

Metástasis pulmonar y pleural en cáncer de pene, una patología infrecuente.

Pulmonary and pleural metastasis in penile cancer, an uncommon pathology

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Abstract

Introduction: Carcinoma of the penis is a rare tumor in our environment, constituting less than 1% of deaths in men and it is defined as the proliferative disordered process of squamous epithelial cells of the penis.

Objective: The objective of the following manuscript is to present the case of a patient who developed cancer of the penis with metastasis to the lung.

Clinical case: An 85-year-old patient was admitted due to a 24-hour clinical picture consisting of hematuria associated with non-productive cough, low back pain, asthenia and adynamia. He had a history of squamous cell carcinoma of the penis, he was identified as a heavy smoker until two years ago and presented chronic exposure to wood smoke. On the physical examination, the patient evidenced a regular general state, respiratory sounds that suggested left hypoventilation, absence of penis due to his clinical history and outflow of hematuric urine through bladder catheter, ganglia in the inguinal region, edema in the lower limbs with formation of flictenas on the dorsal zone of the feet. Imaging studies confirmed the presence of mass in a pulmonary region together with pathological fractures

at the thoracic level, thus, palliative care was provided, and the patient was discharged from the hospital.

Conclusions: Penile cancer is a low prevalence worldwide pathology. Approximately 95% of these cancers are squamous cell carcinomas, which can easily spread locally through lymphatic or vascular channels; nonetheless, its metastatic disease development is rare and mainly affects organs such as the liver, bone, and brain. However, few cases of metastasis to the dorsal spine, heart, retroperitoneum, breast tissue, lung, and skin have been reported.

Keywords: Cancer of the penis; metastasis; lung; lymphatic squamous cell carcinoma.

Introduction.

Carcinoma of the penis is an infrequent tumor in our environment, constituting less than 1% of deaths in men (1, 2). According to a study conducted by the Universidad del Valle in 2004, in Colombia, this pathology has an incidence rate of 1.11-2 per 100,000 inhabitants and ranks worldwide as a country with low incidence of this disease; Similar findings were shown in a study in the city of Pasto between 2008 - 2012 where an incidence of 1.8% per 100,000 man-years was found (3).

This pathology generally is presented as a proliferative and disorderly process of the squamous epithelial cells of the penis. It is usually originated in the epithelium of the inner portion of the foreskin and glans. More than 95% of penile malignancies are squamous cell carcinomas (4).

Among the most relevant associated complications are metastasis, considering the biological point of view, its dissemination is carried out by an embolization mechanism and not by penetration, with initial extension through the lymphatic route to the inguinal nodes, after to the iliac chains and finally, distant metastasis is developed in less than 10% of cases (4). It should be noted that lung metastasis of primary origin in the penis are very rare in the population and even more taking into account the low metastatic level of this pathology after its surgical treatment. The treatment by partial or total penectomy is usually effective with few local recurrences. However, at the time of surgery, there may be micro-metastasis at the lymph node level that will subsequently influence the appearance of locoregional and distant recurrences (5, 6).

The objective of the following manuscript is to present the case of a patient who presented penile cancer with metastasis to lung.

Clinical Case.

An 85-year-old patient was admitted for a consisting 24-hour clinical chart of hematuria associated with non-productive cough, low back pain, asthenia and adynamia. He had a history of focally keratinizing squamous large cell carcinoma, ulcerated of usual moderately differentiated type, unifocal glans with invasion to corpus spongiosum, albuginea, caverns, penile urethra and vascular and perineural invasion, diagnosed two years ago so he required partial penectomy, he was identified as heavy smoker until two years ago and presented a chronic exposure to wood smoke.

At the admission physical examination his vital signs were blood pressure of 130/75 mmHg, heart rate 93 bpm, respiratory rate 20 rpm, temperature 36.5°, oxygen saturation 87 with inspired fraction of 21% oxygen. General regular condition, afebrile, hydrated, alert, without signs of respiratory distress, rhythmic heart sounds without murmurs, respiratory sounds suggestive of left hypoventilation, absence of penis due to clinical history and outflow of hematuria urine through bladder catheter, ganglia in the inguinal region, edema in lower limbs with formation of blisters on the dorsal face of the feet. The admission paraclinical tests showed slightly elevated C-reactive protein, the rest of the studies were within normal parameters (Table 1).

Tabla 1. Paraclinical

Laboratory	Result	Reference value
Pleural fluid volume	200 cc	5 a 15 ml
Color and appearance	Cloudy yellow	
Leukocytes	862*mm ³	
PMN	40%	Hasta 10%
MN	60%	Hasta 30%
Red blood count	127000*mm ³	
pH	7	
Density	1005	
Glucose	28.70 mg/dl	60% of plasma
Proteins	3.69 g/dl	1 a 2 g/dl
Lactate dehydrogenase.	267 U/L	Hasta 250 U/L
Time of prothrombin	17.80 seg	10-14 seg
INR	1.33	
Blood count: Leukocytes	9.479 uL	4-10 x 10 ³ /uL
Hemoglobin	13.3 g/dL	11 - 15 g/dL
Neutrophils	76.5 % (7.240 u/L)	50 - 70%
Lymphocytes	15.1 % (1.430 u/L)	20 - 40%
Platelets	243 x 10 ³ /uL	150 - 450 x 10 ³ /uL
BUN	12 mg/dL	5 - 23 mg/dL
Creatinine	0.56 mg/dL	0 - 1,17 mg/dL
Potassium	3.71 mEq/L	3.7- 5.5 mEq/L
Sodium	137.5 mEq/L	136 - 145 mEq/L
Highly Sensitive Reactive C Protein	8.36 mg/dL	0 - 0,5 mg/dL
Prostate- specific antigen	4.77 ng/mL	1,4 -4,4 ng/mL
PCR RT SARS CoV-2	Negative.	

Chest X-ray showed transparency with diffuse consolidated alveolar radio opacity in the middle and lower field of the left hemithorax, and right basal hilum with inflammatory appearance together with effacement (pleural effusion) in the left costophrenic angle; diffuse reticular interstitial infiltrates with chronic appearance, free right costophrenic breast, the left one was effaced. Diffuse osteo-degenerative changes (Figure 1)



▲ Figure 1. Chest-PA X-ray.

Given these findings, it was decided to rule out possible SARS-CoV-2 infection, antibiotic treatment was indicated given the first suspicion of community-acquired pneumonia and a computerized axial tomography was requested that reported mediastinal, cervical and axillary lymphadenopathies of apparent metastatic origin, bilateral pulmonary nodules of neoplastic appearance, signs associated with chronic interstitial lung diseases, bulky left pleural effusion, passive atelectasis in the left lower lobe and fracture of apparent pathological origin of the vertebral body of T5 (Figure 2).



▲ Figure 2. Chest computed tomography.

By report of CT of the chest and clinical history it is decided to suspend antibiotic treatment and request drainage and study of pleural fluid with evidence of mononuclear exudate, negative fluid culture, so it is considered pleural effusion secondary to metastatic process. A report of PCR RT SARS CoV-2 Negative is received from the National Institute of Health, so it is decided to discharge with palliative management given the poor short-term prognosis and clinical condition.

Discussion.

In underdeveloped countries of South America, Southeast Asia, and African the incidence of penile cancer is much higher compared to the incidence in developed countries (with a maximum of 10-30% of malignant diseases in men) (5, 7, 9). In Europe and North America its incidence is approximately 1.0 new cases per 100,000 inhabitants. In countries like Germany, 195 mortality cases with an average age of 70 years were recorded for 2018 (8). As for the risk factors associated with the presentation of this pathology, phimosis and chronic irritative processes are found in relation to inadequate hygiene (9). Additionally, it is common in regions with high

prevalence of human papillomavirus, which may explain or be related to the variation in incidence (10), which also depends on race and ethnicity.

The age of onset of this pathology is between the sixth and seventh decade of life (11), however, in this case it was presented at 85 years of age. The existence of the delay in diagnosis since the appearance of the lesion and the first diagnostic consultation is striking (9). When reviewing the patient's old medical history, approximately 10 months previously he began with pruritus and subsequently the presence of penile lesion. The most frequent reason for consultation is the penile lesion (78%), which can be papillary and exophytic of warty growth or a painless, flat, and ulcerated lesion, with erythema, induration, bleeding and secondary infection. The tumor can be seen in the glans (48-52%), foreskin (21%), glans and foreskin (9%) or in preputial sulcus (6-26%) (12).

Its confirmation is made by biopsy, the usual histopathological diagnosis is squamous cell carcinoma in its different forms, from superficial, ulcero-vegetative and infiltrating, constituting 95% of cases and the remaining 5% corresponds to papillary carcinoma (13).

The initial route of spread occurs through the lymphatic vessels of the foreskin to the nodes of the inguinal region initially superficial and subsequently deep, as the glans and urethra drain into the deep external inguinal nodes. The metastasis by the hematogenous route occur in less than 10% of patients, where it mainly affects organs such as the liver and bone (13- 15) and to a lesser extent organ such as the spinal cord, brain, retroperitoneum, skin and lung (16 - 22).

In general, when hematogenous dissemination occurs through the venous route, it generates peripheral lung lesions and is usually asymptomatic, although patients with lesions in the central parahilar location are due to a hematogenous spread through the bronchial arteries (23). It is important to note that the export of 0.1% of tumor cells to the peripheral circulation is required to generate metastasis (24).

The initial management is the complete resection of the primary tumor by penectomy in search of the total removal of the tumor, verifying through microscopy negative resection margins (13). Local recurrence (2-6%) is rare but may occur occasionally leading to the need for a second intervention. The metastatic process is developed initially in the inguinal nodes, then the iliac chains and finally the distant metastasis, for this reason when making the diagnosis of cancer and finding palpable inguinal adenopathies, a broad-

spectrum antibiotic scheme is necessary for six weeks before indicating any management or biopsy in the region (25), however, other studies propose percutaneous biopsy of adenopathies to confirm the presence of metastatic spread. In case of finding metastasis, it is indicated to perform bilateral inguinal lymphadenectomy (9), and subsequently follow up on patients due to in 17% of the cases, micrometastases may occur that finally leads to a torpid evolution of the pathology.

In the underdeveloped population it is difficult to carry out a complete, full, and adequate follow-up of the patients after surgical management given the low resources and the high rate of abandonment of the consultation, compared to the developed countries where the follow-up is carried out according to what the literature establishes, making it difficult to assess the evolution and establish a statistic on the rate of progression, this was what happened to the patient of this case.

Conclusions.

Penile cancer is a low prevalence worldwide pathology. Approximately 95% of these cancers are squamous cell carcinomas, which can easily spread locally through lymphatic or vascular channels; despite this, the probability of metastatic disease is rare, and mainly affects organs such as the liver, bone, and brain; however, few cases of metastasis to the dorsal spine, heart, retroperitoneum, breast, lung, and skin have been reported.

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