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Pulmonary Corpora Amylacea: An Incidental Autopsy Finding

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Abstract
Pulmonary corpora amylacea (PCA) is a rare entity. Pulmonary corpora amylacea are a cellular round bodies (approximately 60-100µm in diameter) with homogenous laminated structures. This is the incidental finding seen in the alveolar spaces of the lungs, particularly in the elderly. In the present study, we report an autopsy case of 38 years old man with Pulmonary corpora amylacea.
Keywords: *Corpora Amylacea, Eosinophilic Body, Autopsy, Lungs.*

Introduction

PCA was first described by Friedreich in 1856.[1] Pulmonary corpora amylacea (PCA) is a rare condition, which is detected particularly in the elderly in 0.6–3.8% of autopsy cases.[2] Pulmonary corpora amylacea (PCA) is an eosinophilic, acellular, round and laminated material of unknown significance.[1] PCA may be an incidental finding or may be associated with various pathological conditions like pneumonia, pulmonary infarction, pulmonary collapse and chronic heart failure. No general consensus concerning either the histogenesis or morphogenesis of PCA has been obtained.[3]

Case Report

We report an autopsy case of 38 years old male who was a chronic alcoholic and died due to complications of cirrhosis. The specimen of heart, pieces of lungs and liver were received in the Department of Pathology.

On gross examination of the specimen, heart and lungs were unremarkable and liver showed numerous nodules.

Sections were taken for H & E from representative areas. On microscopic examination, heart was unremarkable and liver showed features of cirrhosis. The histopathological examination of lungs showed presence of few homogenous eosinophilic acellular round bodies 50-100 micrometers in diameter. The round bodies frequently had a nidus and were surrounded by alveolar macrophages and many of them were seen being engulfed by the macrophages. On special staining and immunohistochemical staining these round bodies were positive for PAS, Congo Red and EMA.

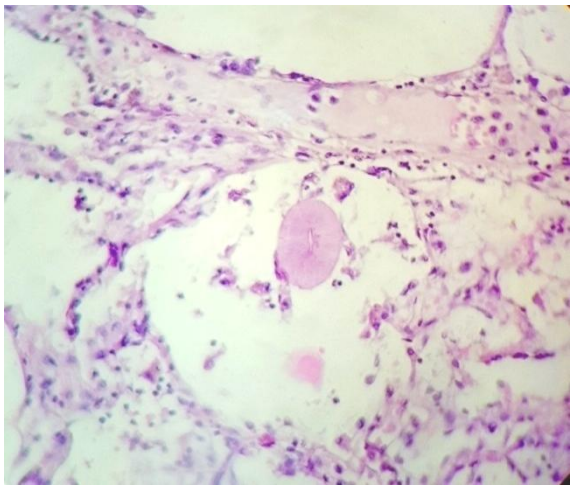

Figure 1 A: Pulmonary Corpora Amylacea in the alveolar space (HE;100X)

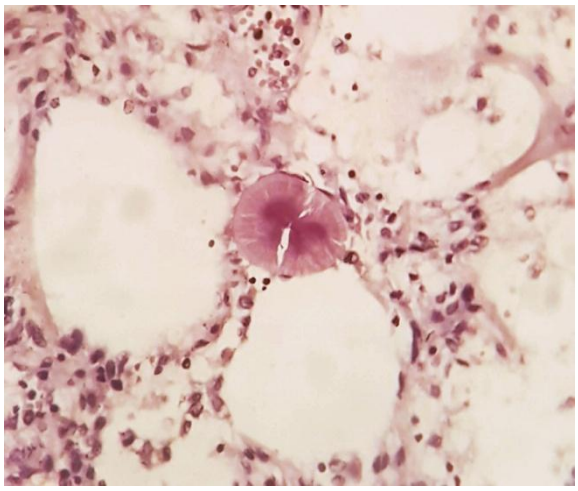

Figure 1 B: Pulmonary Corpora Amylacea showing congo red positivity (Congo Red;100X)

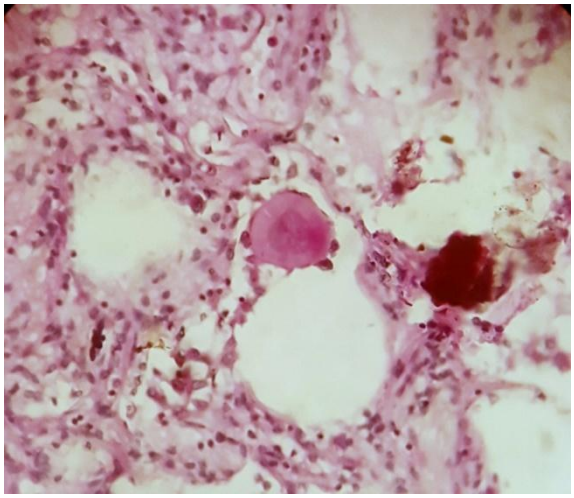

Figure 1 C: Pulmonary Corpora Amylacea showing PAS positivity (PAS;100X)

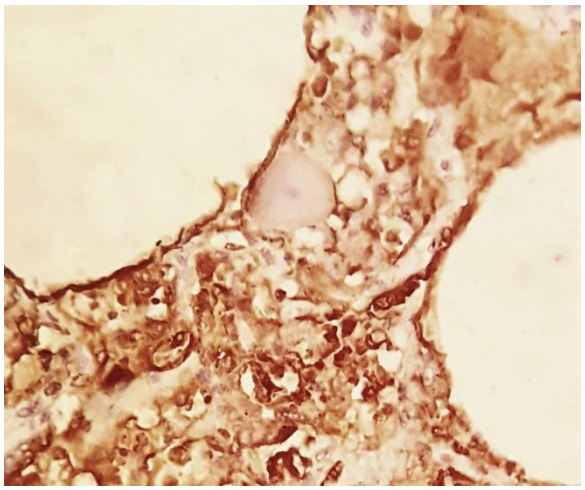

Figure 1 D: Pulmonary Corpora Amylacea is positive for EMA in peripheral concentric pattern (IHC; 100X)

Discussion

Although CA were mentioned in literature a long time ago, very little is known about their origin and function. Since ultrastructure of CA suggests that they originate from one cell type, their etiology has not been fully elucidated so far.[4] Corpora amylacea (CA) had also been reported to occur in other organs such as brain, uterus, prostate, eyes and pineal gland.[5]

Corpora amylacea (CA) are spherical structures composed mainly of polysaccharides. Electron-microscopic CA has regular round or spherical shape. In addition, rod-like, concentric or target-like shapes of CA are also reported, with central regions more densely stained than peripheral ones.[4]

In 1957, Michaels and Levene reported that PCA are found in 41 out of 1,070 post-mortem lung sections in increasing frequency with advancing age.[6] Hollander and Hutchins also observed that PCA are seen in 37 out of 6500 (0.6%) of the autopsy cases.[7]

The causes of PCA are still unclear. Some authors described that PCA are related to degenerative and metabolic disorders, pneumonia, pulmonary infarction, pulmonary collapse, or chronic heart failure.[8] It has been suggested that PCA may be formed by sequential aggregation, fusion, and coalescence of degenerated alveolar macrophages.[9]

In the present case, alveolar macrophages surrounded PCA and phagocytized PCA. These findings also suggest that the collection of macrophages might have been the result of reactions to foreign bodies and these particle-like foreign material may act as a nidus or nucleation center for the formation of PCA.

Differential diagnosis includes parasitic infestation and amyloidosis. However laminated structure and special stains help to differentiate with the two. Some authors suggested that glycoproteins of pulmonary surfactant are their principal constituents.[10]

Ohtsuki et al and Yamanouchi et al revealed that the positive staining of PCA for PAS and EMA help in making correct diagnosis.[2] This is consistent with the result in the present study.

Conclusion

PCA is a rare finding in the lungs with controversial histogenesis and its identification can sometimes points towards the pathology in the lungs. It is important to be aware of this entity to avoid misdiagnosis.

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