

Fibrous Pleural Plaques Detected at Autopsy

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ABSTRACT

The reported case was a 84-year-old male, dead after a traffic accident. The death was considered to be suspicious by prosecutor and an autopsy was mandated. In macroscopic autopsy investigation left tibia, fibula and multiple rib fractures, widespread seborrheic keratoses, and hyperpigmented skin lesions were detected. In the left chest cavity blood content and white colored lesions spread on the left parietal pleura and chest surface of the thoracic diaphragm were observed. The histological examination of the pleural lesions revealed fibrotic hyalinized structures with calcified foci. Investigation of pleural plaques in forensic autopsy is important for scientific classification of this interesting entity.

Keywords: forensic autopsy, pleura, fibrous plaque

INTRODUCTION

Fibrous pleural plaques in different studies, often reported to be associated with asbestosis (1-7), were not completely described entity (1-6). In the recently published study pleural fibrous plaque formation related with retroperitoneal fibrosis was also discussed in the literature (3). Investigation of pathological features of this rare entity in forensic autopsy is important for scientific description and determination the frequency of this pathology in the general population. □

CASE REPORT

The document of death exposed that victim died in the public hospital emergency service admitted after traffic accident during emergency interventions. The death was considered to be suspicious by prosecutor and an autopsy was mandated. The case was a 84-year-old man cadaver; he was 175 cm tall and weighed 75 kg. Family members explained that at the same day traffic accident occurred; deceased was front passenger, relatives also stated that he had no medical history of disease, only smoking history of a pack of ciga-

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FIGURE 1. Widespread seborrheic keratoses, hyperpigmented skin lesions.



FIGURE 2. Pleural plaques on parietal pleura.

rettes per day for 50 years was expressed. Gross external examination detected cyanosis of the nail bed, widespread seborrheic keratoses and hyperpigmented skin lesions of the body (Figure 1). Deformation of left lower extremity, periorbital ecchymosis in the left orbita, abrasions and bruising on the nose, left eyebrow, needle puncture marks on right antecubital region were observed. On internal investigation, left tibia and fibula fracture, left and right sided multiple rib fractures at the midclavicular line, 3x2 cm contusion area of left lower lung lobe were determined. In the left chest cavity 600 cc of blood content and white colored, 3-6 cm

in diameter lesions, pleural plaques with smooth margins and hard surface, spread on the left parietal pleura and chest surface of the thoracic diaphragm were observed (Figure 2). The histological examination of the pleural plaques revealed fibrotic hyalinized structures with calcified foci, also edema of internal organs were detected. Organ specimens, blood and urine systematic toxicological analysis revealed none of the substances screened for. According to the death certificate, death cause was reported as blunt trauma due to traffic accident. □

DISCUSSION

Fibrous pleural plaques identified in different studies, were often reported to be associated with asbestosis (1-7), but the existence of pleural plaques detected at autopsies in the general population is not yet completely described and understood (1-6). Andrión et al(4) reported a significant increase in the incidence of pleural plaque frequency especially in the male population over age 50 in autopsy study like our case. In autopsy series various investigators asserted that, the localization, spread, quantity of pleural fibrous plaques and duration of asbestos exposure were strongly related (1,2,4), in different study it was emphasized that asbestos exposure was only associated with pleural thickening (3). Besides histopathologic examination of the cases revealed that asbestos bodies were not indicated in all of the cases, also it was stated that a portion of these structures are not essential for plaque formation (1), in concert with reported case. In alternative study an important and statistically significant relationship between pleural plaque formation and cigarette smoking in middle-aged men was exposed similar to the reported case (5). Hillerdal (6) claimed that none of the theories attempting to explain the formation of fibrous pleural plaques are sufficient, researchers stressed that the effect of asbestos is of great importance, but furthermore the complex structure of the lymphatic circulation is important in the pleural disease pathophysiology. In the autopsy series study, Roberts (1) reported a 12.3% incidence rate of hyaline-fibrous pleural plaques, also in a significant proportion of cases differing from our case asbestos bodies were detected in the lungs, besides Churg (2) identified asbestos bodies in the only half of the

cases in the general autopsy population, in other cases, the cause of plaque formation has been reported to be undetermined. Uibu et al. (3) in a new published study reported that retroperitoneal fibrosis was associated with pleural fibrous plaque formation. On the other hand Mollo et al (7), in their study on the relationship between pleural plaque and cancer reported that pleural plaques are identified in some types of cancer associated with asbestos.

We state that seborrheic keratoses detected in our case, more over it was not mentioned previously in the literature, presents the coexistence and relationship with pleural plaques. Detection of pleural fibrous plaques in autopsies, which are a clinically significant entity, will extract the frequency and pathologic properties of these lesions in the general population.

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