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CASE REPORT

Lipoma of the external thoracic wall

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Lipoma of the external thoracic wall. M.A. Sulzer, R. Goei, E.C.M. Bollen, P.H.P.H. Theunissen, F.P.V. Maesen. ©ERS Journals Ltd 1993.
ABSTRACT: We report the case history of an external thoracic wall lipoma, which was noticed incidentally on a chest roentgenogram because of its calcification. A probable diagnosis was made by computer tomography. Because of the increase in size of the tumour it was removed surgically, but no evidence of malignant degeneration was found.
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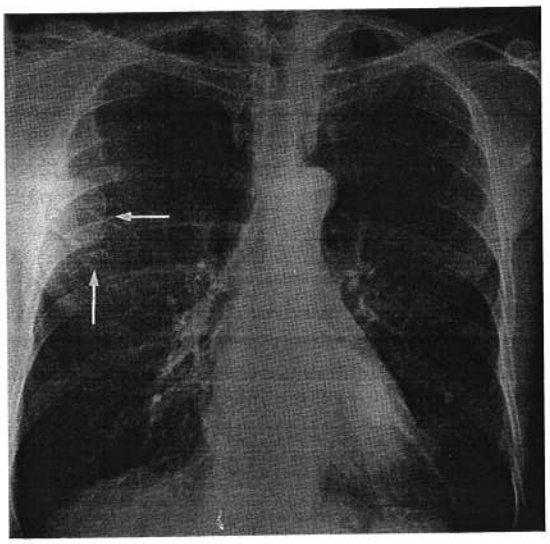
We report the case history of a patient with an extrathoracic lipoma, in whom the diagnosis was only made at an advanced age, and by coincidence, because of the appearance of changes in the chest X-ray resulting from an extrathoracic lipoma of the right upper chest wall. The tumour had probably been in existence for a considerable time.

Case history

In February 1992, a 71 year old ex-coal miner was referred to the out-patient clinic of the Department of Respiratory Diseases. His general practitioner had arranged a chest X-ray following an episode of an influenza-like illness, which had not resolved completely. The previous history of this patient revealed, in addition to coal mining underground, a duodenal ulcer, which was treated by gastrectomy in 1970, a cystectomy for bladder carcinoma in 1976, and a gall-bladder resection for gall stones in 1988. There was no history of trauma to the chest in the period between June 1985 and November 1988. The present complaint was dyspnoea on effort.

On X-ray, an egg-shaped structure could be seen in the right mid-zone, with a diameter of 4×3.5 cm (fig. 1a). Earlier chest X-rays, from March 1975 and June 1985, did not show this at all; although, a chest X-ray

a



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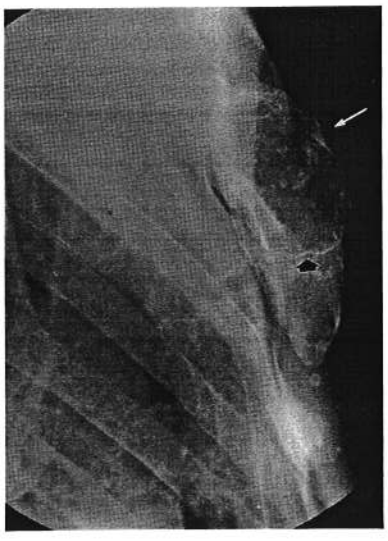

Fig. 1. – a) Posteroanterior (PA) view of the chest showing a well-defined density in the upper zone of the right hemithorax, measuring 3.5×4 cm (arrows). b) On the tangential view, the lesion appeared to consist of a soft tissue mass (white arrow), with areas of calcification (black arrow). Its extrathoracic location can also be appreciated from this view.

in November 1988 (made at the time of the gall-bladder resection) did suggest the tumour, but no further action had been taken. The transverse view showed that the tumour lay extrathoracically and approximately 10 cm higher than was suggested by the anterior posterior view, possibly in connection with the pectoral muscles (fig. 1b).

Inspection of the thorax showed a somewhat more prominent right pectoral muscle. On palpation it was possible to feel a soft moveable mass through the muscle, and lateral to this mass there was a hard swelling the size of an egg, with irregular edges. This moved with the pectoral muscles.

Computed tomography (fig. 2) showed a soft tissue mass, lying between the pectoral major and pectoral minor muscles, which had the same density as fat Hounsfield unit (HU)=135. Within the mass, there was an irregular ring form configuration with the density of calcium, approximately 4×2 cm in diameter.

The following working hypothesis was suggested: lipoma of the external thoracic wall containing a process with calcified shell, possibly an organized haematoma, or possibly a dermoid cyst. Because we had the impression that the hard mass increased in size during the following months, it was decided to operate (13 November 1992). A lipomatous mass measuring 10×6×3 cm was removed,

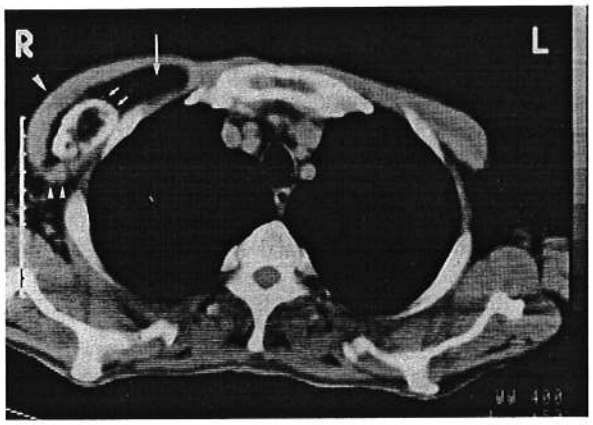

Fig. 2. – Computed tomographic cut through the mass (arrow), shows its location between the pectoral major muscle (one arrowhead) and the pectoral minor muscle (double arrowheads). The hypodensity of the mass reflects its lipomatous nature. Within the mass, an area of calcification can be depicted (double arrows).

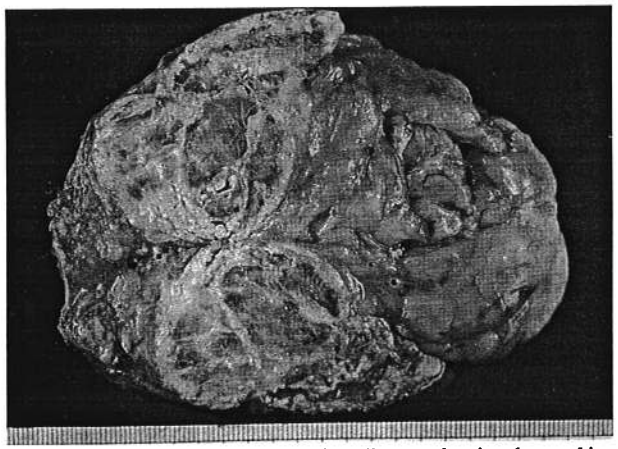

Fig. 3. – Macroscopic appearance of the lipoma, showing dense white areas of tissue necrosis with dystrophic calcifications.

containing a calcified collar, with somewhat necrotic aspect (fig. 3), measuring 6×4×2 cm.

Microscopic investigation showed mature fatty tissues in a clearly-defined capsule, within which there were patchy areas of necrosis. In the region of the necrosis, there was an increase in connective tissue and an infiltration of histiocytes and small lymphocytes and, at the same time, local areas of dystriphic calcification.

Discussion

Intrathoracic lipomata occur only rarely and they are mostly found by chance, because they only give rise to symptoms, *e.g.* dyspnoea as a result of their mass. This is even more true for extrathoracically situated lipomata. Extrathoracic tumours are mostly found in the anterior chest wall, and are generally masked by the pectoral muscles and, in women, by the breasts.

Thoracic lipomata were divided by HEUER [1] into three main groups:

1. Lipomata of which the main part of the mass was intrathoracic, in continuity with a collar-stud or egg-timer shape extending extrathoracically.
2. Lipomata with a mediastinal extension in the direction of the neck.
3. Lipomata which were completely intrathoracic, and had no connection whatsoever outside the bony rib cage.

The intrathoracic lipoma was first described in 1783, by FOTHERGILL [2]. Rokitansky and his contemporaries believed that the tumour was an embryonal tumour, which grew between the extrathoracic muscles, generally the pectorals, before the development of the bony rib cage [1]. During the embryonal development, the lipoma was said to be able to grow through a space between the ribs, thus, forming egg-timer or collar-stud tumours, in which the major part of the swelling developed intrathoracically [1, 3]. Extrathoracic lipomata present as smooth watch glass tumours, in a clearly-defined capsule, separated from the muscle tissue [4].

The diagnosis of congenital extrathoracic lipoma can be suspected on clinical grounds, after inspection and palpation. They are not usually recognizable on a regular chest X-ray. Computed tomography yields results from the [HU]-density, which are pathognomonic for fatty tissue [5]. Mammography, xerography and echography can give indications, but do not permit a certain diagnosis.

Malignant changes in a lipoma are exceedingly rare [4]. However, if rapid changes in size or consistency occur, liposarcoma must be considered. In addition, a heterogeneous density of the mass on computer tomography, especially if the attenuation coefficient is greater than 50 HU, should also alert the clinician [5].

Intra- and extrathoracic lipomata are sometimes extremely difficult to resect in children, if they are growing through the muscle tissues. This is the case when the lipoma contains myxoid tissue, and recurrence is not unknown, and rarely, sarcomatous change occurs [4, 6].

As far as the present patient is concerned, the discovery of this extrathoracic lipoma with central tissue necrosis

and dystrophic calcification was entirely coincidental. Because the lipoma had its own fleshy capsule and did not extend into the muscles, there was no question of malignant change. In the scheme of Rokitansky and Czerny this would match with an embryonal tumour, which had not found its way into the thoracic cavity [1].

It is not clear what was the cause of the partly calcified necrosis in the fatty tissue. There was absolutely no history of chest trauma. Considering the areas of necrotic tissue outside the calcified masses in the form of small patches, the necrosis may have been connected with insufficient blood supply to the lipoma at an advanced age [6]. The decision to have the patient operated on and the tumour resected was based on the development of the hard palpable mass between 1979 and 1985, and the clinical impression that the mass had increased in size in 1992.

References

1. Heuer G.J. – The thoracic lipomas. *Ann Surg* 1933; 98: 801–819.
2. Fothergill J. – Cited by Hare. *In*: Pathology, Clinical History and Diagnosis of Affections of the Mediastinum, London, 1883. London, Collected Works. 1783; p. 509.
3. Uhlig U. – Unklarer Mamma-Tumor. *Radiologe* 1989; 29: 257–258.
4. Enzinger EM, Weiss SW. – *In*: Soft Tissue Tumours. 2nd ed. St Louis, Washington D.C., Mosby Co. 1988; pp. 3–328.
5. Buxton RC, Tan CS, Khine NM, Cuasay NS, Shor MJ, Spigos DG. – Atypical transmural thoracic lipoma: CT diagnosis. *J Comput Assist Tomogr* 1988; 12: 196–198.
6. Faer MJ, Burnam RE, Beck CL. – Transmural thoracic lipoma: demonstration by computed tomography. *Am J Roentgenol* 1978; 130: 161–163.