

Malignant pleural effusion of renal adenocarcinoma

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ABSTRACT

The malignant pleural effusion is a frequent complication of the cancer, is diagnosed by means of the finding cell neoplasticas in the pleural liquid or a cytology of positive pleura for malignant, can be present in 15 % of patients with diseases neoplasticas; the difficulty in breathing, cough or thoracic pain are the most frequent symptoms. The carcinoma of renal cells (CRC) or adenocarcinoma renal it represents approximately 2-3% of the neoplasias of the adult with an approximate incident of 5/100 000 persons, appears between 50 and 70 years, most of the times being characterized by the lack of clinical manifestations, since consequence of it the majority of the cases are diagnosed as advanced disease. The pleural metastasis is comparatively rarer than the pulmonary metastasis. We report the case of male patient with pleural malignant spillage of adenocarcinoma renal.

Keywords: Pleural malignant spillage, pleural metastasis, adenocarcinoma renal (Source: *DeCS-BIREME*).

INTRODUCTION

Almost all neoplasms are able to invade the pleura, pleural effusion secondary to neoplasia has been divided into malignant: when tumor cells are found in the pleural fluid and paramaligne when they are not found; has been classified as transudate and exudate, as a consequence of the imbalance between the formation of liquid and its removal in the cavity. It occurs in heart failure, pneumonia, malnutrition and hypoalbuminemia, pancreatitis, hepatic cirrhosis with ascites, drugs, pulmonary thromboembolism, trauma, tuberculosis or as an extension or progression of cancer⁽¹⁾.

There are six mechanisms responsible for pleural effusion: 1) Increased hydrostatic pressure. 2) Decreased oncotic pressure. 3) Decreased pressure in the pleural space. 4) Increased permeability of the microvascular circulation by inflammation. 5) Blockage of lymphatic drainage from the pleural space. 6) Movement of fluid from the peritoneal space into the pleural space^(2,3).

The neoplasias most frequently associated with malignant pleural effusion are lung cancer (50%), breast (20%), lymphomas and mesotheliomas; being less frequent ovarian and gastrointestinal tumors⁽⁴⁾.

Renal cell carcinoma (CRC) is the most common solid lesion in the kidney and accounts for approximately 2% of all malignant renal tumors. Predominating more men than women (1.5: 1), it presents between the 5° and 7°

decade of the life, being characterized most of the times by the lack of clinical manifestations, as a consequence of this most cases are diagnosed as advanced disease⁽⁵⁾.

The most common sites of metastasis include pulmonary parenchyma (50-60%), lymph nodes (40-66%), bone (30-40%), liver (41%), adrenal gland (11-17%) nervous system central (5%), subcutaneous cellular tissue, thyroid, malignant intraocular and intraorbital tumor (choroid) and paranasal sinuses^(6,7).

The most common symptoms are hypertension, cachexia, weight loss, pyrexia, amyloidosis, elevated erythrocyte sedimentation rate, hepatic dysfunction, anemia, hypercalcemia and polycythemia among others⁽⁸⁾.

CLINICAL CASE

An 80-year-old male patient comes to emergency department of the Hospital II Lima Norte complaining chest pain, a sensation of dyspnea, which was progressive, started two months ago with a significant worsening in the last five days associated with nausea, vomiting and hyporexia; with a history of hypertension, benign prostatic hyperplasia diagnosed 5 years ago, glaucoma and hypothyroidism. On physical examination: patient awake in poor general condition, slimmed down. Skin: pale and cold, diaphoresis. Subcutaneous cellular tissue: Decreased in quantity, lower limb edema ++ / +++, capillary filling > 2". Examination of skull: face and oral cavity without alterations. Neck: jugular engorgement, not goiter. Lymphatic system: adenopathy in the cervical region, approximately 1 cm. of diameter. non-painful. Thorax

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and lungs: vesicular movement passes in right hemitorax, abolished in 2/3 lower left hemithorax, tachypneic, spontaneously ventilating 82% oxygen saturation environmental. Cardiovascular: rhythmic heart sounds regular intensity, tachycardic. Abdomen: excavated, soft, depressible, non-painful, hydroaereous noises present, no visceromegalias found. Genitourinary: No pain to fist lumbar percussion. Rectal exam: Increased prostate volume and increased consistency. Blood pressure (BP) 150/90 mmHg, heart rate (HR) 127 bpm, respiratory rate (HR) 43 min, T ° 37.2 ° degrees Celsius. Electrocardiogram: sinus rhythm with low voltage.

Support is provided with oxygen device at 3 ltr. Complementary studies at admission include: Glucose: 112 mg / dl. , Creatinine: 0.81 mg / dL, Urea: 26 mg / dL, Prothrombin Time 12.4", INR: 1.20, Total Proteins: 3.40 g / dL, Albumin: 2.0 g / dL, Globulins: 3.50 g / dL 50 IU / l, Alkaline Phosphatase: 120 U / l, Total serum calcium: 9.40 mg / dL, PSA: 1.08, PCR: 4.60, AghBs: Non-reactive, BK sputum: Negative. Sedimentation rate: 40 mm / 1 hour; Hb: 9g / dL, Leukocytes: 17,460 mm / m³, Platelets: 152,000 mm / m³, VCM: 89.70, HCM: 31.20, VSG: 100 mm / hr., Segmented: 60%, Canes: 5%, Lymphocytes: 26%, Monocytes: 8%, Basophils: 0%. Arterial gas analysis: pH 7.42, PCO₂: 29.6, PO₂: 99 HCO₃: 18mmol / L. If chest XR is requested AP. (Figure N° 1).



Figure N° 1. Chest x-ray AP shows: Left massive pleural effusion.

Computed axial tomography of the chest, abdomen and pelvis is requested. (Figure N°2 and Figure N°3).

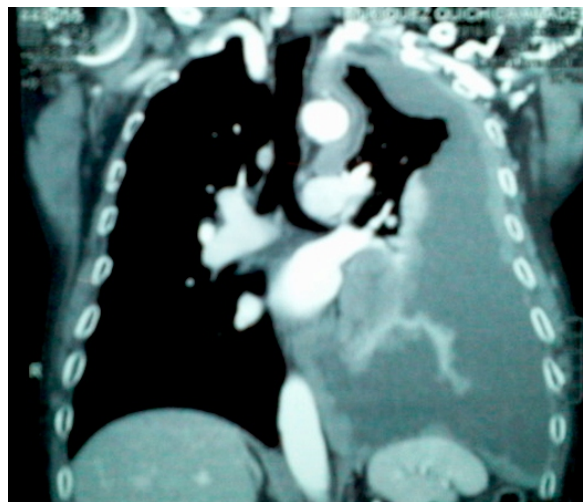


Figure N°2. Thorax CT, coronal section (mediastinum window) with contrast. Lobular concentric thickening of the left pleura in all its extension associated with pleural effusion loculated to superior predominance that conditions atelectasia lobar. Alteration of the pulmonary parenchymal architecture of the upper lobe that contacts the adjacent visceral pleura, to rule out NM. Hemitorax right without alterations. Cardiovascular components- mediastinal-pleural are normal, mediastinal or axillary lymph nodes are not visualized, trachea, carina and bronchi of caliber and habitual localization.



Figure N°3. TAC pelvic abdomino (coronal cut) with contrast, impresses: left kidney with poorly defined borders, 12 x 10 x 14 cm., Heterogeneous density, infiltration of perirenal fat with hemorrhage and necrosis; presence of retroperitoneal lymphadenopathy and renal vein thrombosis. Right kidney with normal morphology.

Diagnostic thoracic drainage was performed for determination of microbiological, biochemical and cytology as well as transparent pleural biopsy with needle (BPTCA), followed by the placement of pleural drainage tube; ANAS, ANCA, C-reactive protein (CRP), Angiotensin converting enzyme (ACE) were requested, and antibiotic treatment was instituted. In 36 hrs. 2200 ml was obtained of serohematico liquid. Auramines in sputum and Lowenstein culture were negative.

Sample of pleura macroscopy: Two fragments of light brown tissue are received, one of them of filamentous aspect that together they measure 1.5 x 0.2 cm, everything is included. The histological study reported: clear cell adenocarcinoma metastatic to pleura. (Figure N°4 and Figure N°5).

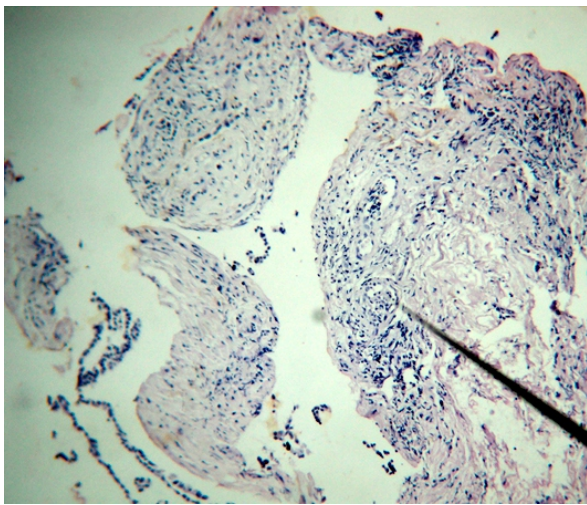


Figure N° 4

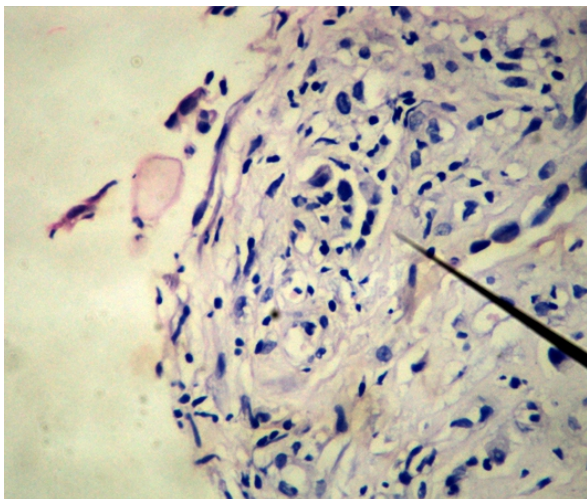


Figure N° 5

At 72 hours the patient had hypotension, fever and

disorientation; the subsequent evolution was very torpid occurring the death of the patient to the fourth day of hospital stay.

DISCUSSION

Lung or mediastinal metastases may be present in more than one third of patients with renal cell carcinoma (CRC) at the time of diagnosis, with pleural metastasis being rare⁽⁹⁾.

Pleural effusion occurs more frequently in patients with lung or pleural disease, as well as extrapulmonary diseases such as congestive heart failure, embolisms and cancer⁽¹⁰⁾.

Malignant pleural effusion is defined by the presence of malignant cells in the pleural fluid or by histological demonstration obtained by biopsy, thoracoscopy or thoracotomy. The presence of nodular pleural thickening has at 51% sensitivity and 94% specificity for the diagnosis of neoplasia as a cause of pleural effusion. This is a poor prognosis⁽¹¹⁾.

Thoracic radiography is usually the initial examination; in the PA projection 200 ml are necessary of liquid to show the spill and the lateral projection 50 cc. at the costophrenic angle⁽¹²⁾.

While thoracic ultrasonography is particularly useful in evaluating pleural lesions, corroborating the existence of a pleural effusion in patients with malignant neoplasm, as well as guiding thoracentesis⁽¹³⁾. The risk of a therapeutic thoracentesis is edema ex-vacuus, which has been estimated to reach a mortality of up to 20%, this occurs when the pleural pressure falls to less than -20 cm. of H₂O.

The pathogenic mechanism of renal metastasis is lymphatic and hematogenous dissemination of tumoral microemboli; these tumors originate from the proximal tubular cells, invade local structures and frequently extend into the renal vein. Nuclear magnetic resonance imaging (MRI), Doppler echography, and transesophageal ultrasonography are useful for evaluating the extension of the tumoral thrombus vena cava⁽¹⁴⁾.

The Heidelberg classification indicates the main types of RCC: clear cell (60 to 65%), papillary cancer (10 to 13%) and chromophobe (6 to 10%); sarcomatoid tumors with poor prognosis may be present in any subtype, with Bellini's collecting tubule carcinoma, multiple-cell carcinoma and spinal carcinoma being the least common⁽²⁾. There is also a group called unclassified renal cell carcinoma, representing 6% of these neoplasms⁽¹⁵⁾. Its major etiologies are as follows: tobacco, cystic disease, tuberous sclerosis, and Von Hippel-Lindau syndrome.

Much of the renal neoplasms are diagnosed by abdominal ultrasound or CT scan performed incidentally, the standard gold of the RCC is the helicoids CT where the primary tumor is evaluated, extrarenal extension, as well as providing information on venous involvement, lymphadenopathy, adrenal glands and liver; as well as the morphology and function of the contralateral kidney⁽¹⁶⁾.

Factors such as the age of the patient, site of the lesion as well as immunohistochemical markers such as IL-6, survivin, CD10, Ca9, P504S, among others have been proposed as indicators of poor survival specific cancer, in both tumor volume as well the degree of nuclear anaplasia provides more specific evidence on the long-term behavior of renal cancer^(17,18).

Radical nephrectomy including the affected kidney remains the only curative treatment in patients with localized RCC⁽¹⁹⁾.

Ethical and Legal Aspects: Regarding the confidentiality and publication of the data, the author of this article, declares following the protocols on the dissemination of data and reproduction of images.

Conflict of interest: The author denies a conflict of interest.

Financing: Self-financed.

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Peer review

Received: 07/10/2017

Accepted: 30/11/2017