Lec-15

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Objective of lecture

1-Pleural tumor

2-Classification of pleural cancer

3-Clinical presentation of pleural tumor

4-Morphological features of pleural tumor

5-Summary

Case

70y old man, he has pleural mass , he was work in asbestose factory for 30 y ago , he is admitted to the emergency department because of presented with pleuritic chest pain , dyspnea , orthopnia , recurrent pleural effusion , massive and bloody fluid

Pleural tumor

Pleural fibroma (benign mesothelioma)

-It is localized growth arise from pleura that is often attached to the pleural surface by a pedicle.

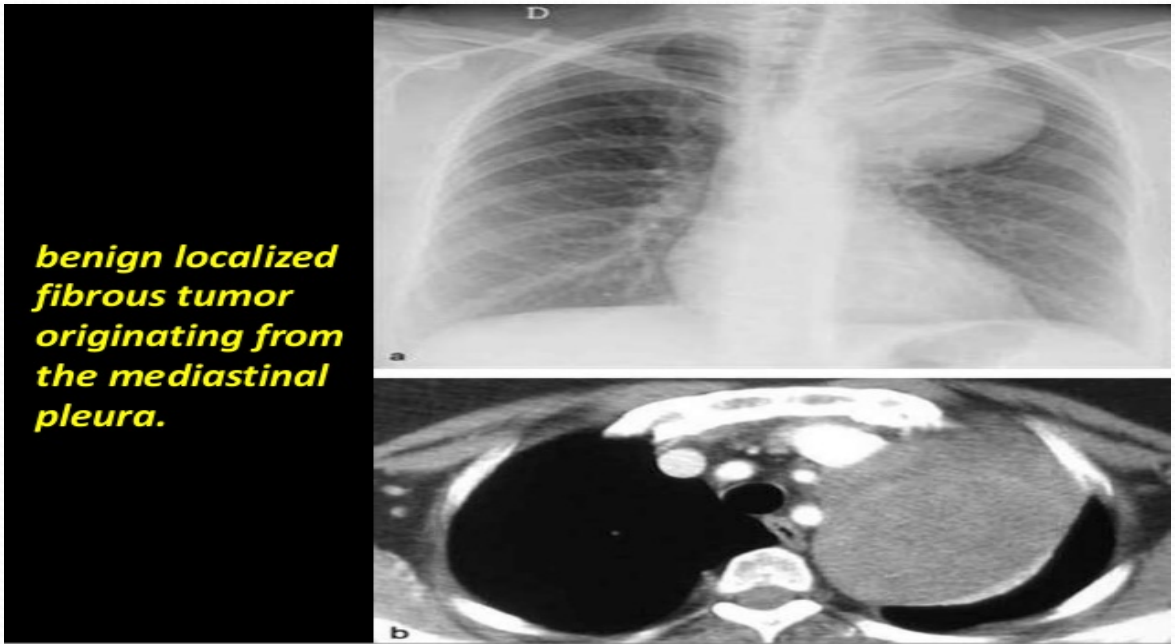
-It may be small (1 to 2 cm in diameter) or may reach an enormous size, but it tends to remain confined to the surface of the lung .

-These tumors do not usually produce a pleural effusion.

-The benign fibroma has no relationship to asbestos exposure .

Pleural fibroma (benign mesothelioma)

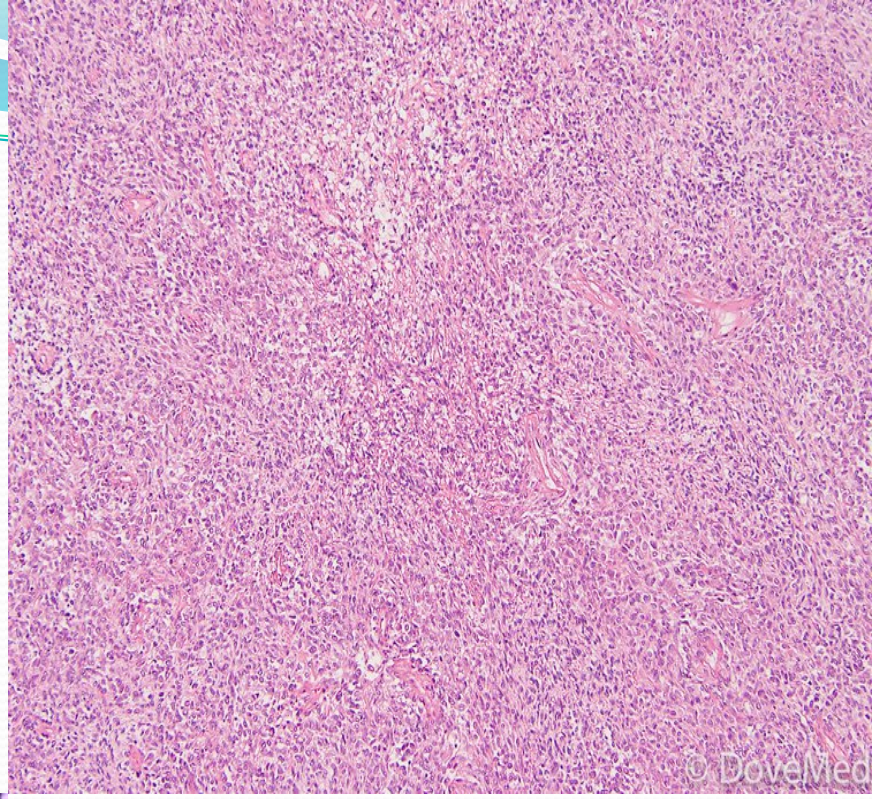
Grossly:- the tumors tend to be firm, smooth, rounded masses on cut surface is solid with a whorled appearance

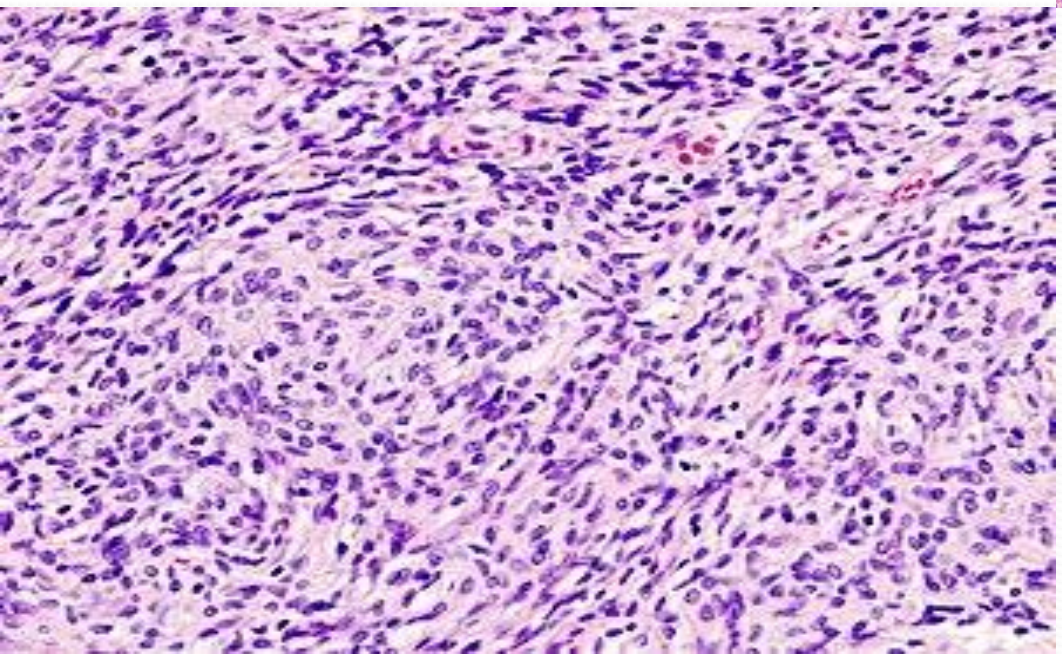


Pleural fibroma (benign mesothelioma)

Microscopically:-

the tumor shows whorls of reticulin and collagen fibers among which are interspersed spindle cells resembling fibroblasts. For this reason ,these mesotheliomas are also termed fibromas





Rarely, this tumor may be malignant, with pleomorphism, mitotic activity, necrosis, and large size (>10 cm).

Pleural cancer

-The pleura may be involved by primary (malignant mesothelioma) cancer or secondary (metastatic) cancer .

-Secondary metastatic involvement is far more common than are primary tumors.

The most frequent metastatic malignancies arise from primary neoplasms of the lung and breast.

In addition to these cancers, malignancy from any organ of the body may spread to the pleural spaces.

In most metastatic involvements, pleural effusion follows that often contains neoplastic cells.
For this reason, careful cytological examination of the sediment is of considerable diagnostic value.

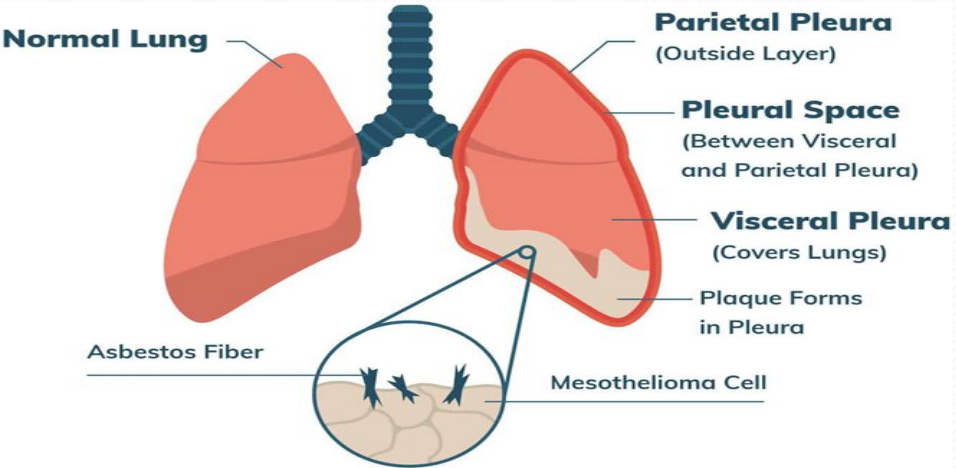
Malignant Mesothelioma(primary tumor)

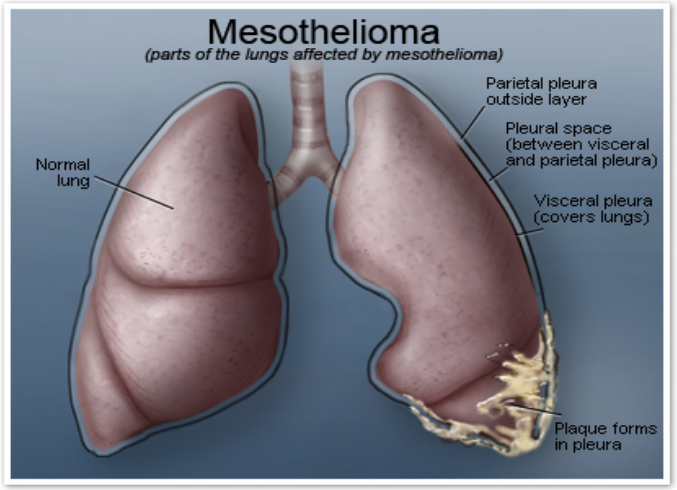
- It is a rare cancer arise from mesothelial cells, usually arising in the parietal or visceral pleura.

-Approximately 80% to 90% of individuals with this cancer have a history of exposure to asbestos.

-Malignant mesotheliomas are often preceded by extensive pleural fibrosis and plaque formation,

The latent period for developing malignant mesotheliomas is long (25 - 40 years) after initial asbestos exposure.



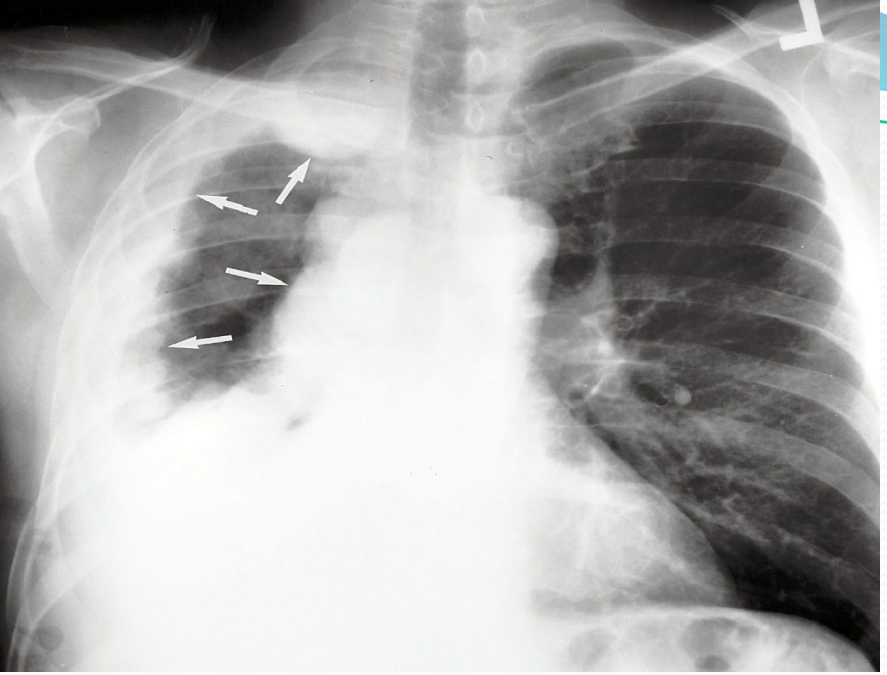


Clinical features

-Patients present with chest pain , dyspnea , and recurrent pleural effusion (massive and bloody pleural effusion) .

- Malignant Mesotheliomas are highly malignant tumors that invade the lung and can metastasize widely .

- Few patients survive longer than 2 years .



Malignant mesothelioma. CXR:-
shows right pleural opacification with a lobulated contour that involves the entire pleural surface (arrows), characteristic of malignant mesothelioma. There is ipsilateral loss of lung volume.

CT scan show nodular pleural tumor

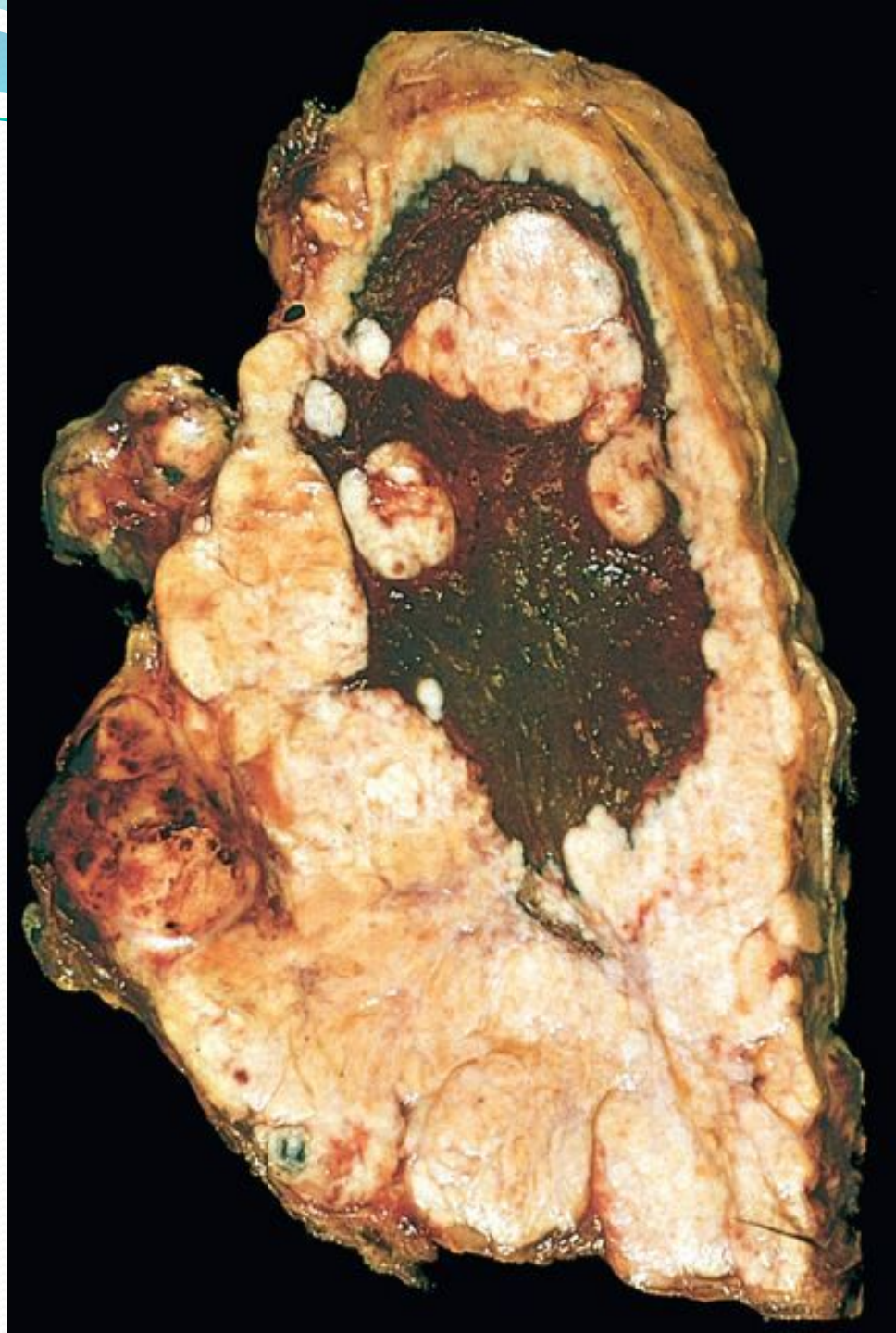
Gross features of Malignant mesothelioma

These tumors begin in a localized area but in the course of time spread widely.

At autopsy, the affected lung is typically ensheathed by a yellow-white, firm layer of tumor that obliterates the pleural space.

The neoplasm may directly invade the thoracic wall or the sub-pleural lung tissue.

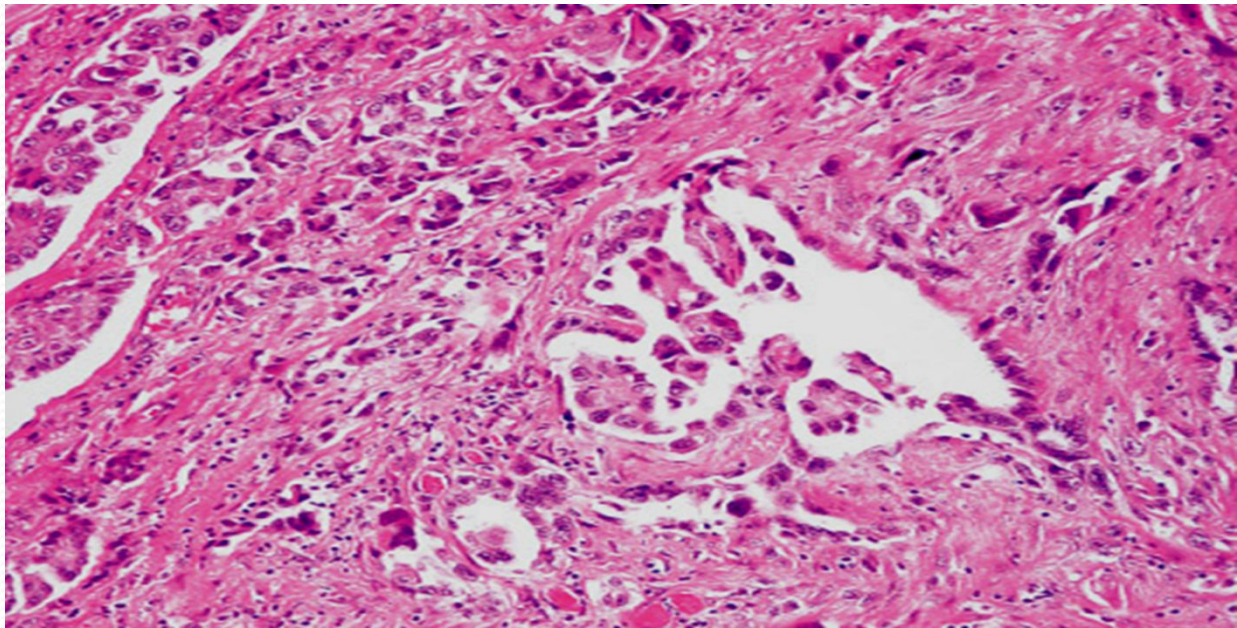
Malignant mesothelioma. Note lobulated ,thick, firm, white pleural tumor tissue that ensheaths this bisected lung



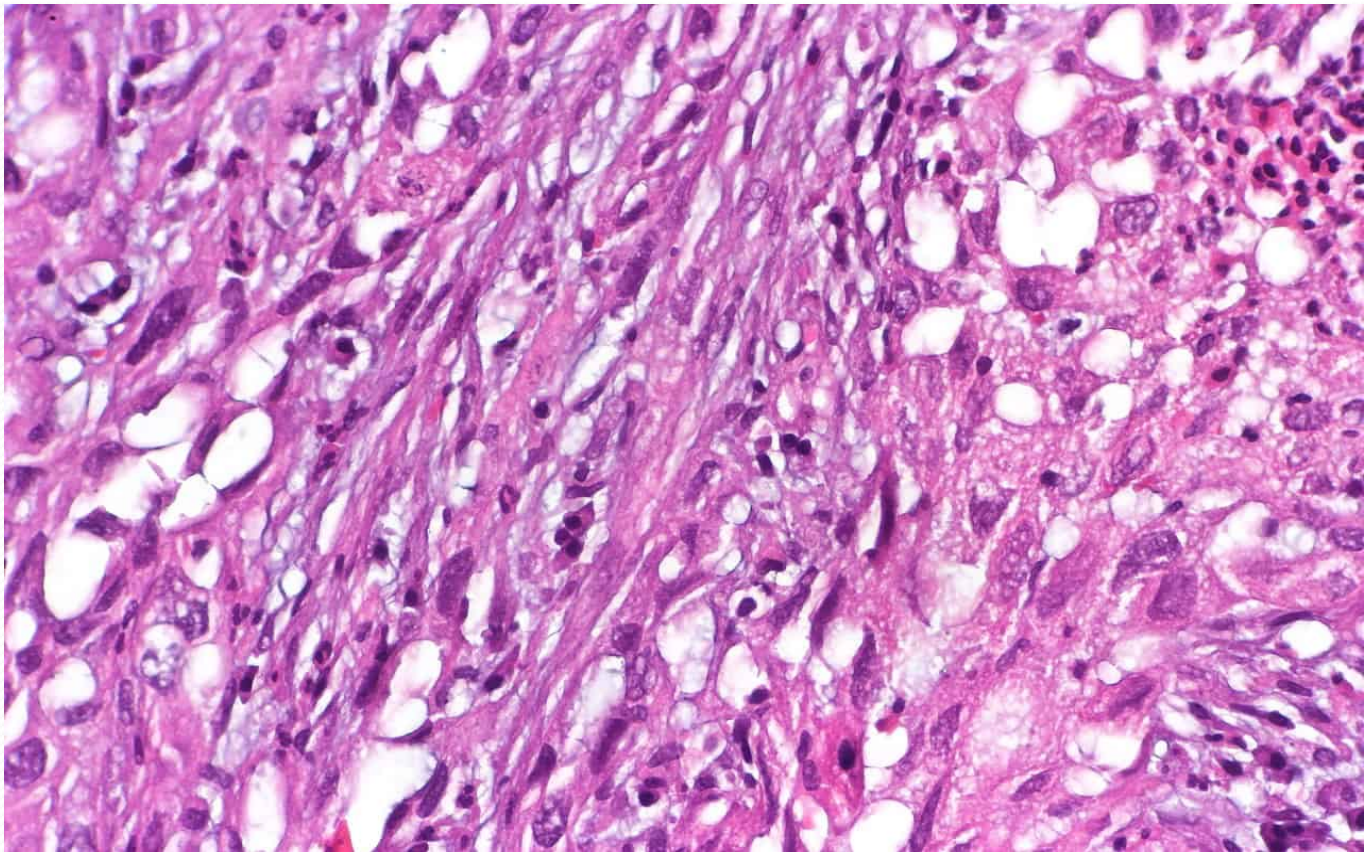
Microscopic features of Malignant mesothelioma

Mesotheliomas conform to one of three patterns:

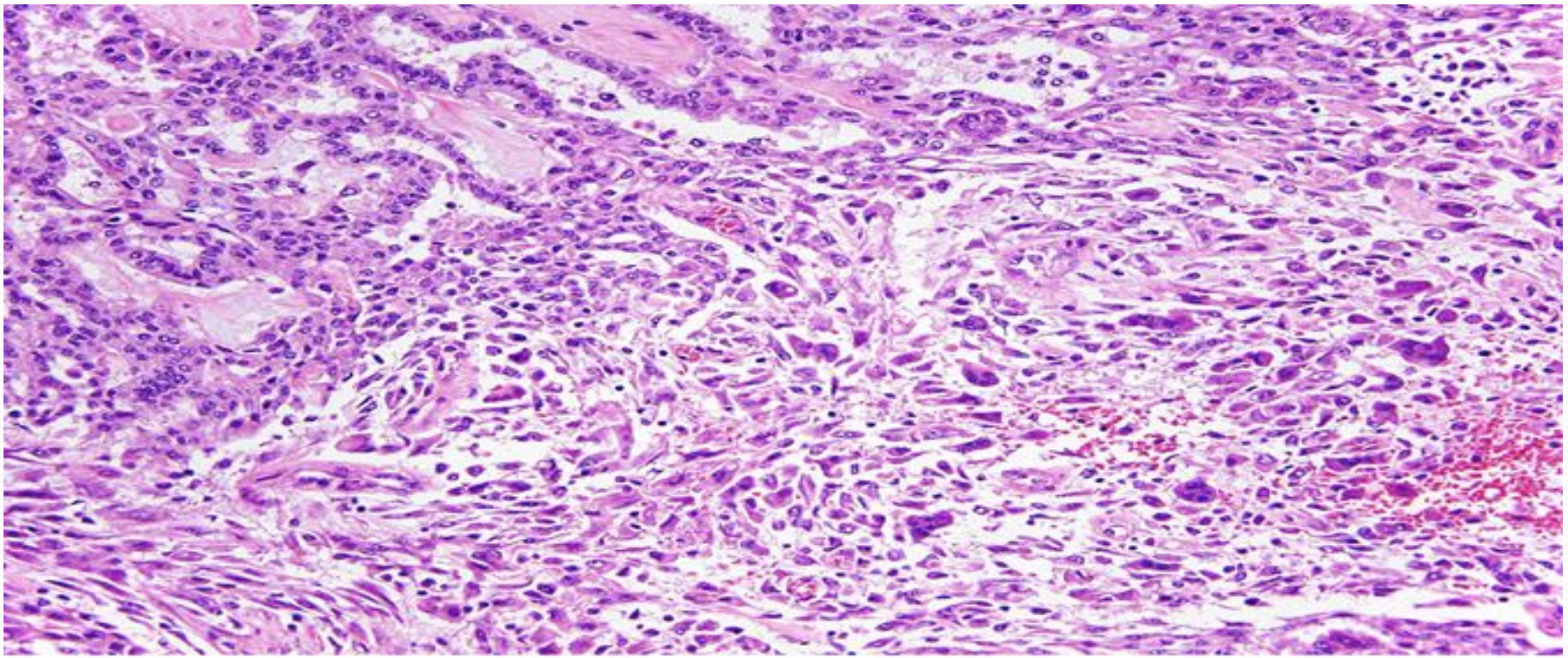
1. Epithelial: cuboidal cells line tubular and micro cystic spaces, into which small papillary buds project with features of malignancy which include pleomorphysium ,increased N/C ratio , hyperchromasia ,abnormal and increased mitotic figures .



2. Sarcomatoid: spindled cells grow in sheets with features of malignancy which include pleomorphysium , increased N/C ratio , hyperchromasia , abnormal and increased mitotic figure .



3. Biphasic: having both sarcomatoid and epithelial areas .



Biphasic mesothelioma is characterized by the presence of both epithelioid component (upper left; tubulopapillary pattern) and sarcomatoid component (lower right) (H&E 200×).

-A pleural cancer is almost always metastatic cancerous(secondary metastatic) and difficult to operate on.

-Malignant Mesotheliomas (primary cancer)are highly malignant tumors .

Asbestos play important role in pathogenesis of malignant mesothelioma .

Asbestos have no role in pathogenesis of benign mesothelioma

2023

Lets welcome together new year ,with a new hope and a blank convas to be painted by us

Happy new year