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CASE REPORT

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Pericardial Lipoma: An Autopsy Case and Review of the Literature

ABSTRACT: Postmortem examination performed on a 70-year-old man revealed a thinly encapsulated, ovoid, large mass in the right hemithorax. The tumor was attached with its pedicle to the atrioventral pericardium and adjoined the diaphragm with compression of the right lower lobe of the lung. There was no adhesion between the tumor and the surrounding organs. Light microscopy showed a lipoma consisting of mature adipose tissue, and no malignancy was found.

KEYWORDS: forensic science, pericardial lipoma, mediastinum, autopsy

Lipoma, a tumor composed of mature fat, represents by far the most common mesenchymal neoplasm. It may be single or multiple and may occur as a superficial (subcutaneous) or deep-seated tumor (1).

Deep-seated lipomas are comparatively rare, and the average size tends to be larger than that of cutaneous lipomas. These are best demonstrated by either noninvasive imaging, such as ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), or at autopsy. They normally cause no symptoms. Localization and size of the tumor determine the type of symtomps, such as dyspnea, cough, and pain (1–5).

Lipomas in the thoracic cavity are rare, and pericardial lipomas even more so (3). We present a forensic autopsy case of pericardial lipoma, which is considered to be a relatively rare disease, and we also review the relevant literature.

Case Report

We describe the forensic case of a 70-year-old man who was injured by falling down. He was taken to a peripheral hospital. Radiologic examination revealed a right hemothorax, and thus tube thoracostomy was performed on him. He expired on the same day. To clarify the exact cause of death, the corpse was sent to the Council of Forensic Medicine.

Our case was not obese, he was 170 cm in height and weighed almost 70 kg. The main external findings at autopsy were bruising on the neck and foot. Deep lipoma ($2 \times 2 \times 1$ cm) was found in the region of the frontal scalp. Opening the chest, we found in the right hemithorax a well-encapsulated, ovoid, soft tissue mass that measured $20 \times 15 \times 3.0$ cm and weighed 370 g (Fig. 1). The tumor was attached with its pedicle to the atrioventral pericardium and adjoined the diaphragm, with compression of the right lower lobe of the lung. There was no adhesion between the tumor and the surrounding organs. On cross-section, the cut surface was of a uniform yellow lobulated appearance and, it was associated with focal bleeding areas. The histology of the tumor was composed of mature fat cells with no evidence of malignancy (Fig. 2).

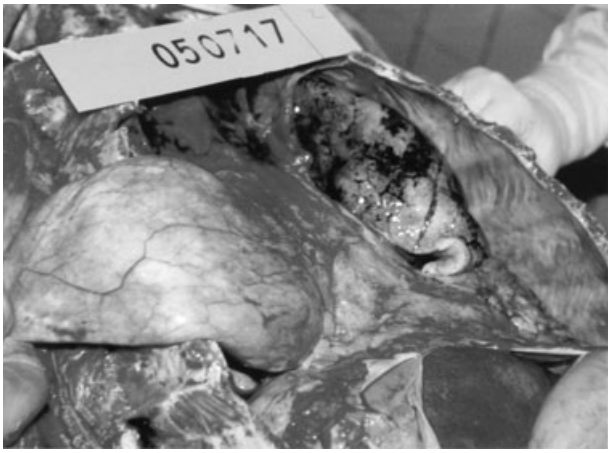

FIG. 1—*A well-encapsulated, ovoid, soft tissue mass in the right hemithorax.*

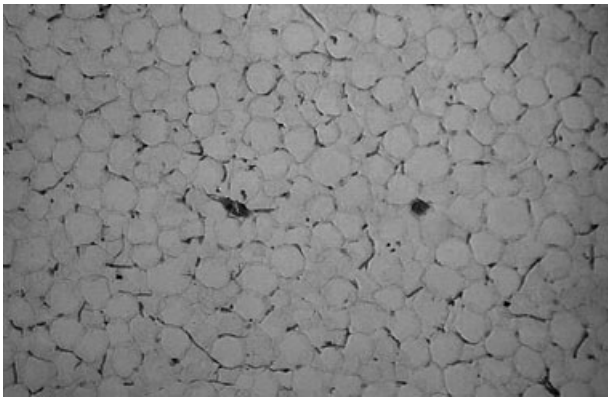

FIG. 2—*The histology of the tumor was composed of mature fat cells (hematoxylin-eosin, original magnification ×100).*

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Discussion

The mediastinal lesions most commonly encountered by pathologists are neoplasms and cysts. Mesenchymal tumors constitute approximately 6% of all mediastinal masses. They occur predominantly in the anterior mediastinum and are reported to represent 1.6–2.3% of all mediastinal masses. Abnormal shadow on a routine chest radiograph, CT scan, MRI, or autopsy is most helpful in diagnosis. Deep-seated lipomas have been largely ignored in the literature. This is because most lipomas grow insidiously and cause few problems other than those of a localized mass. As a consequence, the reported incidence of lipoma is probably much lower than the actual incidence (1,2,6). We present an autopsy case with pericardial lipoma that showed rare finding.

As etiologic factors, little is known about the pathogenesis of these tumors. Familial incidence can be demonstrated in a small number of patients. In the last few years, cytogenetic studies have provided an interesting and important insight into the origin of lipomas. Clonal cytogenetic abnormalities have been identified in 50–80% of the solitary lipomas. These studies revealed that the ordinary lipomas show translocations involving 12q13-15, interstitial deletions of 13q, and rearrangements involving 6q21-23. Lipomas are more common in obese persons and often increase in size during a period of rapid weight gain (1). In contrast, severe weight loss in cachectic patients or periods of prolonged starvation rarely affects the size of lipoma, suggesting that the fatty tissue of lipomas is largely unavailable for general metabolism (1,2). Our case was not obese.

Lipoma is rare during the first two decades of life, most become apparent in patients 40–60 years of age (1). In the literature, Trusen et al. have reported an 8-year-old girl with paracardial lipoma (7). Statistics as to gender incidence vary, but most report a higher incidence in men (1). In this study, our case was a 70-year-old man.

Deep-seated lipomas tend to be less well circumscribed than superficial ones, and their contours are usually determined by the space they occupy. Intrathoracic lipomas, for instance, may extend from the upper mediastinum, neck, or subpleural region (1). In this case, we found a well-circumscribed pericardial lipoma.

Lipomas are classified according to their histopathologic characteristics into conventional lipoma, angiolipoma, spindle cell lipoma, pleomorphic lipoma, bening lipoblastoma, and angiomyolipoma (1). In our case, light microscopy revealed a lipoma consisting of mature adipose tissue, and pleomorphism and mitotic figures were absent. Malignant changes in a lipoma are exceedingly rare—only few examples have been reported in the literature. Fatty necrosis and multinucleated histiocytes are present in 25% of the cases (2).

In conclusion, we report a rare case of a conventional pericardial lipoma in the right hemithorax, considering that this case may contribute to the establishment of the actual incidence of lipomas.

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