

Rounded Atelectasis - A Brief Case Report -

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Rounded atelectasis is a focal, pleural-based lesion that is the result of pleural and subpleural scarring and atelectasis of the adjacent lung tissue. We experienced a case of asbestos-associated rounded atelectasis that had developed in a 50-year-old male. When examined with routine chest radiography, the patient was shown to have an asymptomatic chest mass. Computed tomography showed a pleural-based mass with a curvilinear shape about 4.2 cm in greatest diameter in the medial basal segment of the right lower lobe. To exclude the possibility of malignancy the mass was excised by video-assisted thoracotomy. The mass was round and firm, and was gray and yellow in color. Microscopically, marked pleural fibrosis extended into the underlying lung parenchyme and then resulted in atelectasis. There are ferruginous bodies in dense fibrous pleura.

Key Words : Lung diseases-Pleura-Atelectasis-Asbestos

Rounded atelectasis (RA) is a focal, pleural-based lesion resulting from pleural and subpleural scarring and atelectasis of the adjacent lung tissue. Most patients with rounded atelectasis are asymptomatic and the lesions are incidentally founded in chest radiography. In cases reported in literatures, 60-70% of patients with RA had been exposed to asbestos.¹⁻⁴ We report a case of asbestos-related RA, confirmed by video-assisted thoracoscopic (VATs) biopsy in a 50-year-old male. To our knowledge, this case is the second of its kind of to be published literature in Korea.⁵

CASE REPORT

When examined with a routine chest radiography, a 50-year-old male was shown to have an asymptomatic chest mass. Physical and laboratory examinations were normal. The patient had a history of smoking two packs of cigarettes per day for 30 years. He was an office worker and denied having had any history of exposure to asbestos. A simple chest X-ray revealed a pleura

based round to ovoid increased density in the basal area of the right lower lobe. Computed tomography (CT) revealed a pleural based enhanced mass of about 4.2 cm in greatest diameter in the right diaphragmatic pleura of the medial basal segment of the right lower lobe. The mass showed irregular curvilinear shape resembling a comet-tail (Fig. 1). The mass has more increased in size, compared to six months ago. A VATs-biopsy was done to rule out malignancy.

Grossly, there is a zone of pleural scarring and retraction with a curvilinear configuration of the underlying lung tissue (Fig. 2). Histologic findings show marked pleural and septal fibrosis, associated with atelectasis of the adjacent lung tissue (Fig. 3). Calcification and chronic inflammation are present. There are asbestos bodies in the dense fibrous pleura (Fig. 3, inset).

DISCUSSION

RA, first described in 1928 by Loeschke, is an unusual form

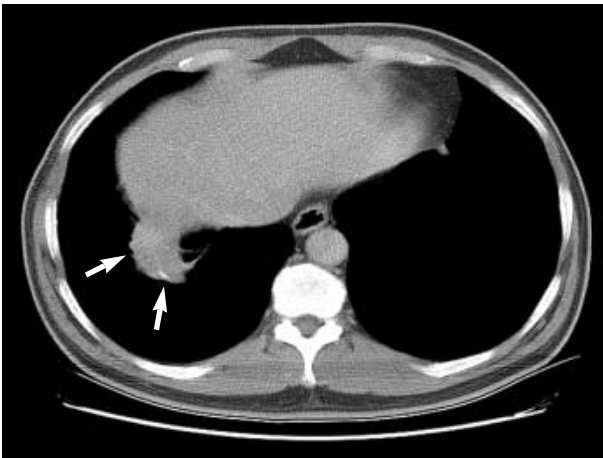


Fig. 1. CT reveals a mass of about 4.2 cm in largest diameter in medial basal segment of right lower lobe (arrows). Converging of vessels and bronchi near the mass gives the appearance of a comet-tail.

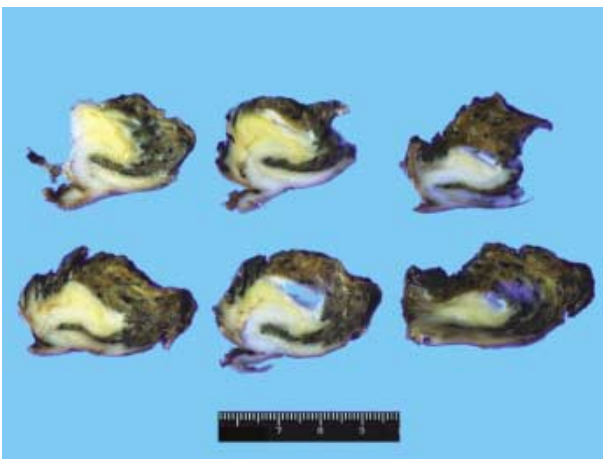


Fig. 2. The cut surfaces show a round mass with curvilinear whitish dense scarring into the lung parenchyme.

of lung collapse. It occurs adjacent to the pleural surface and may simulate a pulmonary neoplasm.¹ Blesovsky discussed it in detail and called it “the folded lung” in 1966. Various terms have been used to describe this condition, including contracted pleurisy, pleuroma, atelectatic pseudotumor, Blesovsky syndrome, and shrinking pleuritis with atelectasis.^{1,2} The condition was further delineated by Hanke and Kretzschmar,¹ who suggested the term “rounded atelectasis” in 1971.

Agreement on the pathogenetic mechanism of RA remains undecided. Two mechanisms have been suggested. The first is that an underlying pleural exudate causes local atelectasis in the adjacent lung and adheres to another part of the lung. As the effusion is absorbed and the adjacent parts of the lung expand, the adhesions remain and then additionally distort the lung parenchyme.¹ The other is that RA is the result of a local pleu-

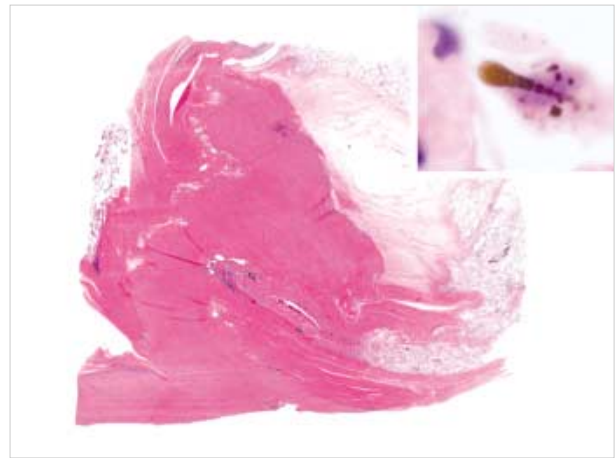


Fig. 3. Low magnification shows marked pleural fibrosis and septal fibrosis with surrounding atelectasis. There is a ferruginous body (inset).

ritis, caused by irritants such as asbestos.² A pleural effusion can occur following exposure to asbestos; the pleura contracts and thickens with fibrous strands reaching deep into the lung. The underlying lung shrinks, and atelectasis develops. The multifactorial etiology of RA suggests that both mechanisms probably operate in different patients.^{3,6} A history of asbestos exposure is common in about 70% of cases present.¹ The patient of this case denied having had any history of asbestos exposure, but the prevalence of asbestosis is fairly widespread, which can explain the presence of asbestos body on histologic examination. RA rarely disappears spontaneously. The regression of RA usually takes one or several months and mainly occurs in the nonasbestos-exposed groups.³

The majority of RA were located in the lower lobe of lung, especially in the posterior or posteromedial areas. The radiologic features of RA are characteristic. A simple chest X-ray shows as a round or oval subpleural opacity. A CT shows the characteristic “comet-tail sign”.^{6,7} As the lung collapses, the vessels and bronchi that lead to the mass are pulled into the region. The convergence of bronchi and vessels toward the mass has been termed “comet-tail”. If RA is suspected, a CT should be performed. If a confident diagnosis is made, then follow-up with conventional radiography is recommended.^{6,7} But, RA may have suggesting features of malignancy in radiography. In such cases, the histologic confirmation is necessary.

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