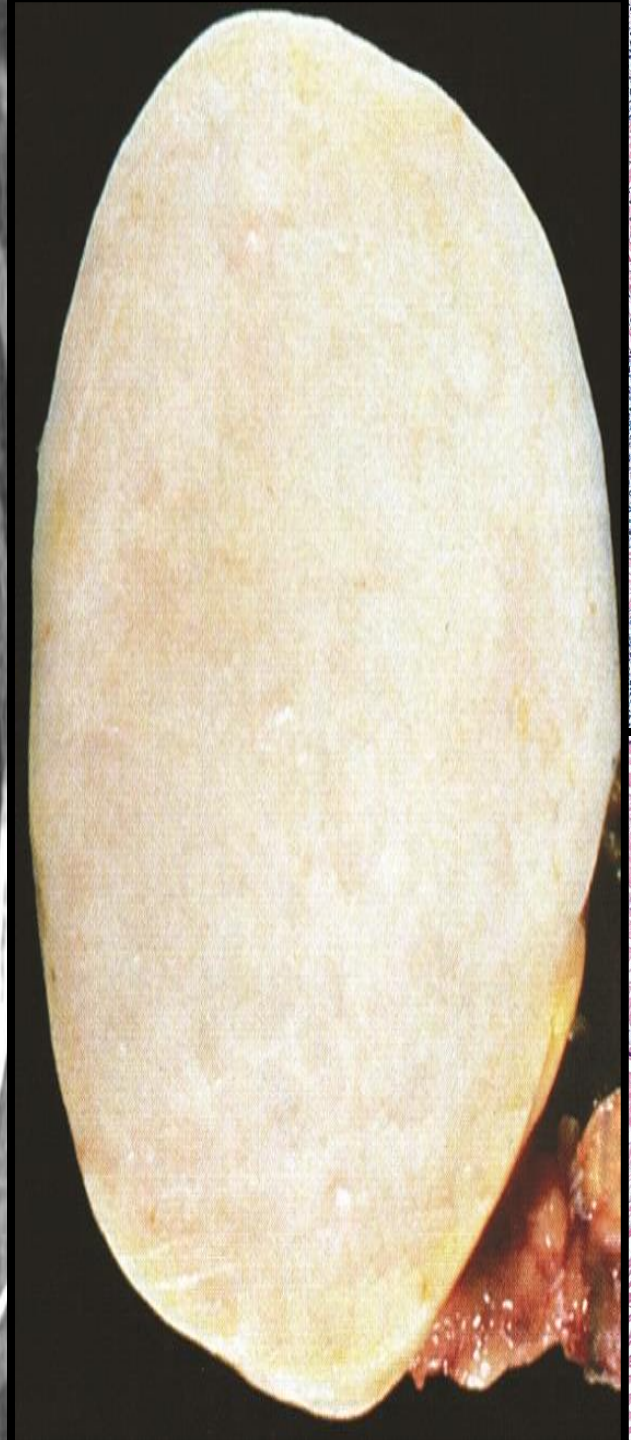
"Ancient" (sclerosing) thymomas: a clinicopathologic study of 10 cases.

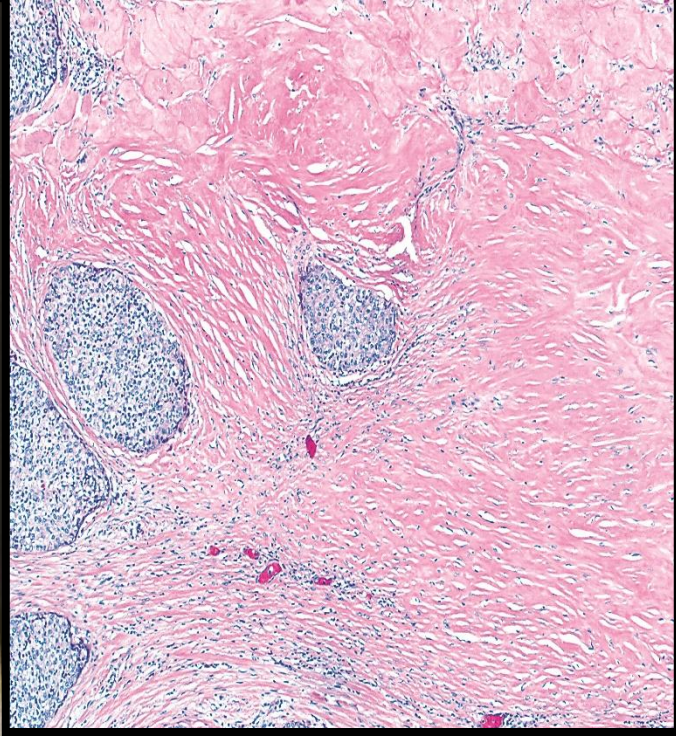
Moran CA·, Suster S.

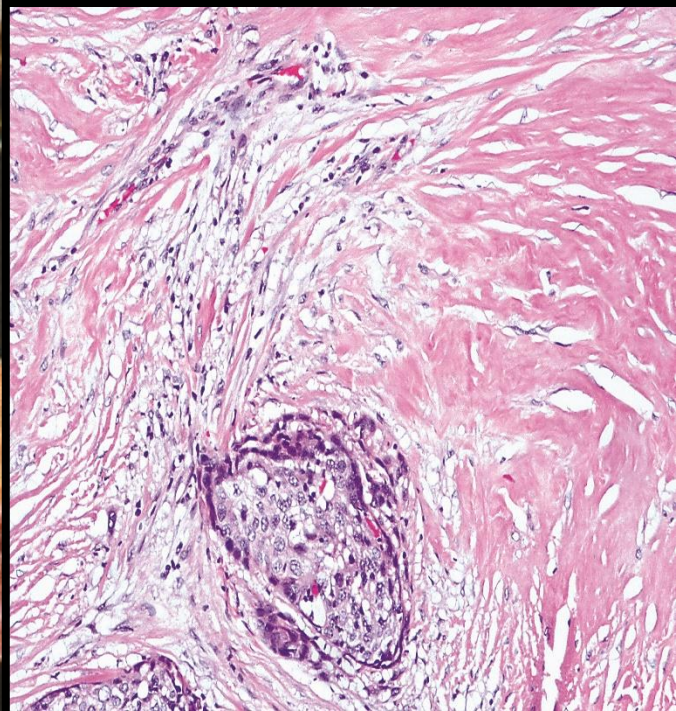
Abstract

We present 10 cases of "ancient" (sclerosing) thymomas in 4 women and 6 men (age range, 34-73 years; mean, 53.5 years). Clinically, 4 patients had a history of shortness of breath and chest pain of several weeks' duration, 1 had a history of myasthenia gravis, and 5 were asymptomatic (anterior mediastinal masses discovered on routine chest radiographs). All underwent complete surgical resection of the anterior mediastinal mass. The tumors were light tan and solid, without areas of hemorrhage or necrosis, and 5 to 10 cm in greatest diameter. Extensive areas of hyalinized fibroconnective tissue constituting about 85% to 90% of the tumor mass was the main tumor feature. Focal areas of conventional thymoma also were present in all tumors. Follow-up information was obtained for 8 patients. Of these 8 patients, 6 died, all of unrelated causes (congestive heart failure, renal insufficiency, and pulmonary edema), and 2 were alive 1 and 6 years after surgical resection. The present cases highlight an important histopathologic feature of thymomas, which can pose problems in diagnosis, namely when dealing with small mediastinoscopic biopsy specimens.









SCLEROTIC THYMIC CARCINOID

- Extensive sclerosis in neuroendocrine carcinomas of the lung was described by Kalhor et al. in 2010; the speaker has encountered 2 primary thymic neoplasms with similar changes
- Dense stromal fibrosis may obscure the diagnosis in small biopsies and also interfere with grading of the tumors
- Lesional cells are immunoreactive for pankeratin, as well as markers of neuroendocrine differentiation
- Marked sclerosis does not appear to affect behavior or prognosis

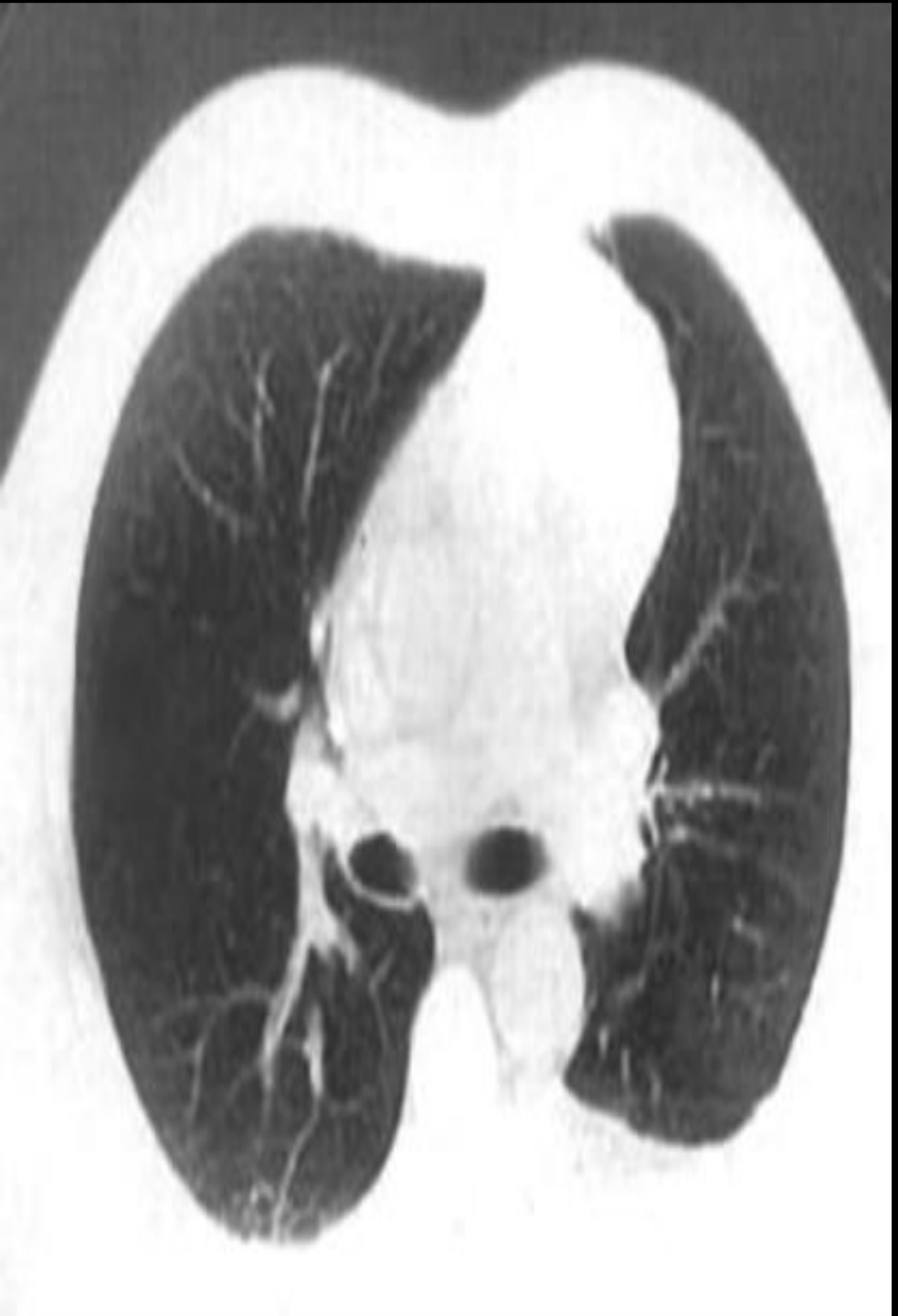
Am J Clin Pathol. 2010 Apr;133(4):618-22. doi: 10.1309/AJCPIRV02WXSLHZK.

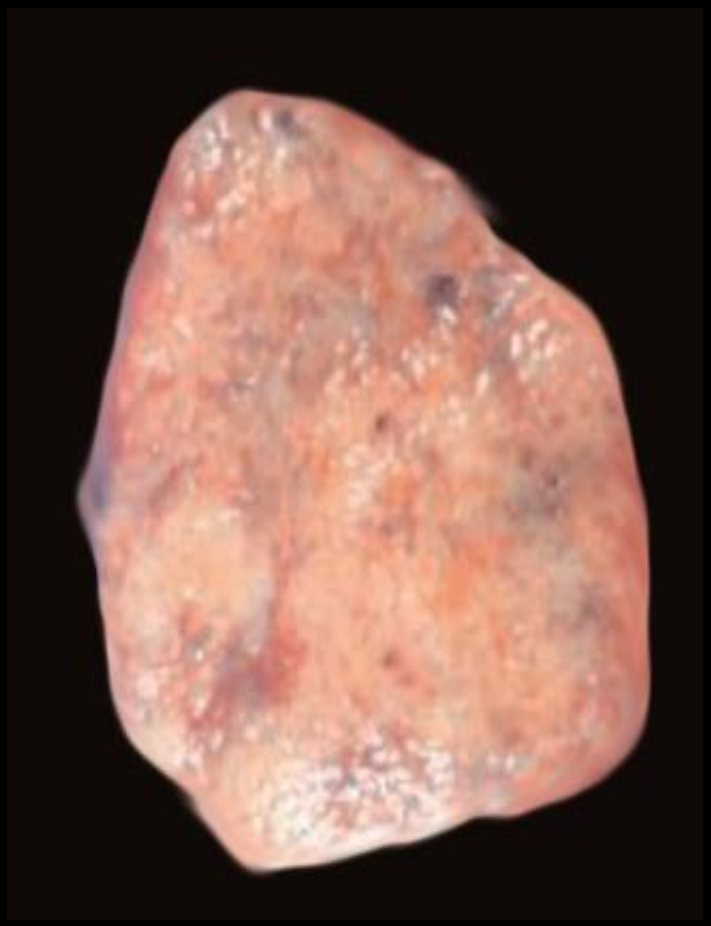
Primary sclerosing neuroendocrine carcinomas of the lung: A clinicopathologic and immunohistochemical study of 10 cases.

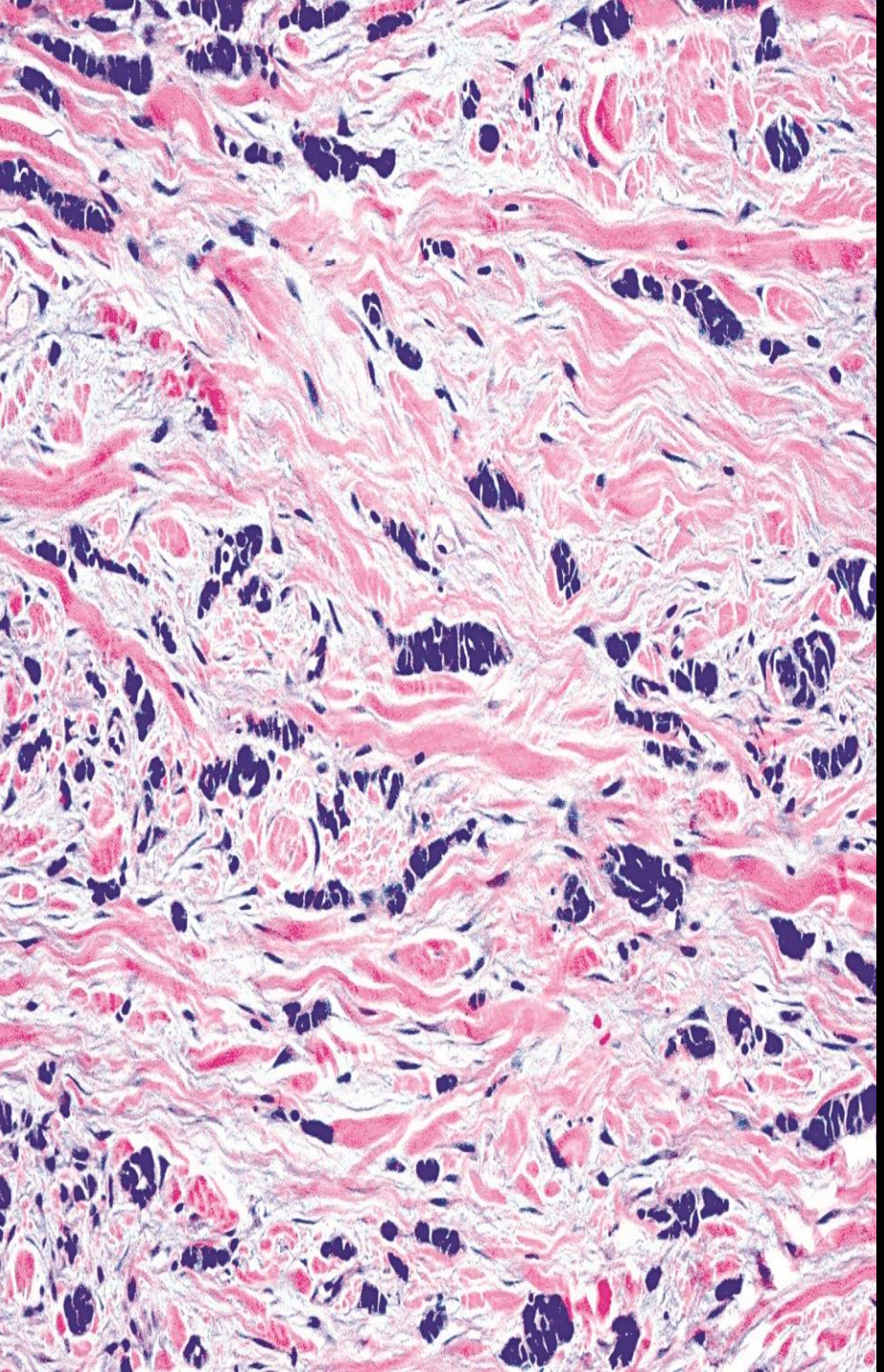
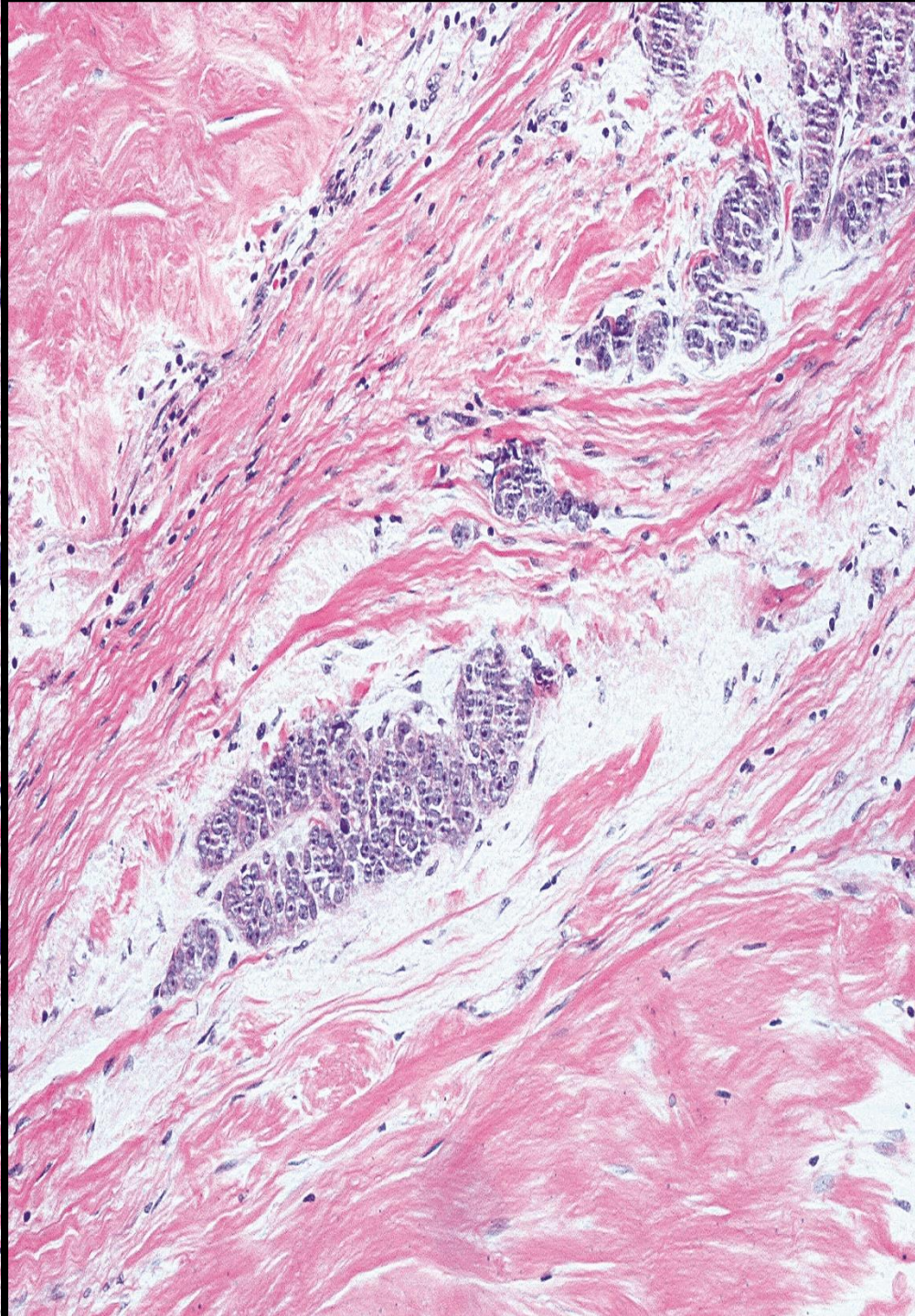
Kalhor N[1], Suster S, Moran CA.

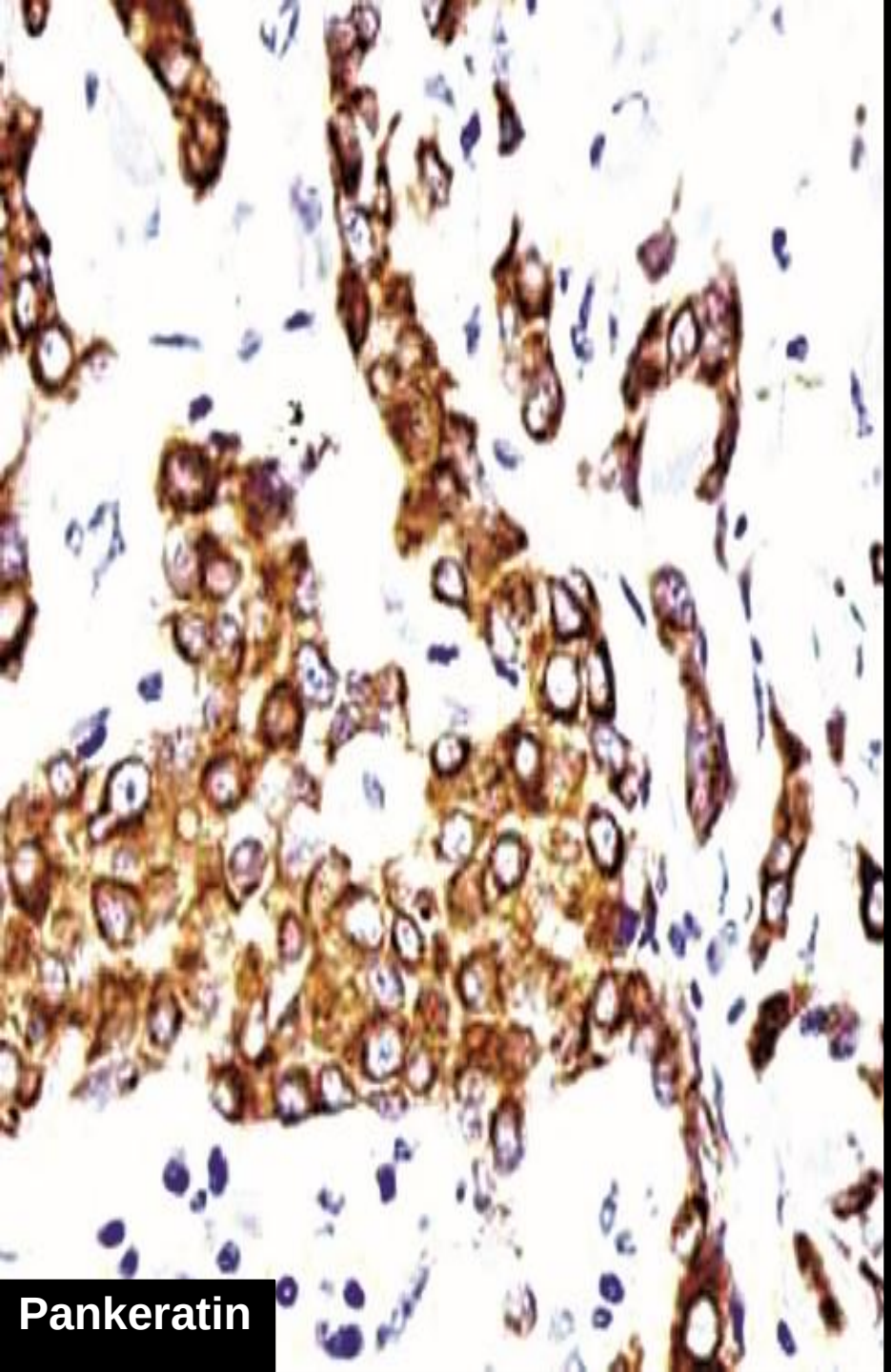
Abstract

We describe 10 cases of primary well-differentiated neuroendocrine carcinomas (carcinoid tumor) of the lung with extensive sclerotic changes. The patients were 6 women and 4 men from 20 to 69 years of age. Clinically, patients had symptoms of bronchial obstruction such as cough, dyspnea, and chest pain. Surgical resection of the tumors was accomplished in all the cases. Histologically, all tumors corresponded to the well-differentiated type; however, in 4 cases, lymph node metastases were present. Immunohistochemically, all tumors showed positive staining for neuroendocrine markers, including chromogranin, synaptophysin, CD56, and broad-spectrum keratin. Follow-up information showed that 8 patients were alive after a period ranging from 1 to 5 years. The cases presented highlight an important feature of neuroendocrine carcinomas of the lung not previously addressed, one that may pose a problem not only in the diagnosis but also in the grading of these neoplasms.

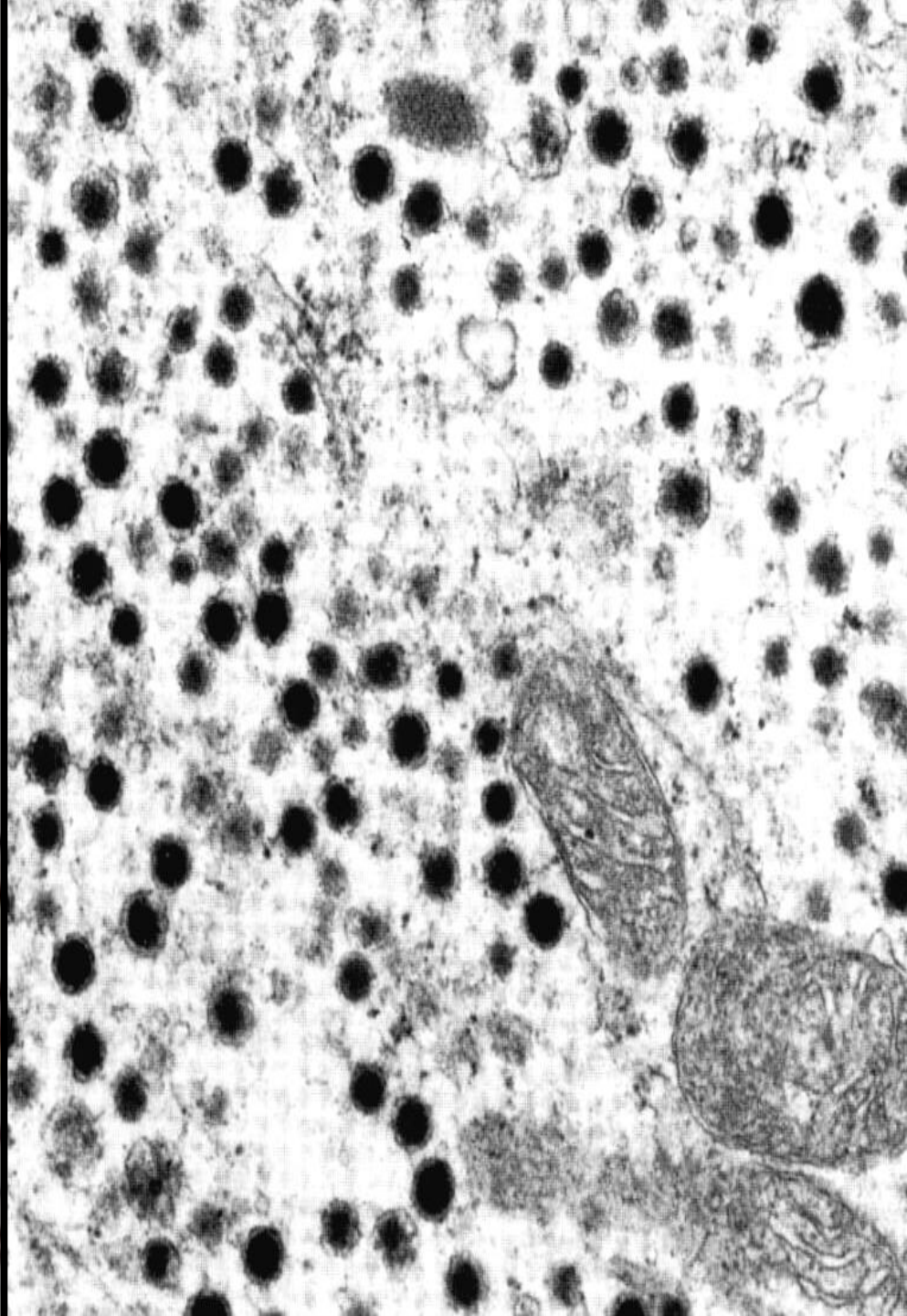






Pankeratin



SCLEROSING PARAGANGLIOMAS

- Described by Plaza & colleagues in 2006
- A pathologic variant of paraganglioma that tends to be overrepresented in middle-aged women
- Can be encountered in both the anterior and posterior mediastinal compartments
- Dominated by mature fibrous stroma, compressing tumor cell groups into irregular, pseudo-infiltrative profiles that can be confused with those of an invasive carcinoma or thymoma
- Non-immunoreactive for pankeratin

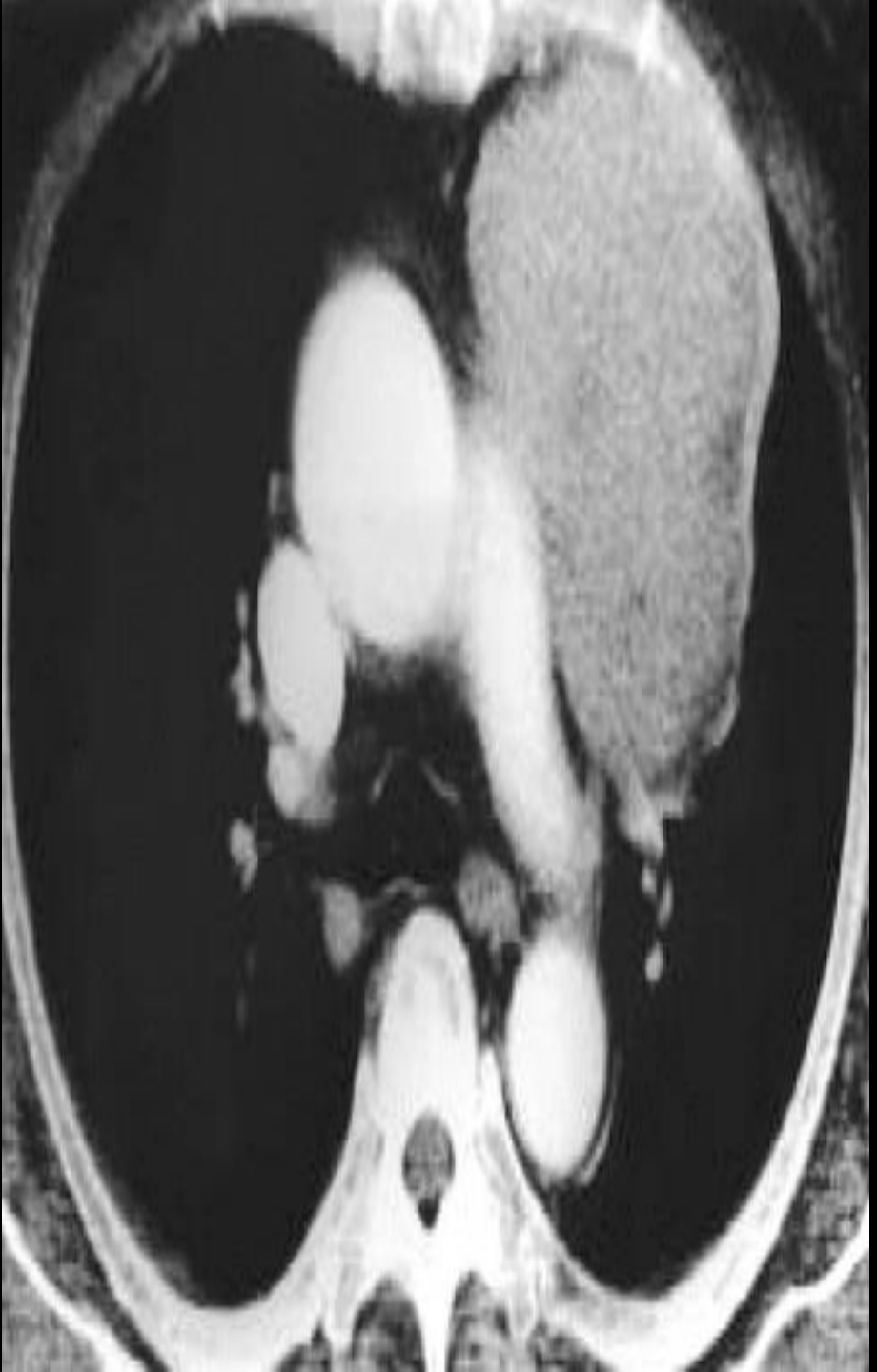
Am J Surg Pathol. 2006 Jan;30(1):7-12.

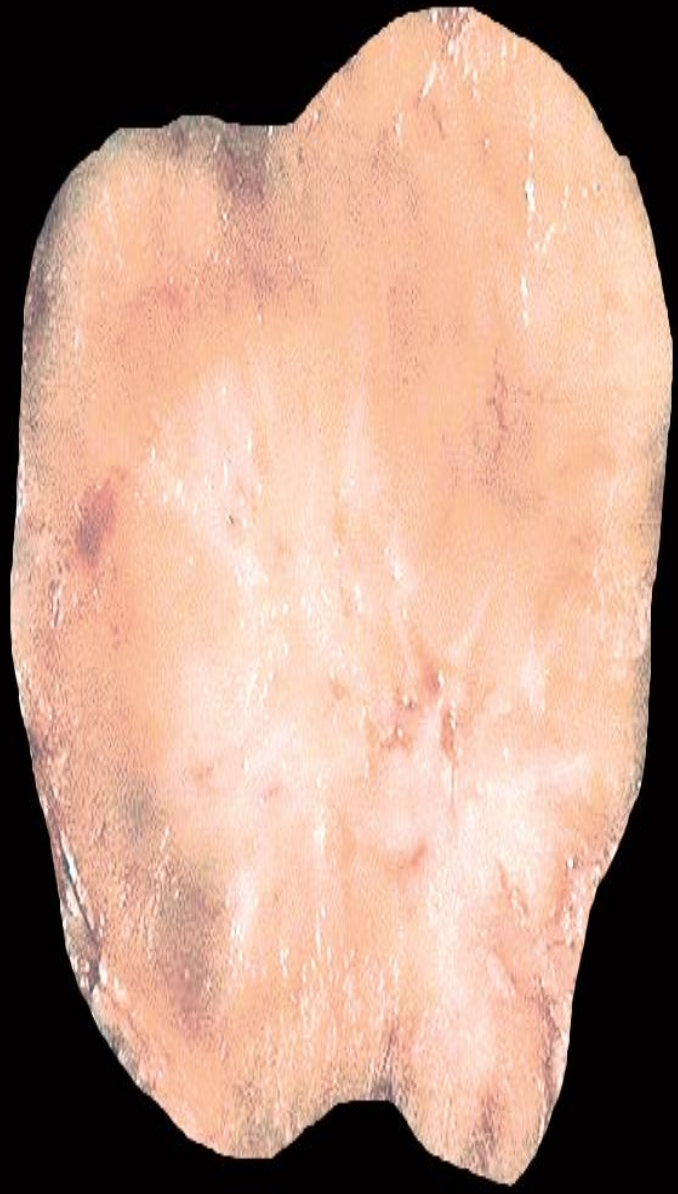
Sclerosing paraganglioma: report of 19 cases of an unusual variant of neuroendocrine tumor that may be mistaken for an aggressive malignant neoplasm.

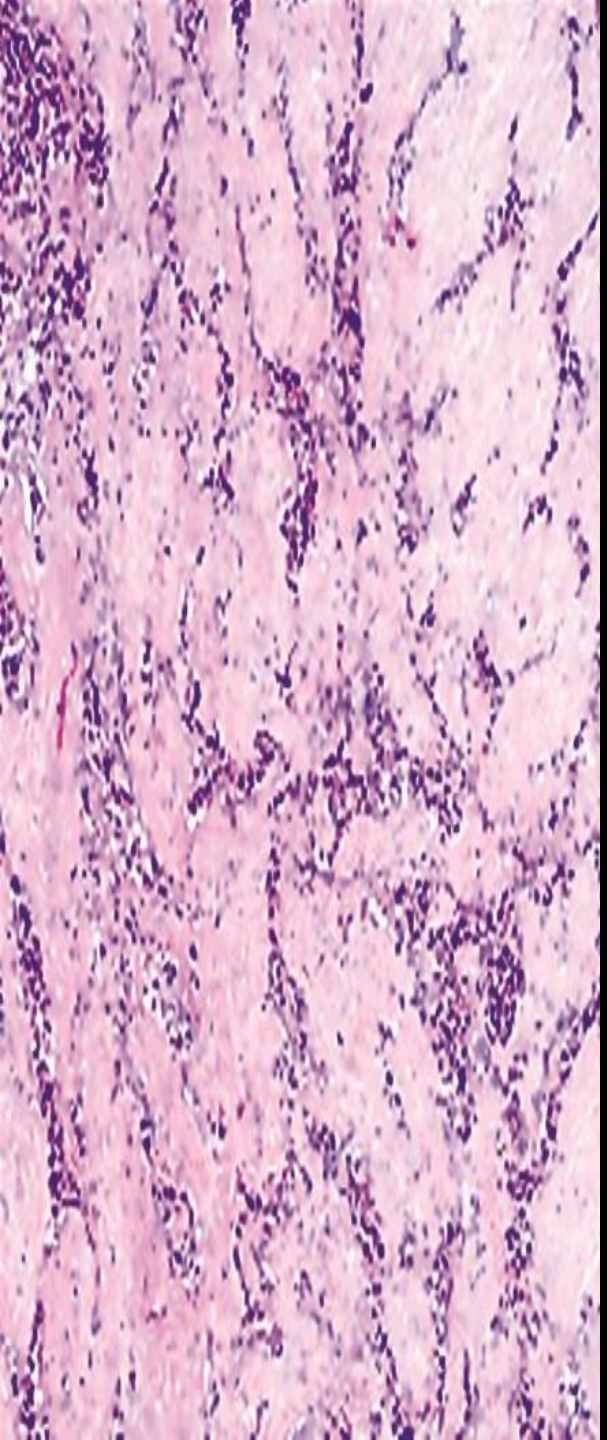
Plaza JA , Wakely PE Jr, Moran C, Fletcher CD, Suster S.

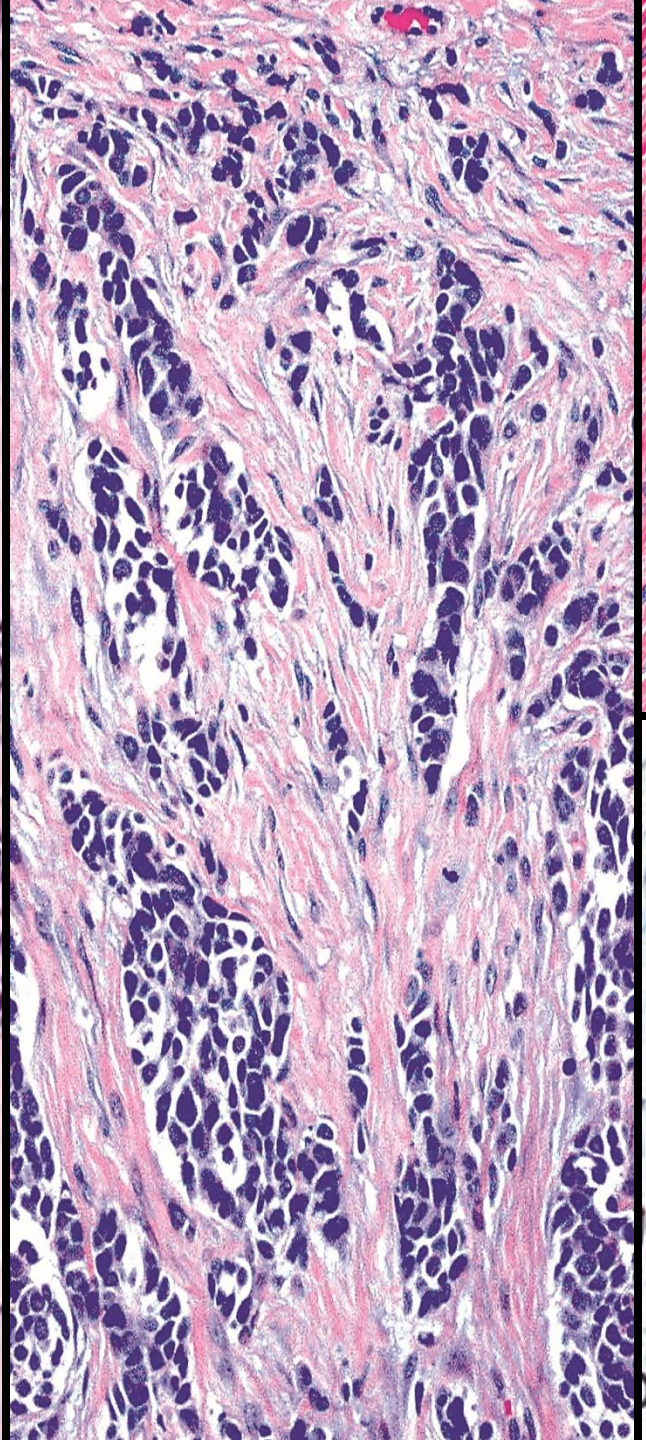
Abstract

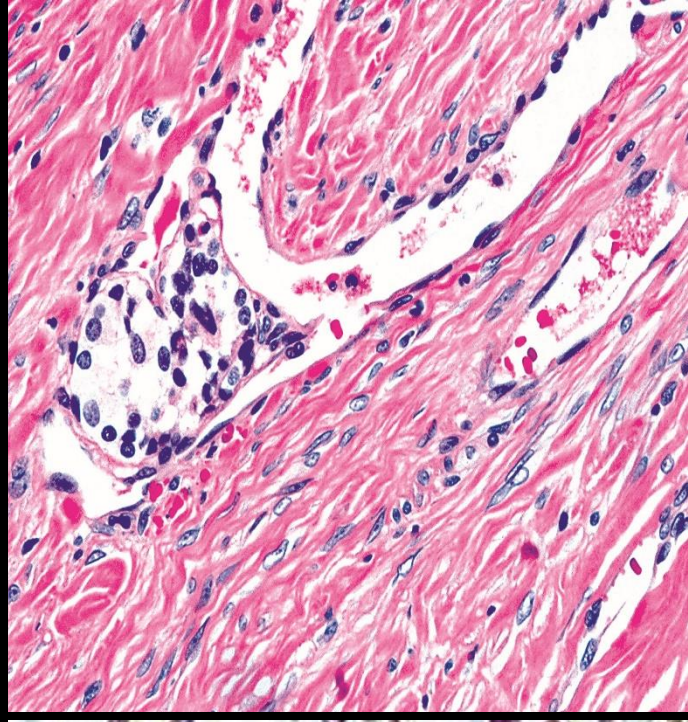
Nineteen cases of a distinctive variant of paraganglioma characterized by extensive collagen deposition resulting in a pattern of growth that resembled an invasive malignant neoplasm are described. The patients were 3 men and 16 women, 32 to 69 years of age (mean, 50.5 years). The tumors were located in the carotid body region, parapharyngeal region, and mediastinum. Tumor size ranged from 2 to 6 cm in greatest diameter. Grossly, the tumors were described as rubbery to firm, tan-red, and with extensive areas of sclerosis. Histologic examination showed nests and cords of tumor cells separated by broad bands of fibrous tissue. The tumor cells ranged from round to polygonal with abundant cytoplasm to elongated spindle cells with scant cytoplasm. Nuclear cytomegaly was present focally enhancing the atypical appearance of the tumor cell population in 17 cases. Mitoses were sparse (<1 x 10 HPF), and there was no evidence of necrosis in any of the cases. Foci of vascular and perineural invasion were present in 2 and 4 cases, respectively. The most striking morphologic feature was the presence of irregular cords and bands of hyalinized fibrous tissue that compartmentalized the lesion into irregular nests, islands, or cords of tumor cells, imparting them with an infiltrative appearance. All the tumors showed positive immunostaining for chromogranin, synaptophysin, and monoclonal neuron specific enolase. S-100 protein stains identified a sustentacular cell network, whereas cytokeratin AE1/AE3 was negative in all cases. Clinical follow-up in 14 cases, ranging from 2 months to 20 years (mean follow-up, 6.6 years) showed evidence of local recurrence in 2 cases and the development of a separate tumor in the contralateral neck in 1 case. The remainder of patients were free of recurrence or metastasis following simple local excision. Because of the prominent sclerosis, a diagnosis of an invasive malignant neoplasm was initially considered in the majority of cases. Sclerosing paraganglioma should be included in the differential diagnosis of sclerosing lesions of the head and neck region and mediastinum. Appropriate immunohistochemical stains may be of aid for establishing the correct diagnosis.

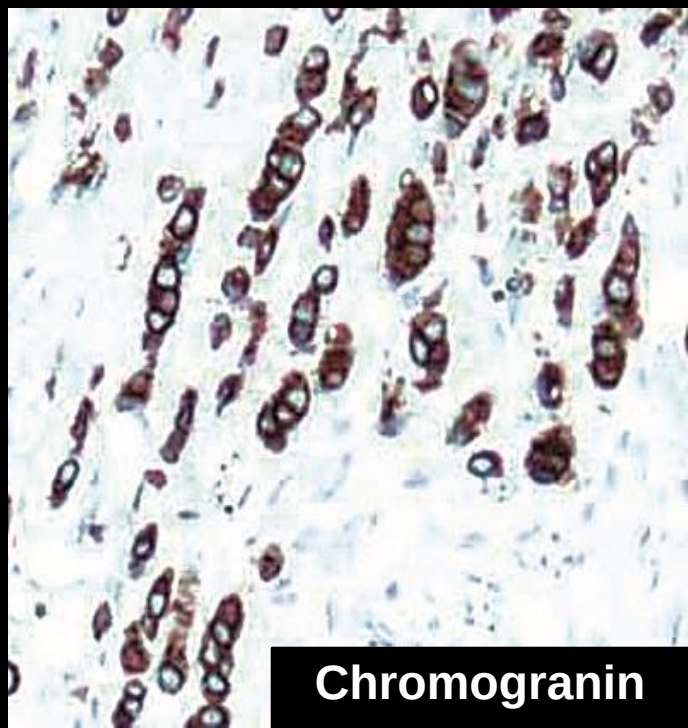











Chromogranin

CALCIFYING (PSEUDO)TUMOR (CPT) OF THE MEDIASTINUM

- Analogous to other lesions of the soft tissue, serosal surfaces, lungs, esophagus, liver, & spine
- Typically presents as a discrete mass, rather than an infiltrative process such as fibrosing mediastinitis
- Nondescript radiographic & gross appearance, except for the presence of multifocal calcifications
- Paucicellular background fibrocellular proliferation
- Appears to be a singular entity distinct from inflammatory myofibroblastic tumor and solitary fibrous tumor

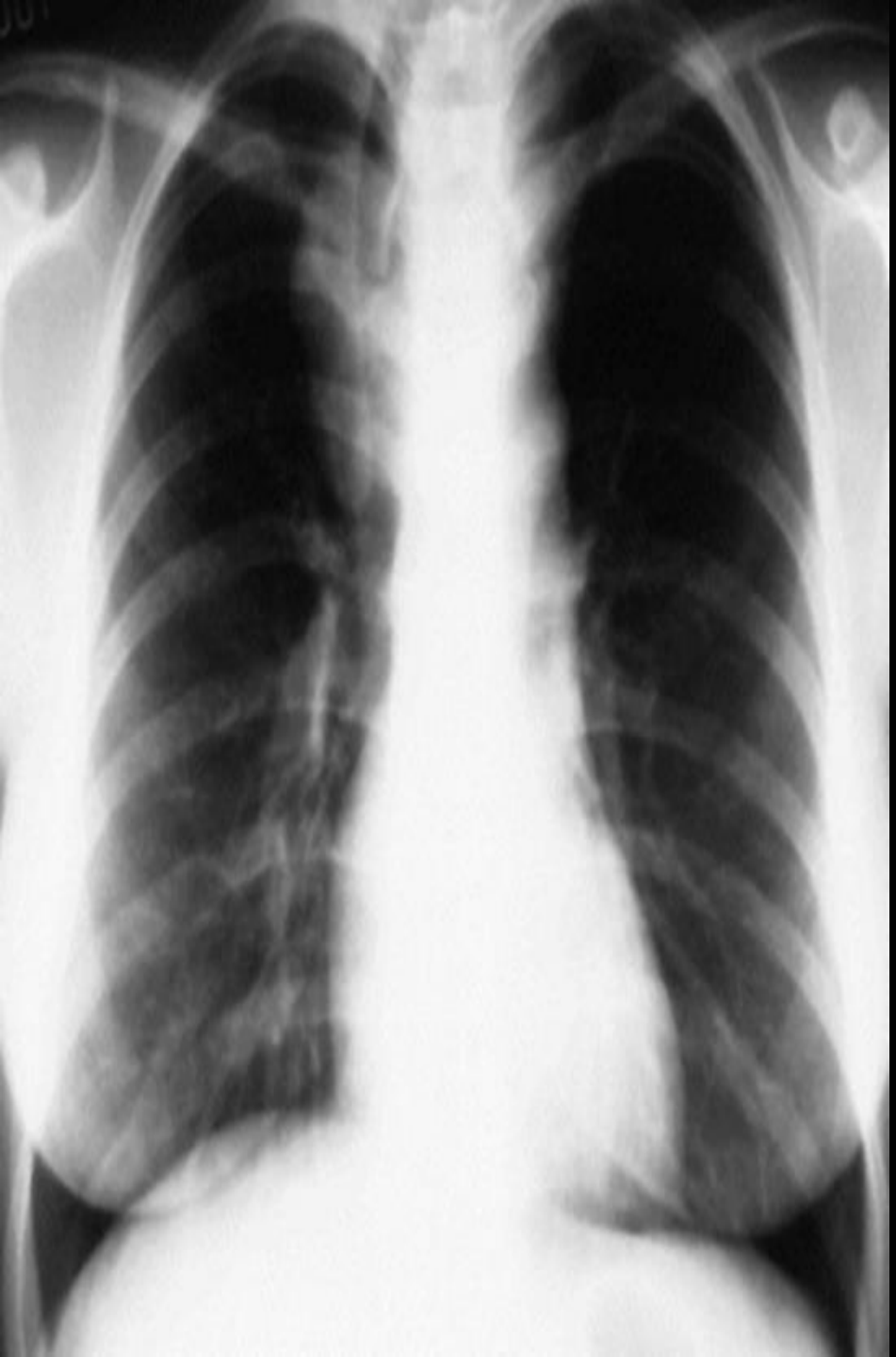
Ann Thorac Surg. 1997 Feb;63(2):543-4.

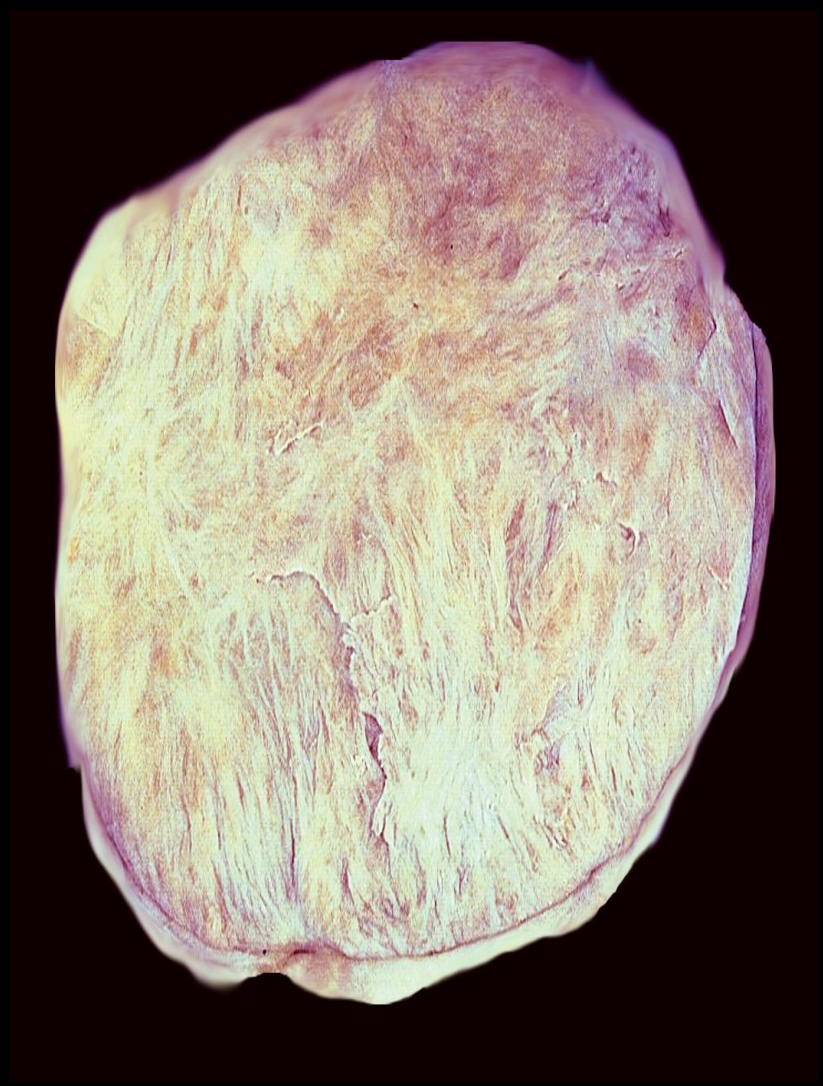
Calcifying fibrous pseudotumor of the mediastinum.

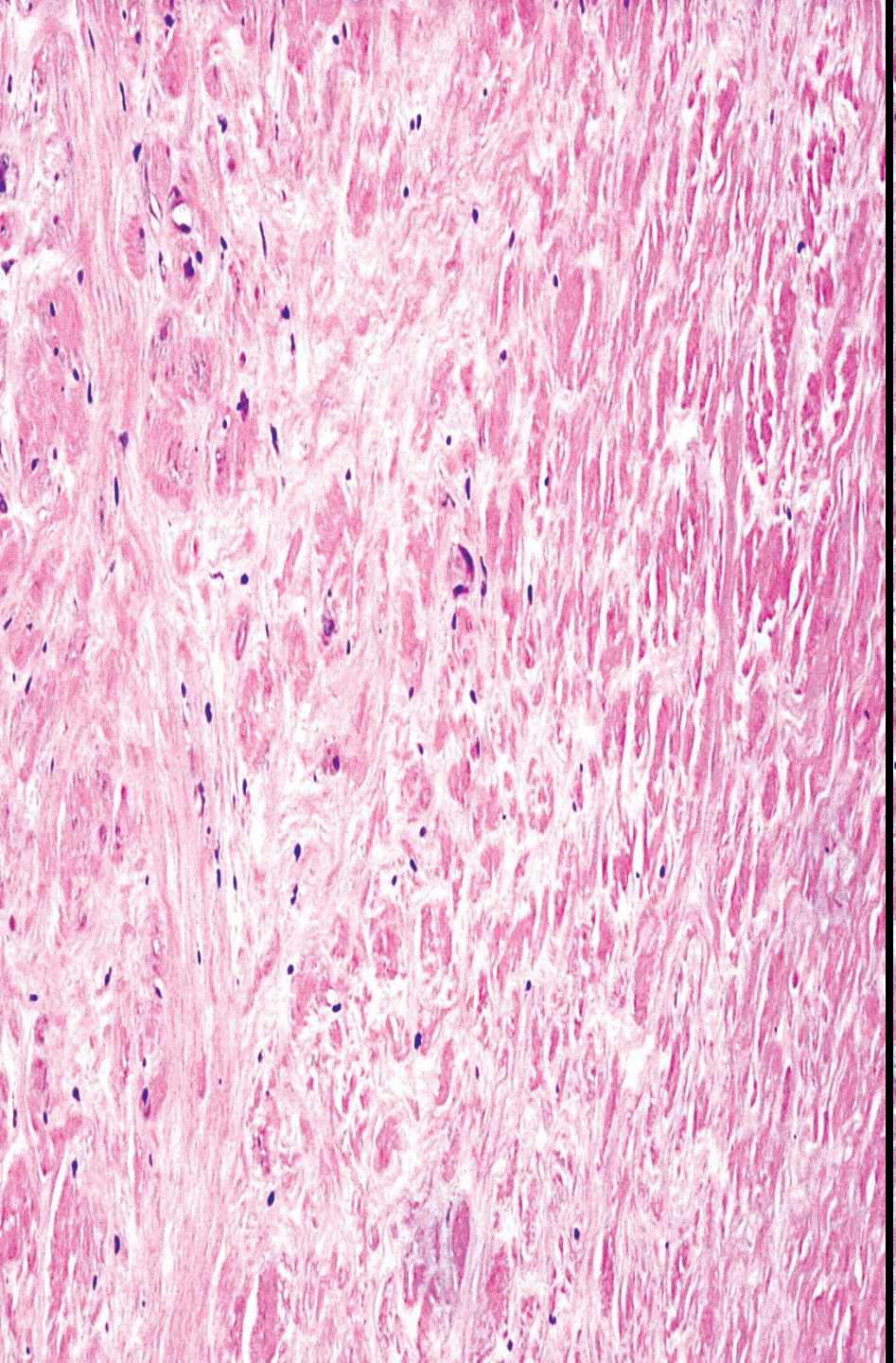
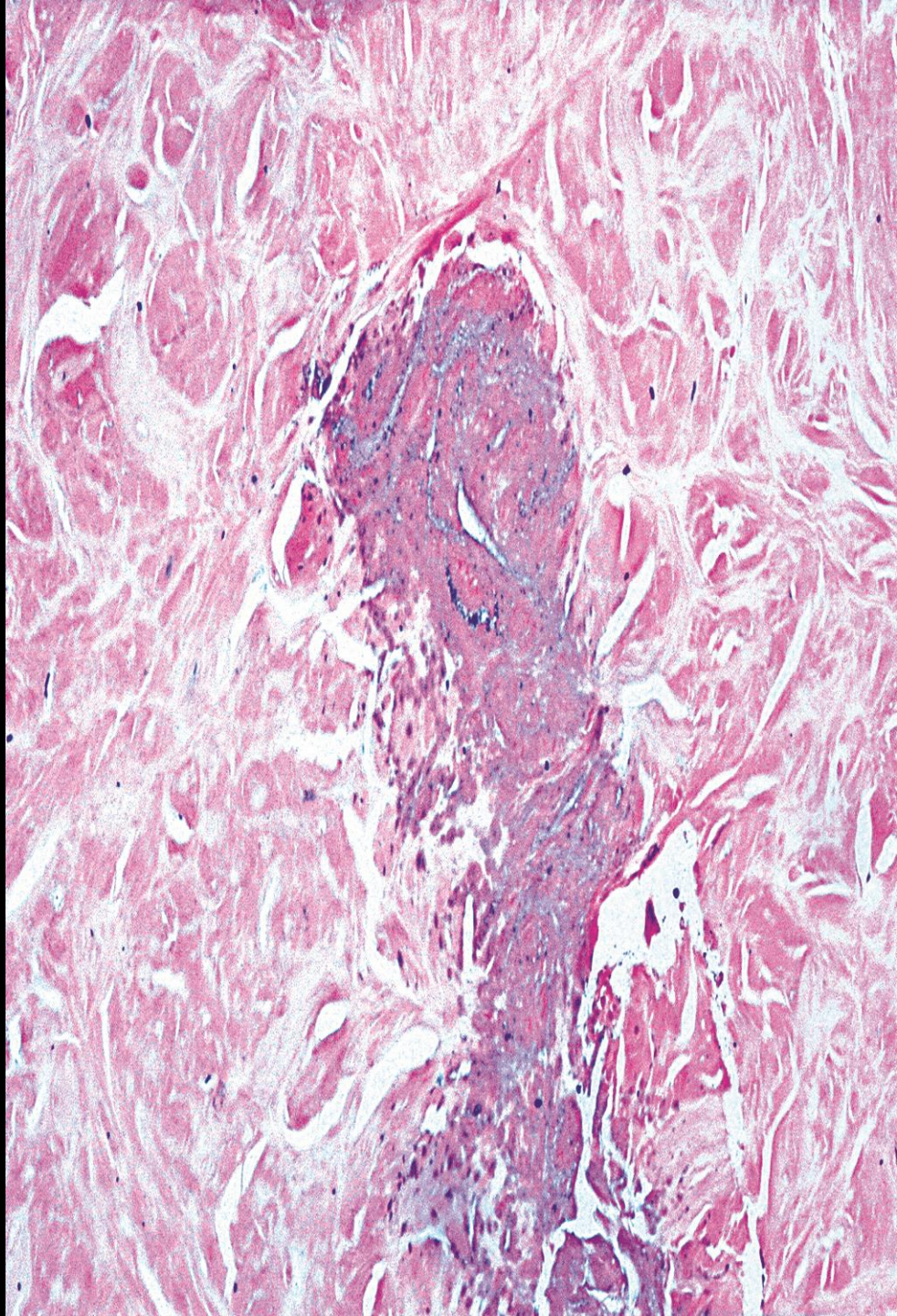
Dumont P[1], de Muret A, Skrobala D, Robin P, Toumieux B.

Abstract

Calcifying fibrous pseudotumor has recently been described in the soft tissues. It is a rare benign lesion characterized by the presence of abundant hyalinized collagen with psammomatous or dystrophic calcifications and lymphoplasmacytic infiltrate. We report a case of a young woman with a mediastinal mass treated by a complete resection. The mass had all the pathologic features of calcifying fibrous pseudotumor.





SOLITARY FIBROUS TUMOR OF THE MEDIASTINUM

- Identical pathologically to lesions that are prototypically seen in the pleura
- Approximately 80% arise in the anterior mediastinum, with the remainder being in the middle & posterior mediastinal compartments
- May demonstrate well-demarcated or infiltrative contours radiographically
- Range of histological patterns, including "patternless," epithelioid, and sclerosing-hypocellular variants
- Potential immunoreactivity for CD34, CD99, *bcl-2* protein, and *STAT6*

Am J Surg Pathol. 1989 Jul;13(7):547-57.

Solitary fibrous tumor of the mediastinum. A report of 14 cases.

Witkin GB[1], Rosai J.

Abstract

Fourteen cases of a mediastinal neoplasm identical to solitary fibrous tumor (so-called fibrous mesothelioma) of the pleura were observed. The lesions presented with cough, chest pain, dyspnea, or as asymptomatic masses detected radiographically. Two patients had associated hypoglycemia. Eleven of the tumors were in the antero-superior mediastinum. One arose on a pedicle from the thymus, and another had entrapped thymic elements. Tumor cells were variably immunoreactive for vimentin and actin, but not for keratin, and lacked ultrastructural evidence of mesothelial or epithelial differentiation. Eight cases had highly cellular mitotically active regions of which six of seven with follow-up behaved aggressively; the exception was the pedunculated tumor. A 13-cm, histologically bland tumor has recurred twice. Aggressive behavior was more common than reported for solitary fibrous tumor of the pleura, but the same criteria (size, cellularity, mitotic activity, presence of pedicle) were of prognostic significance. The occurrence of solitary fibrous tumor in the mediastinum with the suggestion of thymic origin for some cases, combined with the immunohistochemical and ultrastructural findings, support a mesenchymal origin for this tumor. The differential diagnosis includes spindle cell thymoma, hemangiopericytoma, and peripheral nerve tumors.

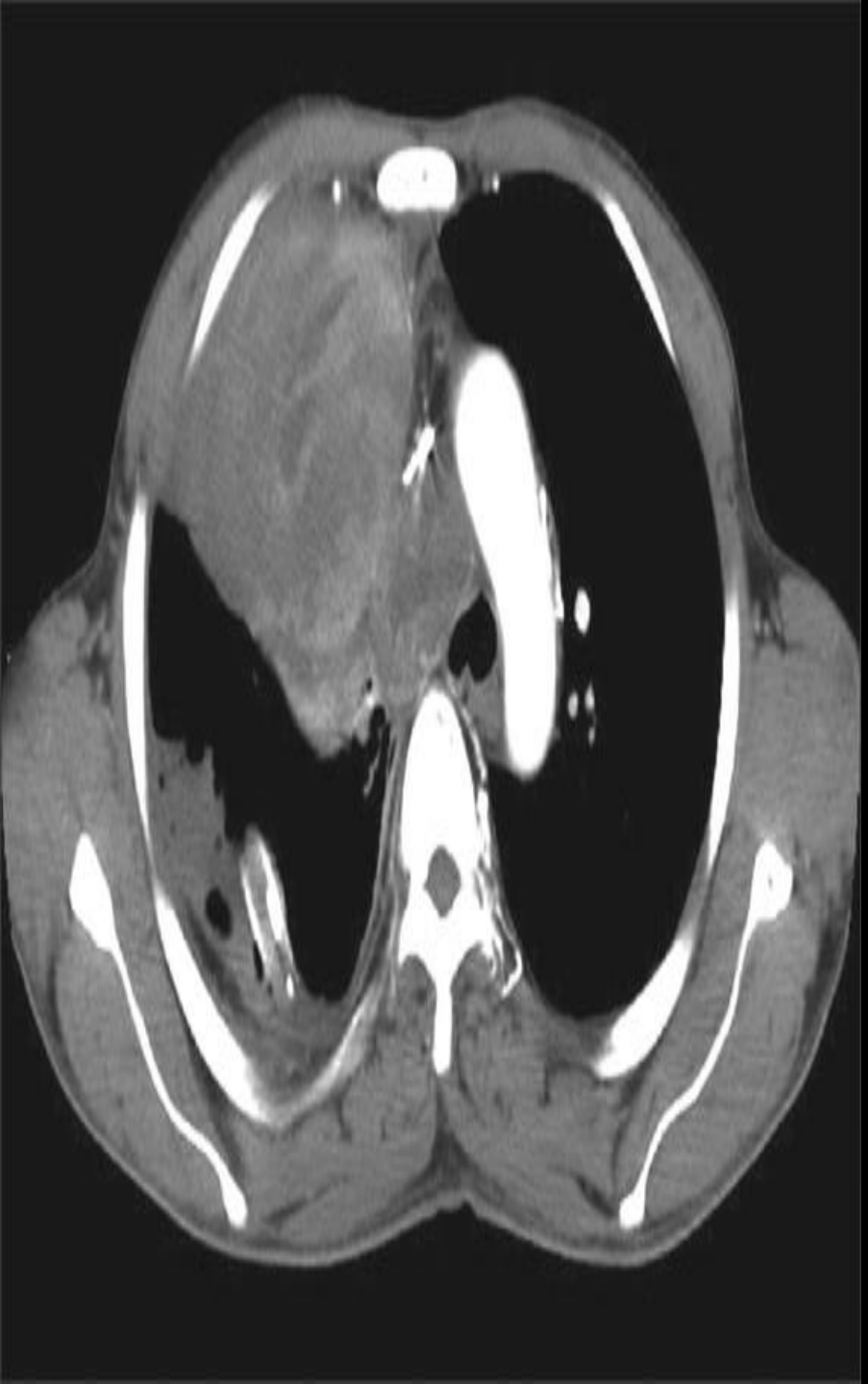
Semin Diagn Pathol. 1992 May;9(2):169-80.

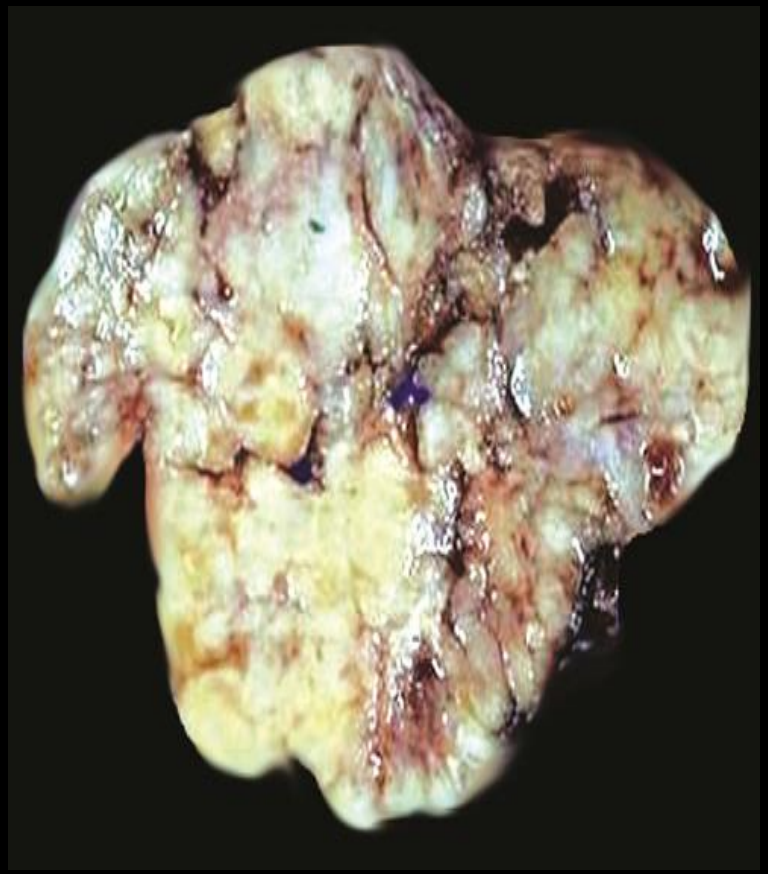
The spectrum of histologic growth patterns in benign and malignant fibrous tumors of the pleura.

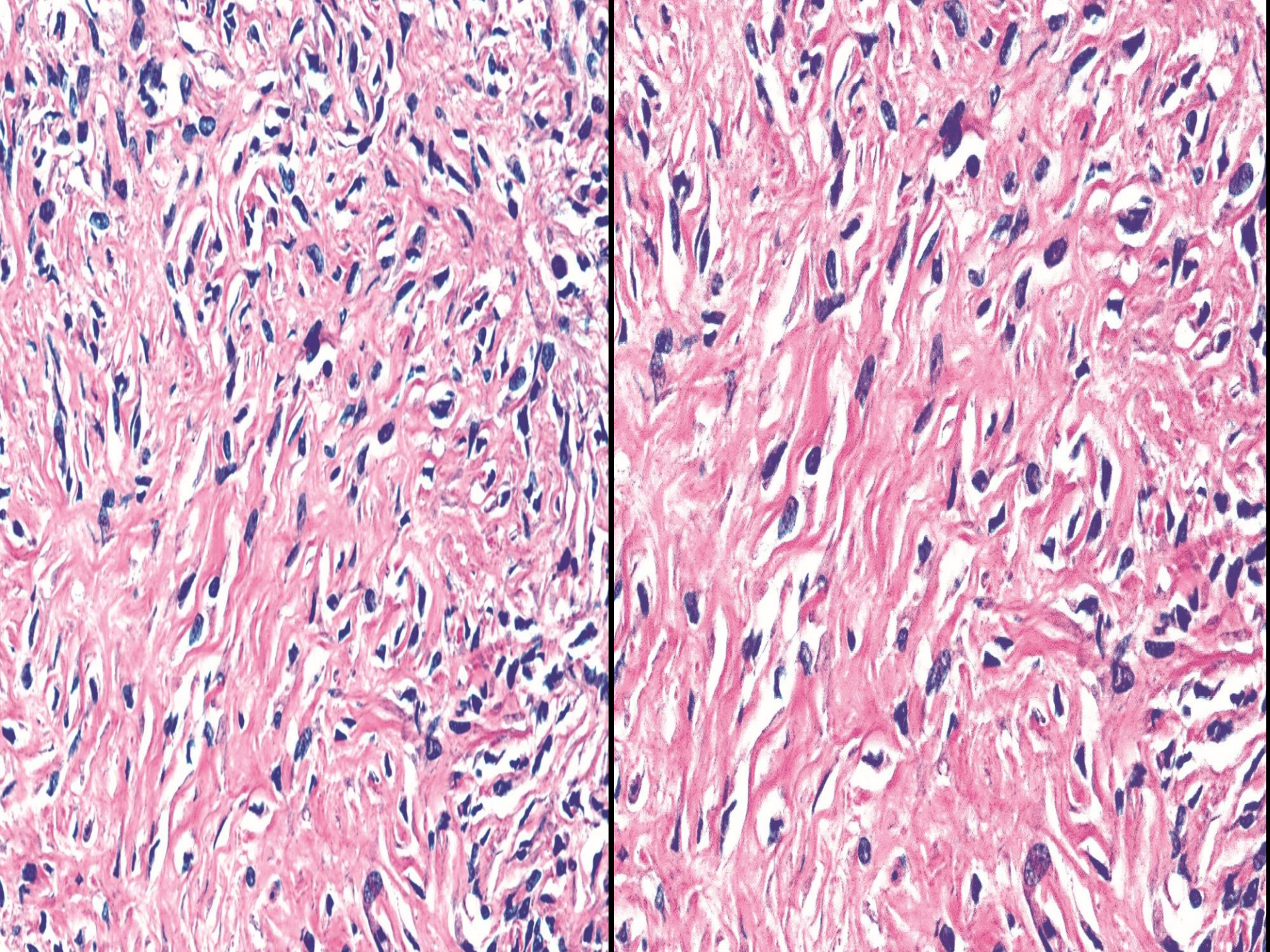
Moran CA[1], Suster S, Koss MN.

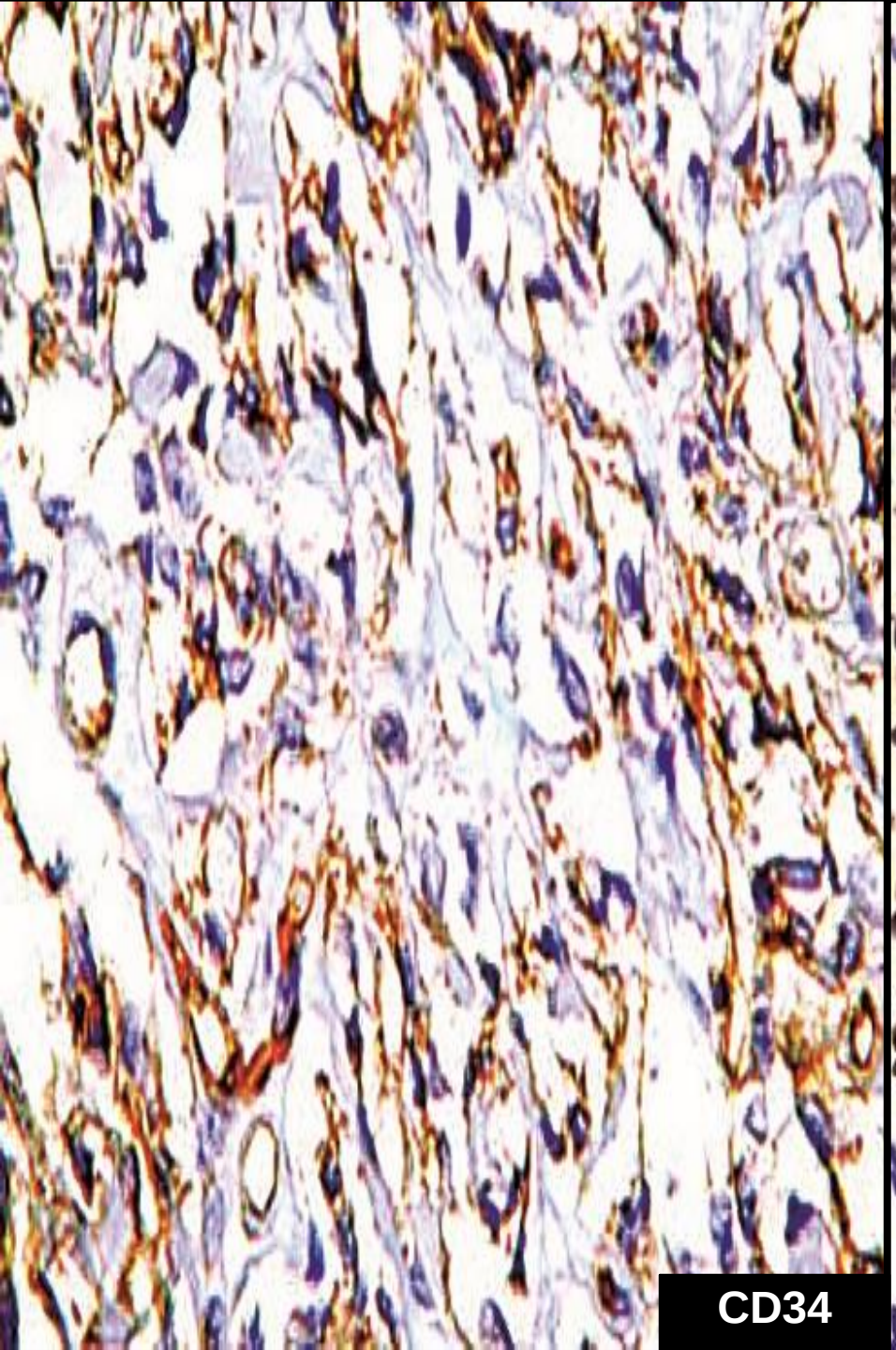
Abstract

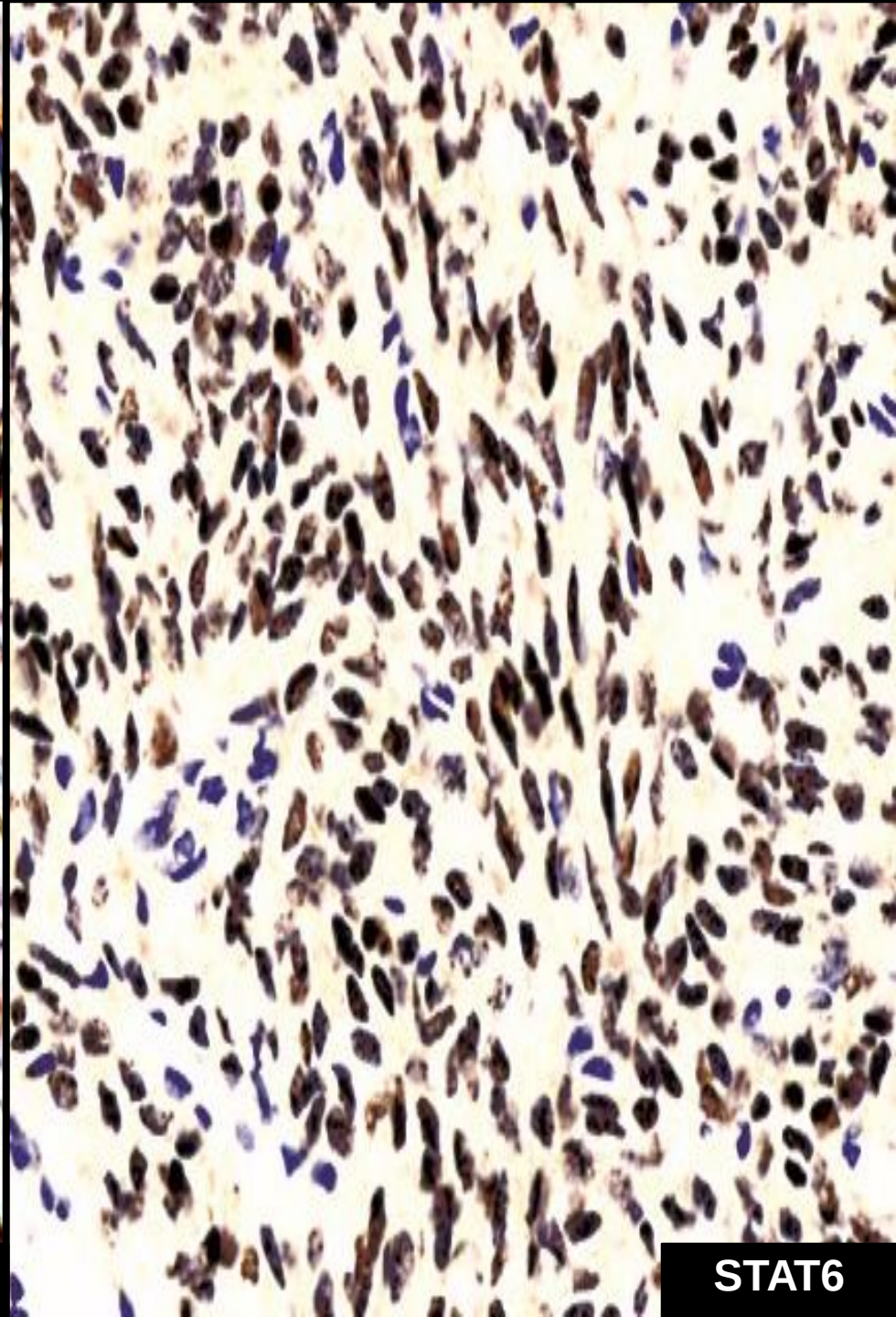
A review of the histologic growth patterns in 50 cases of benign and malignant fibrous tumors of the pleura (localized or solitary fibrous tumor, fibrous mesothelioma) is presented. Two major histologic growth patterns were observed admixed in various proportions: solid spindle and diffuse sclerosing. The solid spindle growth pattern assumed various configurations, including fascicular areas, storiform and herringbone formations, angiofibroma and hemangiopericytoma-like areas, synovial sarcoma-like areas, and neural-type palisading, thus simulating a variety of soft-tissue neoplasms. The diffuse sclerosing pattern, although rarely assuming a dominant role, was present in varying proportions in virtually all cases. In areas with extensive sclerosis, focal degeneration of collagen simulating tumor necrosis was often present. Other less frequently observed features were the formation of "amianthoid" fibers, multinucleated giant cells, and foci of metaplastic ossification. On ultrastructural and immunohistochemical examination, the tumor cells showed nondistinct features. Due to the extreme variability in morphologic appearances and the lack of distinctive ultrastructural or immunohistochemical characteristics, these tumors can pose a significant diagnostic problem. Familiarity with their histologic appearances and correlation with the gross findings and clinical setting are essential for arriving at the correct diagnosis.





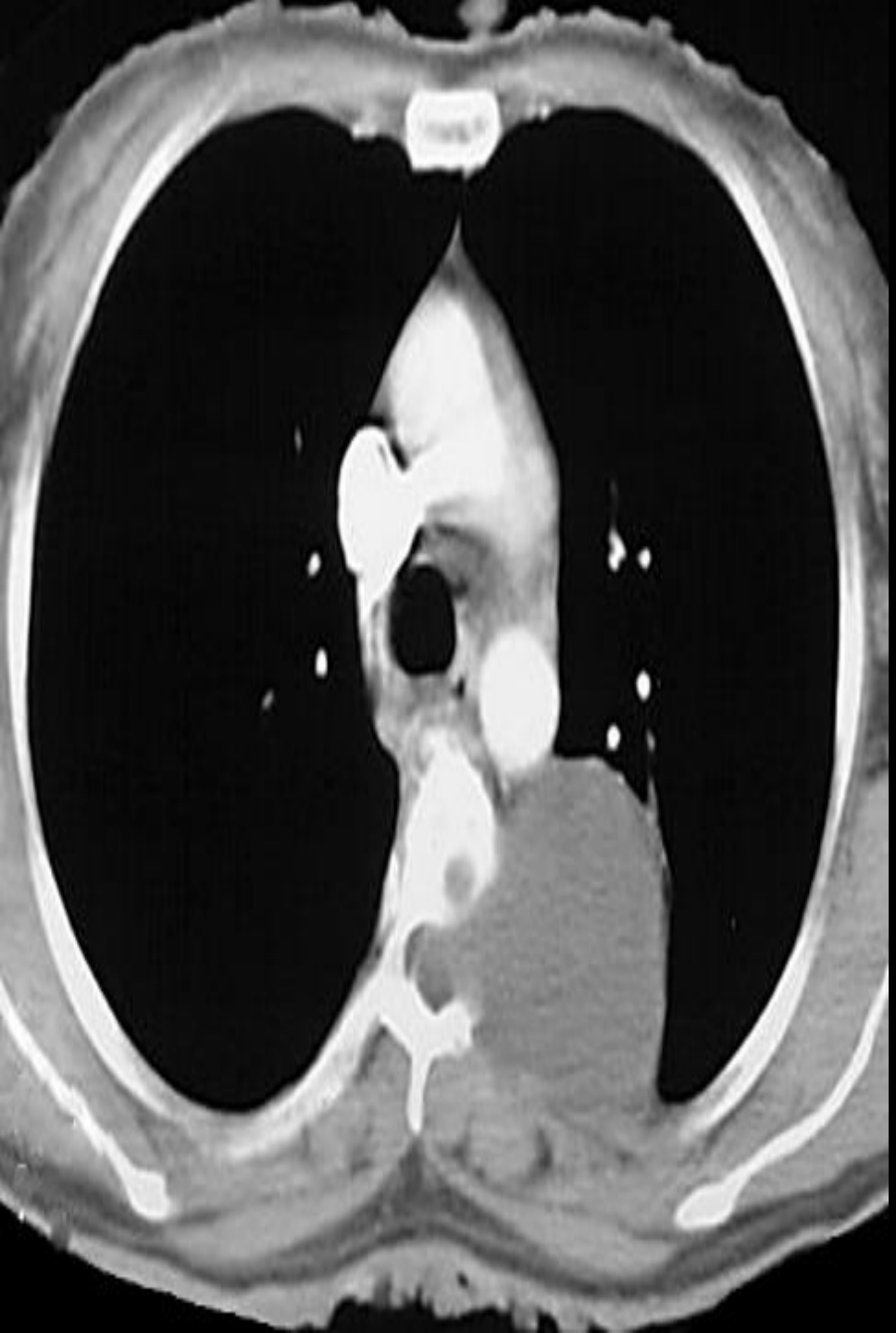


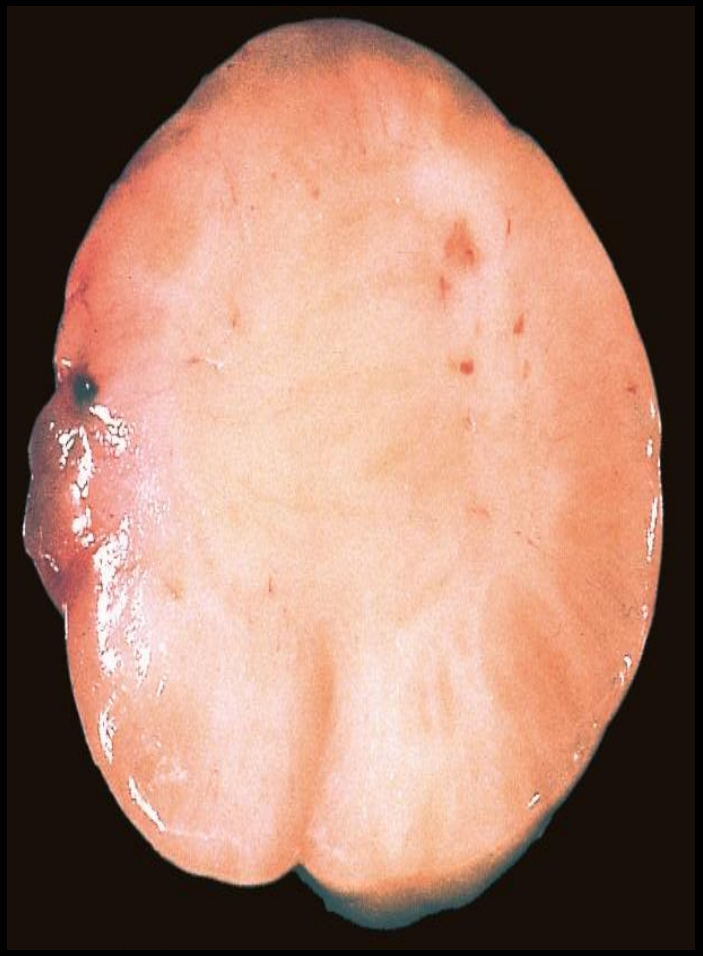

CD34


STAT6

SCLEROTIC PERIPHERAL NERVE SHEATH TUMORS

- Typically present as well-delimited masses in the posterior mediastinum
- Often asymptomatic; may cause neural-compressive symptoms & signs or back pain
- Predominantly benign in nature; malignant nerve sheath tumors are rare in the mediastinum
- May be represented histologically by neurofibroma, neurilemmoma (schwannoma) or perineurioma
- Potential immunoreactivity for S100 protein, CD34, CD56, & CD57



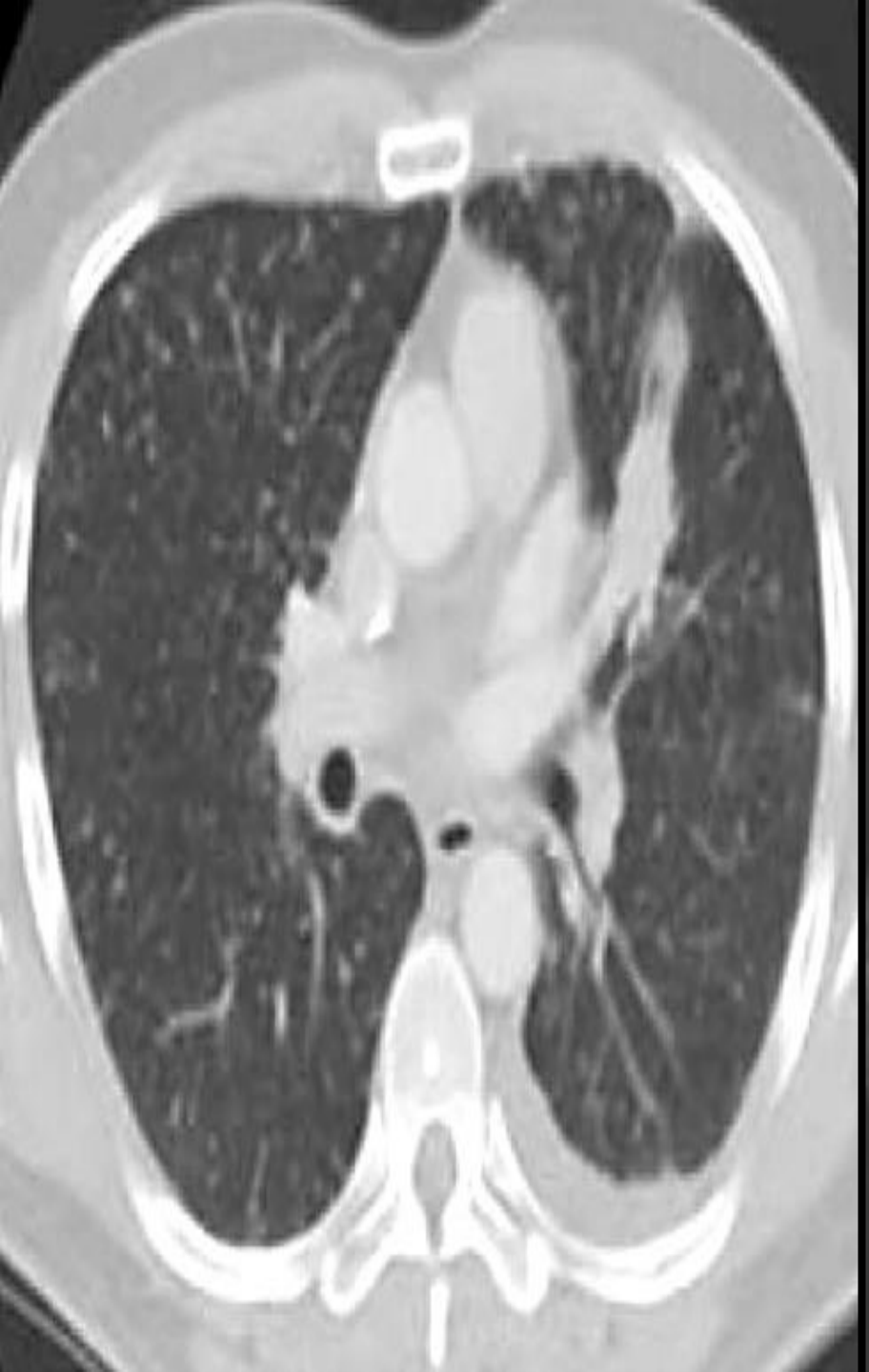
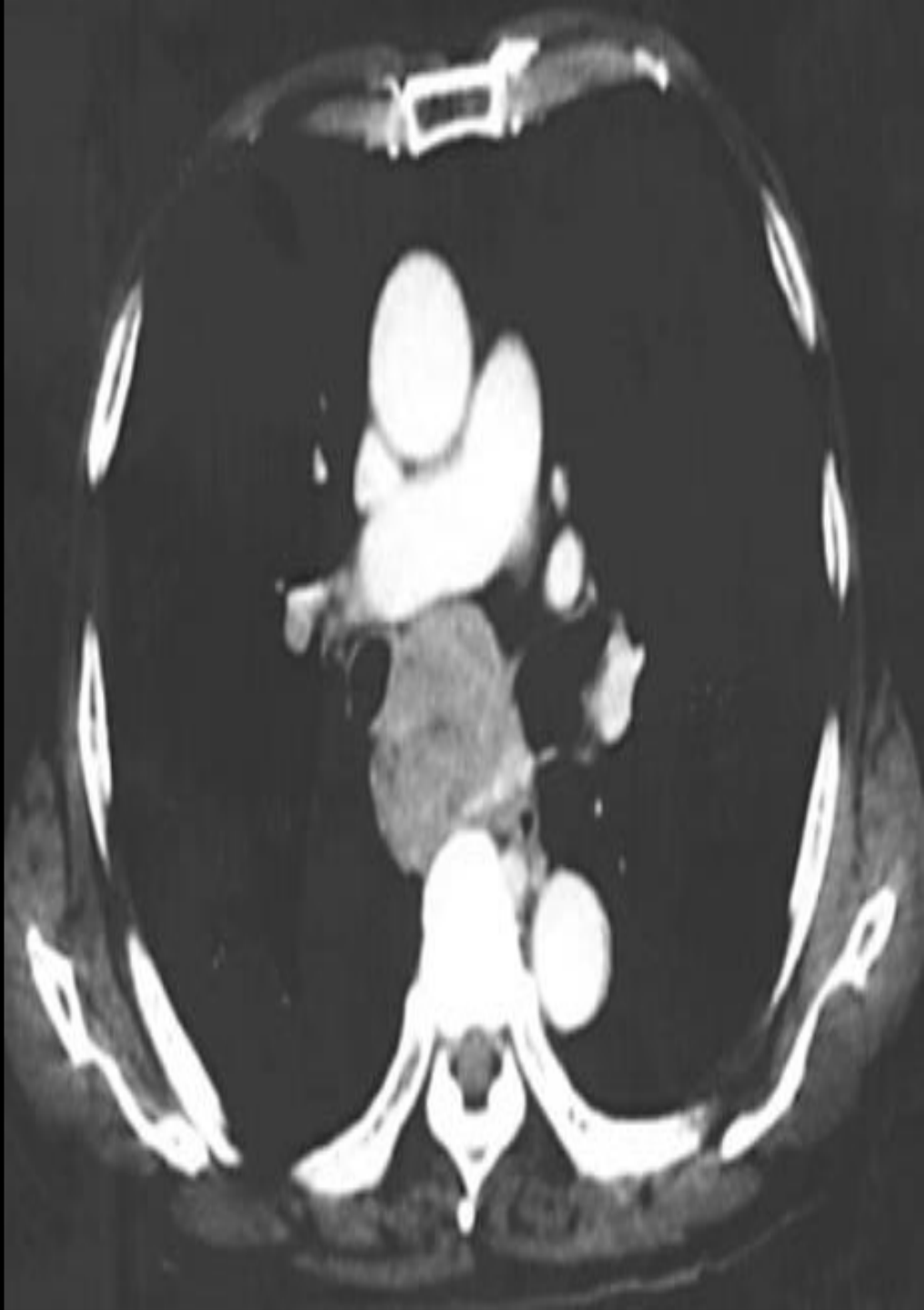


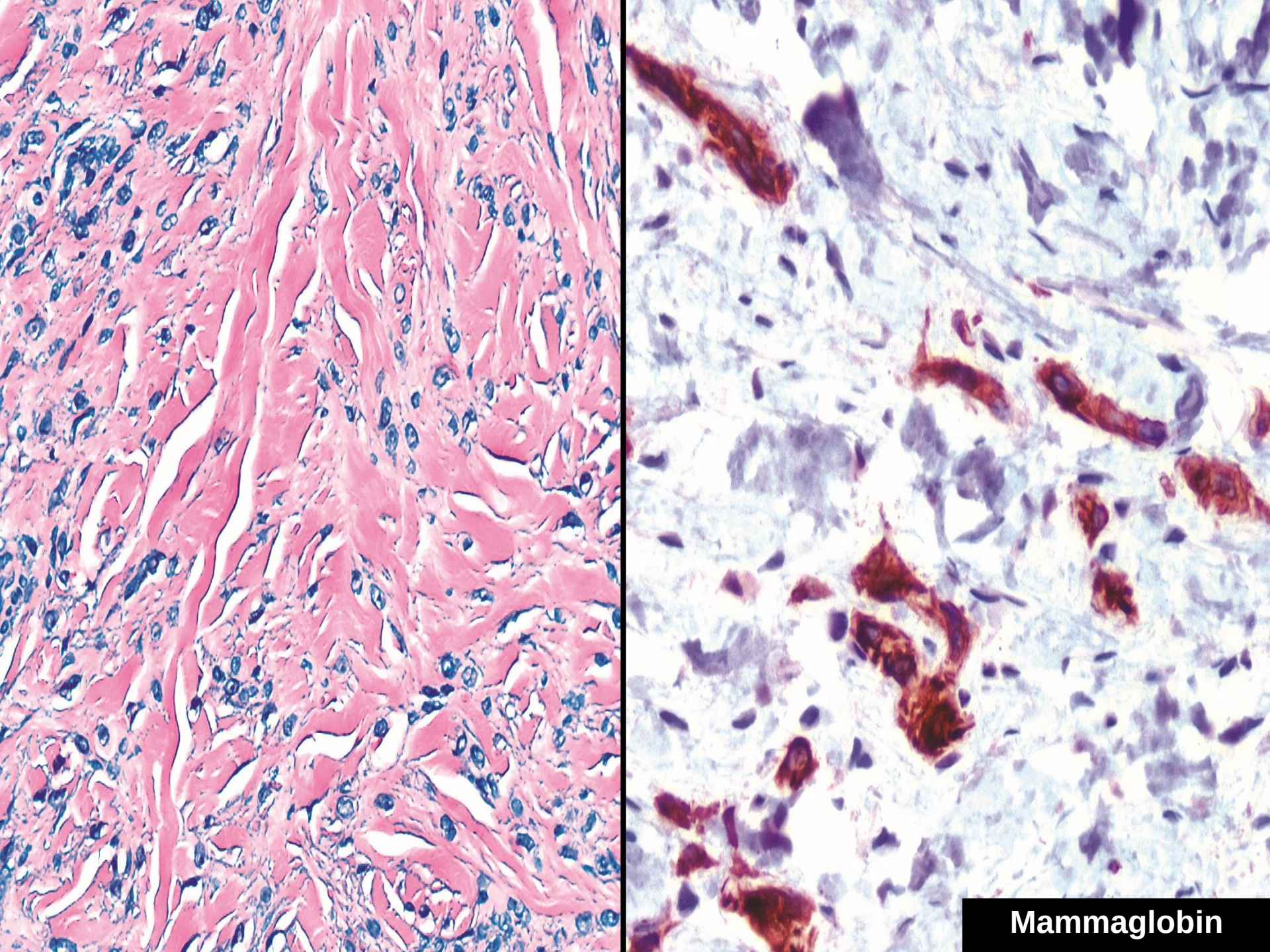

S100


EMA

SCLEROSING METASTATIC CARCINOMA IN THE MEDIASTINUM

- May or may not be lymph node-based, and can be present in all 3 mediastinal compartments
- Metastatic lobular breast carcinoma and signet ring-cell gastric carcinomas are principally represented
- Linear single-file arrays or small nests of neoplastic cells embedded in a desmoplastic or mature fibrous stromal background
- Pankeratin stains are helpful to delineate the distribution of the tumor cells


Mammaglobin


RESTAURANT