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CASE REPORT

Case report of coexistence of lung adenocarcinoma and tuberculosis

Rapport de cas de coexistence d'adénocarcinome pulmonaire et de la tuberculose

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ABSTRACT

Lung carcinoma is the leading cause of cancer-related death and represents one of the major public health problems worldwide. Tuberculosis is very important cause of morbidity and mortality despite good prevention, diagnosis and effective therapy, especially in the poor and developing countries. Tuberculosis and lung cancer rarely coincide together but have been proven by different studies to have a definitive link. Here presenting a case diagnosed with lung adenocarcinoma and tuberculosis together.

A 62 year old male presented to hospital with complaints of dry cough since 5months for 10 to 15 mins after taking food or drinking water. History of significant weight loss of around 17kgs over past 3 months past medical history of Cerebrovascular attack- ischemic stroke left fasciobrachial weakness with dysphagia due to Middle cerebral artery infarct, bilateral lacunar infarct and was on nasogastric tube for 45 days after stroke.

He is a known case of hypertension and diabetes mellitus on regular treatment. On examination patient was conscious and coherent with stable vitals.

Routine blood investigations done , chest x-ray showed bilateral infiltrates in lower zones and right upper zone.

KEYWORDS: Lung carcinoma; Tuberculosis; Adenocarcinoma.

RÉSUMÉ

Les carcinomes pulmonaires sont la principale cause de décès liés au cancer et représentent l'un des principaux problèmes de santé publique dans le monde. La tuberculose est une cause très importante de morbidité et de mortalité malgré une bonne prévention, un bon diagnostic et un traitement efficace, en particulier dans les pays pauvres et en développement. La tuberculose et le cancer du poumon coïncident rarement, mais différentes études ont prouvé qu'ils avaient un lien définitif. Présentant ici un cas diagnostiqué avec un adénocarcinome pulmonaire et une tuberculose ensemble.

Un homme de 62 ans s'est présenté à l'hôpital avec des plaintes de toux sèche depuis 5 mois pendant 10 à 15 minutes après avoir pris de la nourriture ou de l'eau potable. Antécédents de perte de poids significative d'environ 17 kg au cours des 3 derniers mois Antécédents médicaux d'attaque vasculaire cérébrale - accident vasculaire cérébral ischémique a laissé une faiblesse fasciobrachiale avec dysphagie due à un infarctus de l'artère cérébrale moyenne, un infarctus lacunaire bilatéral et était sous sonde nasogastrique pendant 45 jours après l'AVC.

Il s'agit d'un cas connu d'hypertension et de diabète sucré sous traitement régulier. À l'examen, le patient était conscient et cohérent avec des signes vitaux stables.

Des examens sanguins de routine effectués, la radiographie pulmonaire a montré des infiltrats bilatéraux dans les zones inférieures et la zone supérieure droite.

MOTS CLÉS: Carcinome bronchopulmonaire; Tuberculose; Adénocarcinome.

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INTRODUCTION

Tuberculosis (TB) and lung cancer are common diseases that cause substantial morbidity and mortality worldwide [3]. Coexistence of tuberculosis and lung cancers is not uncommon clinically [5,13]. The coexistence of Tuberculosis and lung cancer is estimated at 2% [4,5] and typically found in the upper lobes [15]. It has been proposed that pulmonary TB infection may exist as a chronic inflammatory process that is associated with an increased risk of lung cancer. This is because the pulmonary inflammation and fibrosis may induce genetic damage, which leads to carcinogenesis of the pulmonary parenchymal tissue [6,7,8,9]. It has been reported that some cases of lung cancer, usually adenocarcinoma in type, that arise from pulmonary scars were the result of healed pulmonary Tuberculosis infection [10,11,12]. A study conducted by the National Cancer Institute found that patients with pulmonary Tuberculosis had increased risk of lung cancer[14]and another estimated a twofold elevation in risk of lung cancer in men with Tuberculosis [3].

We present a case of 62-year male diagnosed as pulmonary tuberculosis in bronchoalveolar lavage specimen and pulmonary adenocarcinoma on lung biopsy and immunohistochemistry marker TTF 1 POSITIVE.

CASE REPORT

A 62 year old male presented to hospital with complaints of dry cough since 5months for 10 to 15 mins after taking food or drinking water. History of significant weight loss of around 17kgs over past 3 months past medical history of Cerebrovascular attack- ischemic stroke left fasciobrachial weakness with dysphagia due to Middle cerebral artery infarct, bilateral lacunar infarct and was on nasogastric tube for 45 days after stroke .He is a known case of hypertension and diabetes mellitus on regular treatment. On examination patient was conscious and coherent with stable vitals. Routine blood investigations done , chest x-ray showed bilateral infiltrates in lower zones and right upper zone. Chest HRCT showed patchy infiltrates and ground glassing in apical and posterior segments of bilateral upper lobes, superior segments of bilateral lower lobes with multiple miliary nodules scattered in both lungs with mediastinal lymphadenopathy with mild left pleural effusion and pott spine. Bronchoscopy was done and bronchoalveolar lavage was sent for tuberculosis analysis result came out to be positive for Mycobacterium Tuberculosis- Rifampicin sensitive. PET CT of whole body done showing Fluor deoxy glucose avid infiltrates in right upper lobe, basal segments of both lower lobes; multiple tiny nodules in both lungs; non fluorodeoxyglucose avid pleural and pericardial effusions ; multiple fluorodeoxyglucose avid sclerotic and lytic lesions involving multiple bones. Cryobiopsy of right upper lobe posterior segment done sent for histopathological examination which was suggestive of non- small cell carcinoma lung. Immunohistochemistry results consistent with pulmonary adenocarcinoma with marker TTF1 positive .Hence diagnosed as pulmonary Koch's with pulmonary adenocarcinoma with pott spine. Patient was started on Anti tubercular drugs, meanwhile his saturation was dropping and developed hypotension. Patient and his attendants were not co-operative for any further treatment and investigations and unfortunately, we lost the patient.

DISCUSSION

Lung cancers are among the neoplastic diseases with the worst prognosis.

Etiology of lung carcinoma

The etiology of the disease has been associated with smoking, occupational exposure to arsenates, nitrosamines, asbestos, and aromatics, and indoor exposures to radon, and to fumes from fires or cooking stoves [16,17,18,19].

Outdoor air pollutions also substantially contribute to the burden of lung cancers in urban dwellers.
Inflammation processes have long been linked to cancer development 20,21.

Among intrinsic lung diseases with inflammatory components, chronic obstructive pulmonary disease (COPD)22 , asthma23, and pulmonary fibrosis24 have been linked to lung cancers.

Tuberculosis with more than 80% of the cases primarily affecting the lungs entails a chronic inflammatory process.

This is because the pulmonary inflammation and fibrosis may induce genetic damage, which leads to carcinogenesis of the pulmonary parenchymal tissue [6,7,8,9].

Coexistence of tuberculosis and lung cancers is not uncommon clinically [5,13].

Nevertheless, a clear association of tuberculosis with lung cancers remains to be established.

In the tuberculosis field cancer can develop or in cancer depleted patients tuberculosis develops

secondary [32,33].

Association between lung cancer and tuberculosis opens a series of questions about the relationship between these two diseases.

Tuberculosis and cancer can be found in the lungs in the following relationship
Carcinoma occurs on the tuberculosis ground and reactivates the old focus of tuberculosis.

Carcinoma develops from the tuberculosis scars (scar carcinoma).
Carcinoma occurs by epithelium metaplasia of tuberculous cavities.

Both diseases are independent of each other and develop simultaneously or sequentially.
Metastatic carcinoma developing in an old Tubercular lesion.
Secondary infection of cancer with Tuberculosis [32-34].

The three most common forms most common forms are: cavern carcinoma, carcinoma of the drainage bronchus and peripheral lung scar cancer [32,33].

The changing incidence shows a trend of lung cancer shifting from developed to less developed countries [25,26], where tuberculosis poses a major health risk because of poverty, high population density, inadequate living environment, and less accessibility to health care. Patients with cancer are vulnerable to develop active Tuberculosis because of immunosuppression due to the use of intensive treatment modalities, such as aggressive chemotherapy, radiotherapy or to malnutrition[31].It has been reported that some cases of lung cancer, usually adenocarcinoma in type, that arise from pulmonary scars were the result of healed pulmonary Tuberculosis infection [10-12]. Patients with pulmonary adenocarcinoma who had scar cancer or had old Tubercular lesions had a higher probability of having EGFR mutations, especially exon 19 deletions.

Patients with lung cancer whose tumors exhibited EGFR-activating mutations had approximately 75% response rate when treated with EGFR-tyrosine kinase inhibitors (TKIs), whereas those patients without EGFR-activating mutations responded to EGFR-TKI poorly [28,29,30]. Diagnosis of concurrent Tuberculosis and lung cancer is important, but may be difficult. Tuberculosis lesions can mask lung cancers, delaying the diagnosis [5]. Patients who initially present with active Tuberculosis and lung cancer have lower survival rates than those having lung cancer without Tuberculosis [10]. Surgical resection for early -stage lung cancer with anti-Tuberculosis therapy is a potential treatment, however, there are currently no established guidelines [4,5]. One suggestion is that newly diagnosed Tuberculosis cases be followed up periodically with chest X-ray, bronchoscopy, and sputum cytology to enable early diagnose of lung cancer [5]. Some authors point out that increasing incidence of lung diseases is associated with increased incidence of lung cancer and therefore there should be oncological watchfulness in follow-up of patients with lung diseases or tuberculosis [35,36,37]. Although rarely occurring together, Tuberculosis and adenocarcinoma have an established connection. Diagnosis of simultaneous occurrence is difficult, given that one can mask the other, however, recognition of the diseases is important and can impact outcomes and patient treatment options. Even if tuberculosis is associated with lung cancers, more questions could be raised.

Does tuberculosis affect some types of lung cancer but not others?

Clinically, squamous cell carcinoma (SCC) was found in more than 50% of cases with coexistence of tuberculosis and lung cancers [5]. Squamous Cell Carcinoma of lung was also found in mice subjected to chronic infection of mycobacterial tuberculosis [27]. A recent meta-analysis of epidemiological data, however, revealed the association was only significant with adenocarcinoma but not Squamous Cell Carcinoma [2].

CONFLIT OF INTEREST
Non.

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