Vascular Thoracic Fibrous Adipose Tissue (New Disease)

ABSTRACT

Introduction The primary tumors of the chest wall are rare, about 2% of all cancers, and 50% are derived from soft tissue neoplasms, benign or malignant that arise at the level of the chest wall representing 2% of all cancers; the study reports a recent observation of primitive thoracic neoplasia, and discusses the diagnosis and treatment of cancer.

Materials and Methods Paz 49 sex male has come to our attention in February 2016 at The Second Surgical Clinic of the University of Catania. The clinical history of the patient showed the presence in the dorsal thorax Ds, the formation presents a cranial caudal extension of about 190 mm, a latero-lateral diameter of about 120 mm and an antero-posterior diameter of about 50 mm displaces posteriorly and the trapezius the latissimus dorsi and contracted close relations of contiguity with paraspinal muscles. It presents heterogeneous signal in T1 and T2.

Results The specifications with the different methods of imaging the face of a patient with expansive lesion that presented palpable mass in rapid growth (2), has been that of the identification of the lesion, with a spatial evaluation, typing, directing toward a diagnostic orientation of probable kindness.

Discussion The computed tomography (CT) allows in most cases the differential diagnosis of a neoplasm of the chest wall and defines its characteristics, the origin (in the case of the wall intramuscular tumors by contiguity), the location, and the relationships with surrounding structures (Fig. 1). It also allows a more accurate staging. The choice of surgical strategy suffers first objective to be achieved: the radical or palliation.

Conclusion The described chest wall neoplasm is an example of how the pathologic classification is rapidly evolving thanks to new diagnostic techniques the therapeutic choices of benign primary lesions that generally occur as formations in sharp and regular margins, with a growth pattern of expansive and slow type. In the light of the latest findings in relation to the characteristics of important seat adipose tissue of adult stem cells, which are highly multidifferent, it is possible that if the cells are subjected to various types of stimuli can hypothesize and verify the activation to malignancy in time. The initiated research is that through an analysis of the lesion and on misuse formations mainly fat is it possible to get a review of the criteria in benign adipose tissue tumors.

KEYWORDS chest wall tumor treatment, vascular thoracic fibrous, cancer

INTRODUCTION

The incidence of the primary tumors of the chest wall are is rare, about 2% of all cancers, and 50% are derived from soft tissue neoplasms, benign or malignant, that arise at the level of the chest wall represent 2% of all tumors and may originate from any tissue components that make up such bone, cartilage, muscle, fibrous, vascular, nerve, fat and skin. Several factors can increase the risk of developing adipose tissue, including: disease di Madelung, syndrome di Bannayan-Riley-Ruvalcaba, syndrome di Cowden e la syndrome di Gardner, between the ages of 40 and 60. The adipose tissue is rare in children. Some diseases, including adipose painful, Madelung deformity, Cowden syndrome, and Gardner’s syndrome in the thoracic tumors that originate from adipose tissue. The cells that make up the benign tumors are considered cancerous because they multiply more than they should, forming a mass that can also assume considerable dimensions. Unlike those of cancer, however, these cells retain the characteristics of the tissue of origin and neither have a tendency to invade surrounding organs, nor to produce metastases in other parts of the spreading body through the blood or lymph vessels. The mass that is formed due to this excessive growth remains always well demarcated, often enclosed in a sort of capsule, well circumscribed and can occur in ultrasonography.
This notice of tumor in the dorsal thorax Ds, a swelling Catania, AUO Polyclinic. The clinical history of the patient 2016 at The Second Surgical Clinic of the University of Paz of 49 sex male has come to our attention in February Clinical features of the new disease

**MATERIAL AND METHODS**

**Clinical features of the new disease**

Paz of 49 sex male has come to our attention in February 2016 at The Second Surgical Clinic of the University of Catania, AUO Polyclinic. The clinical history of the patient notice of tumor in the dorsal thorax Ds, a swelling palpable, fixed, and asymptomatic despite its gradual increase in size. In the last 2 years, the chest swelling has gradually doubling in volume to achieve massive fairly substantial current size, accompanied by symptoms which modified the supine side compulsory, with a reduction in the Ds shoulder mobility and the ipsilateral arm, oppressive pain hemithorax Ds, increased patient blood. The patient pressure also reported exposure to therapies with ever-increasing frequencies that increase the ionic exchange, analysis of the chest swelling with diagnostic imaging was evaluated with. The chest X-ray study showed hypodensity charged to the soft tissues of the chest wall right mid chest. L’CT examination (Fig. 1) with three-dimensional reconstruction described the swelling palpable that had a diameter of 13 cm to 20 cm sagittal diameter. The study without contrast multiple signaled calcifications dissemination. The densitometry analyses of these calcifications were equal to mean 378, a coefficient corresponded to that of cortical bone. Also in the context of the swelling, they were observed image serpiginous like to be referred to venous anomalies. It signaled during contrast enhancement over no increase in computed tomography numbers for the presence of modest vasculisation. There was also a clear cleavage plane between swelling and trapezius muscle posteriorly and anteriorly with the serratus muscle and paraspinal. The MRI study aimed at assessing the massive formation of the posterior chest wall right performed in prone performing acquisitions in basal and dynamic phases being e.v administration of gadolinium. He showed the presence of a formation with an extension of caudal skull equal to about 190 mm, a latero-lateral diameter of approximately 120 mm and an antero-posterior diameter of approximately 50 mm, which displaces rearwardly the trapezius and the latissimus dorsi and contracted close relations of contiguous with paraspinal muscles. It presents inhomogeneous signal on T1 and T2 and with enhancement areas in the central portion after administration of gadolinium. The signal characteristics were not pathognomonic of cystic component disease or adipose, good cleavage plane with the trapezius and latissimus dorsi. The biohumoral analysis showed an increase in neutrophils, a decrease of lymphocytes, alteration glucose, and a decrease of electrolytes (sodium, chloride, and calcium potassium) with negative tumor markers (AC 125, AC 15-3, CA 19.9, CEA) increased alkaline phosphatase. And a decline of ½ degree of body temperature, the patient subsequently enacts preoperative chest physiotherapy, and then subjected to surgical treatment.

**RESULTS**

The different imaging modalities used (Eco TC RNM) for diagnosis in a patient with expansive lesion that presented palpable mass in rapid growth, have provided results that were those identification of the lesion, with a spatial evaluation, office, typing densitometry, resectable,
addressing the diagnostic orientation of probable benign and/or malignant poor, as to make it unnecessary for further typing preoperative mass. The tumor caused clinical symptoms whose symptoms depended on the location of the tumor, which, growing, compressing embraced, with the thrombosis of blood vessels, causing pain or symptoms of a very different nature. The benign tumor, which by definition maintains the characteristics of the tissue of origin, was developed both from adipose tissue but contained a vascular component, fibrous component, and in part was tenaciously adherent to the muscular component so as to form a whole. The secretory function of adipose tissue manifested itself through the increased production of certain substances, especially hormones, which altered the delicate balance in the body. (Alteration of glucose, neutrophil count, decreased body temperature). At this condition, it was associated with an increase in both blood pressure, secondary hypertension, which may also depend on different types of benign tumors and the increase of the alkaline phosphatase activation expression of cell lines. Then the risk of embolisms which can be induced by the adipose tissue from benign tumors which are detached in to small fragments ranging in block blood vessels, very rare condition, but it can also give a sign of itself in a less dramatic, through little specific disorders, such as fatigue or shortness of breath. In view of the described evaluations it arose, the indication for surgery for a benign tumor obviously become stronger and larger the mass itself, or substances that produces interfere with the essential functions of the body or alternatively the formations that over time may degenerate becoming malignant presenting with the indications for surgical treatment (Figs. 3 and 4) whose the mass resectable criteria were good. A resection of the lesion was performed that showed capsulated anteriorly, posteriorly and tenaciously adhering to the latissimus dorsi muscle, trapezius and paraspinal without any demarcation between the muscles and ground. The total weight was 1,300 kg. The histological analysis confirmed the benign nature of

\[ \text{Fig. 2 RNM thoracic tumor.} \]

\[ \text{Fig. 3 Removal.} \]

\[ \text{Fig. 4 Full thoracic mass.} \]

**DISCUSSION**

The classification of tumors of the chest wall provides a fundamental distinction between those primary and secondary tumors or metastatic tumor infiltration by contiguity from lung cancer or breast cancer\(^7,8\). In the
preliminary assessment of a patient, with the suspected presence of a tumor of the chest wall is important, in addition to a careful physical examination, careful history taking, you should focus on the existence of earlier diagnosis of cancer, family history of tumor diseases, the possible exposure to ionizing radiation and the presence of associated diseases. The X-ray (RX) of the chest, standard, or targeted to specific bone structures, is the preliminary instrumental test capable of identifying the presence of structural and morphological alterations of the bony and cartilaginous tissues or to further define the characteristics of a swelling clinically palpable. The comparison with previous X-rays can help to determine the age of onset of the lesion or to define the growth time. Computed tomography (CT) allows in most cases the differential diagnosis of a neoplasm of the chest wall and defines its characteristics, the origin (in the case of the wall intrusive tumors by contiguity)9–11, and the location and relationships with surrounding structures (Fig. 1). It also allows a more accurate staging, and provides information also on the lung parenchyma, the mediastinum structures, and lymph nodes. Magnetic Resonance Imaging (MRI) allows to better study the relationships of tumor of the chest wall with muscular structures, vascular and nerve, adding important information especially for soft tissue tumors. MRI is particularly indicated in the presence of lesions in close relationship with the spine that is the suspected source of central nervous structures or their involvement by contiguity. The histological diagnosis is still essential to plan any subsequent therapeutic strategy. The correct diagnostic process planning must take into account the origin of the lesion12–14, to its location and its size, respecting the criteria of minimum invasiveness possible. The percutaneous needle biopsy can be used both under exclusive control to view, for clinically significant injuries, both under ultrasound or CT guidance, in the case of smaller lesions or less accessible. The use of fine needles (Fine Needle Aspiration Biopsy-FNAB) is recommended in the case of small tumors in patients with a history of malignancy diagnosis: the paucity of the material and the cell isolation inside, typical characteristics of the sample cytology obtained with this technique, make it more suitable when it is necessary only to confirm or rule out metastatic nature of the lesion. Biopsy percutaneous Needle-CNB) allows the capture of a sample useful for histological examination and proves to be a more accurate technique especially in the case of cancer to bone or cartilage origin, allowing a histologic diagnosis in 90% of cases15–18. In the case of large lesions, with broad-based plant or racemose, hardly accessible, to the prevailing development in thoracic or associated with the signs of infiltration of the integuments is shown an incisional biopsy. When you consider it possible subsequent radical surgery, you should perform the skin incision at a distance from a possible tumor infiltration area but still in an area that will later be included in the en bloc resection; biopsies should be practiced away from future margins of resection. The surgical treatment of chest wall resections have an ancient tradition. Parham1 reported in 1899 a review of the first 48 cases of the literature (including Aimar, Paris 1778, Citizens, Milano 1820 Krönlein, Zurich 1883). The mortality rate in this period was approximately 30%19–21. These interventions defined heroic pose-specific problems linked directly to the anatomy and function of this structure. The choice of surgical strategy suffers first objective to be achieved: the radical or palliation. Resection with radical intent demolitions generally involve large that require adequate reconstructions. However, even the resection with palliative intent, although carried out with conservative attitudes, they may require reconstructive at times not trivial as not to compromise respiratory function or the structural integrity of the rib cage. Careful preoperative evaluation should therefore include, in addition to routine checks, the most suitable access plan, the extent of resection (identifying as far as possible at this stage the safety margins that we must respect and adjacent organs may be affected for resection en bloc) and the possibility of use of any limbs, thoracic or extra thoracic22–24. The surgical team required by this type of intervention is often multidisciplinary and sees the thoracic surgeons assisted by specialists plastic–reconstructive, orthopedic or neurosurgeons. Resection of benign tumors of the

Fig. 5  A. adipose tissue. B. Histology vascular fibrous.
chest wall is shown in the case of formations that are associated with pain, which jeopardize a normal respiratory function and/or motor or have reached considerable size (Fig 2). The incision can be practiced near the clinically noticeable injury, parallel to the course of the coasts where relevant to the cost-muscular plane, longitudinally if sternal relevance is found. Resection does not require, obviously, compliance with particular safety margins but in the case of tumors, broad-base is necessary to remove the corresponding wall portion. The breach of the wall may require more or less complex reconstructions, resecting the one hand we create a defect of the soft parts, which must be repaired in each case, and on the other a loss of stability that is related to the location and size. In general, if the defect exists for 150 cm, a stabilizing reconstruction is necessary. A turning point to the success of the surgical procedure was the appropriate use of the plastic materials and the specifications. Most of the chest wall resections are performed for tumors, only a few cases for malformations, pectus excavatum, pectus carinatum e pectus arcuatu. Surgical treatment of tumor described radical change in the approach methodological necessity even if it belongs to benign lesions because adipose tissue is home to the index stem cells for cellular activity assay of leptin secretory functions and adiponectine, vistatina the inhibition of thrombotic factors in assessing the increase ion exchange, the inflammatory markers are all parameters that allow us to express information about aggressiveness of the lesion and its possible cancer.

CONCLUSIONS

The described chest wall tumor is an example of how the pathological testing is rapidly evolving towards an integrated morphological and molecular classification.

REFERENCES