

Cystic Mediastinal Schwannoma Presenting as Pleural Effusion

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Abstract

Cystic schwannoma represents a neurogenic tumor of the mediastinum rarely reported in literature. Its rupture in the pleural cavity remains exceptional. We hereby report the case of a patient who presented with pleurisy for which diagnostic imaging including thoracic MRI revealed a cystic schwannoma ruptured in the pleura. This case, to the best of our knowledge, represents the very first of its kind reported in literature.

Keywords

Posterior Mediastinum, Schwannoma, Neurogenic Tumor, Computed Tomography, Magnetic Resonance Imaging

1. Introduction

Schwannomas are rare nerve tumors, accounting for 2% of neurogenic mediastinal tumors [1]. This tumor, usually poly-lobulated, rounded and well encapsulated, is generally located in the para vertebral groove around the intercostal nerve [2]. It is often discovered fortuitously as it is usually asymptomatic, or even more rarely in the event of compression of adjoining organs [1].

We deem highly interesting to report the case of a large cystic mediastinal schwannoma ruptured in the pleura, whose diagnosis was suspected on CT and confirmed on magnetic resonance imaging.

2. Case Report

Mrs. MS, 40-year-old female with no prior clinical history, referred to our unit

for diagnostic imaging. Extensive diagnostic imaging was required for a gradual worsening of a sub-acute chest pain with pleural effusion on plain chest X-ray dating few weeks prior to her referral.

Physical examination found a conscious patient, having a febrile with dyspnea and good general condition. Plain chest X-ray showed a right side opacity occupying almost the entire right lung space consistent with abundant pleural effusion.

Further work was done with thoracic CT revealing a voluminous heterogeneous cystic lesion of the left para vertebral foramen with posterior mediastinum extension, widening of D10-D11 foramen, a scalloping effect on the left vertebral pedicle and abundant left pleurisy (**Figure 1**). In the presence of a cystic lesion of costo-vertebral location with associated mediastinal extension and pleural effusion, the diagnosis of a schwannoma ruptured into the pleura was suspected.

To further confirm the diagnosis, MRI was considered necessary to study its endocanal extension. It revealed a large solido-cystic lesion taking up para vertebral space and extending through the left D10-D11 intervertebral foramen and to the ipsilateral pleural space.

Solid component appeared hypo-intense T1-T2 and was slightly enhanced after contrast medium injection. Cystic component had a parietal discontinuity coming into contact with ipsilateral pleural cavity with abundant effusion at this level (**Figure 2**).

Pathology examination generally reveals spindle shaped cells, with palisade nuclei and hyalin inclusions associated with cystic and ischemic zones. An intense and diffuse staining with PS100 (KI 67 in 10%) could be observed on immunohisto-chemistry (**Figure 3**).

The diagnosis of cystic mediastinal schwannoma ruptured into the pleural cavity was retained and the patient was referred for surgery where a complete tumor resection had been performed. Immediately postoperative recovery was uneventful with good clinical course up to date.

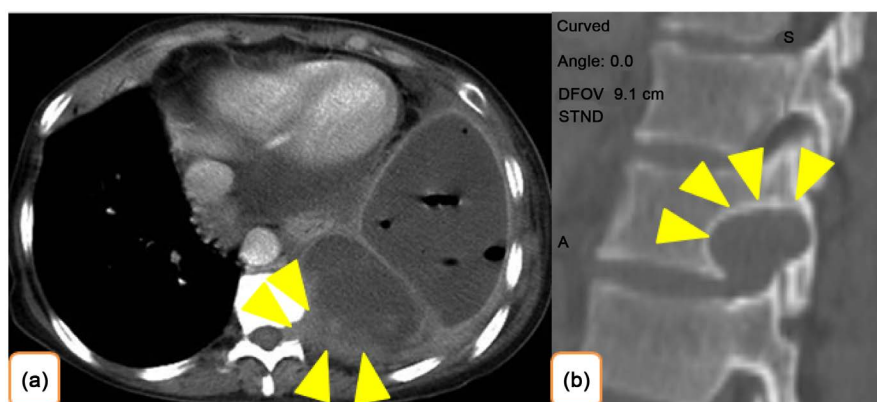


Figure 1. Chest CT scan, lung and thoracic cage window with iodinated contrast medium injection: large solido-cystic para spinal lesion of posterior mediastinum (a), enlarging the foramen between D10 and D11 with a scalloping effect on the left vertebral pedicle (b) (arrowhead) and associated abundant pleurisy.

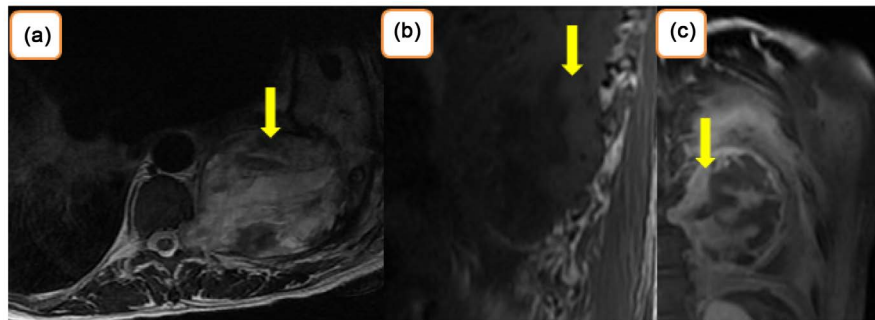


Figure 2. Thoracic MRI (from left to right) sequences T2, T1 and T1 with gadolinium showing a large lesion solido-cystic of the left para vertebral foramen and process extending through to the left D10 foramen and the ipsilateral pleural space and whose solid component appears hypo intense T2 and T1 ((a) and (b)) enhanced significantly following contrast (c) (arrowhead). The cystic component has a parietal discontinuity contacting the ipsilateral pleural cavity with pleurisy.

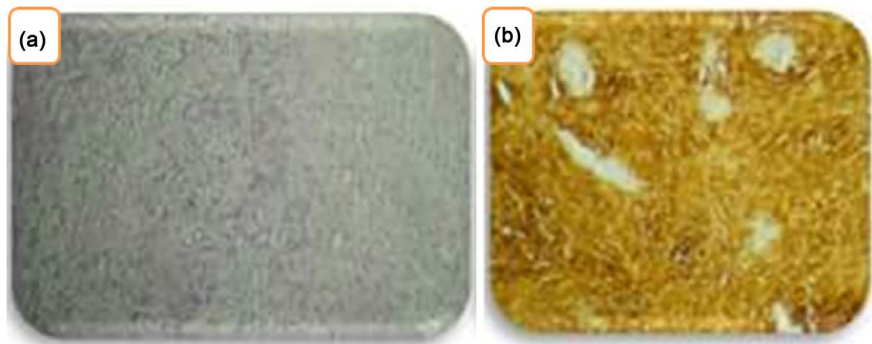


Figure 3. Pathology image showing spindle shaped cells with palisade nuclei, associated cystic and necrotic zones of ischemia (a) with intense staining with PS100 (KI67 à 10%) on immuno-marking (b).

3. Discussion

Schwannoma, also called neuroma is a rare tumor representing only 2% of all neurogenic mediastinal tumors [1] [3] [4]. This tumor, made up of cells forming the Schwann sheath, usually affects young adults between 20 and 50 years, with a female predominance, as was the case in our patient. [5] The circumstances of discovery are in most cases fortuitous with symptoms in relation to compression of adjoining structures. It could present as dyspnea or most often as cough associated with chest pain [3] [5].

In the case of our patient notwithstanding, the discovery of a schwannoma after rupture into the pleural cavity constitutes a rare clinical phenomenon. Thus representing to the best of our knowledge of recent literature, the first case of mediastinal cystic schwannoma ruptured in the pleura whose clinical setting was dominated by gradual onset of dyspnea.

In the presence of a mediastinal schwannoma, thoracic CT should be considered as an essential first-line imaging tool. It allows characterization of the lesion by determining its size, its outline, but above all, it confirms the presence of a cystic component or otherwise. Contrast medium injection improves its sensi-

tivity as it shows a significant enhancement of the solid component vis-a-vis the cystic component as was the case in our patient [3] [4] [6] [7]. MRI allows the study of its links with adjacent mediastinal structures as well as foraminal and endocanal extension as evidenced in our patient where foraminal extension was detected on MRI [8].

Given all the above clinical and radiological arguments we concluded the diagnosis of cystic mediastinal schwannoma ruptured in pleura. The patient was referred for surgical management

4. Conclusion

This case relates a particular mode of revelation of cystic mediastinal schwannoma whose rupture constitutes its main peculiarity. In the presence of a cystic lesion of the posterior mediastinum, the diagnosis of a nerve tumor in the mediastinum such as schwannoma should be considered. Diagnostic workup should include not only a CT scan but also an especially MRI as its enhanced resolution, facilitating the positive diagnosis while eliminating other differential diagnosis such as a hydatid cyst especially in endemic areas.

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