Original Research Paper

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General Medicine

A RARE CASE OF TUBERCULOSIS WITH SQUAMOUS CELL CARCINOMA OF RIGHT UPPER LOBE OF LUNG WITH LEFT HEMIPLEGIA

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ABSTRACT Lung carcinoma (LC) is the leading cause of cancer-related death and represents one of the major public health problems worldwide. Long term TB process, especially if it takes up larger portions of the lungs, leads to metaplasia of the epithelium of bronchi and alveoli. Lung cancer and Tuberculosis are independent of each other and develop simultaneously or sequentially. We report here a case of 64 years male patient presenting with both pulmonary Tuberculosis and Squamous cell carcinoma of lung with ?tubercular abscess / ?metastasis in brain. Patient has expired with fatal illness. High index of suspiciousness of lung carcinoma is required if patient is presenting with a long duration of Pulmonary Tuberculosis as management protocols are different for pulmonary tuberculosis and carcinoma of lung.

KEYWORDS : Lung carcinoma, Tuberculosis, Metastasis.

INTRODUCTION:

Lung carcinoma (LC) is the leading cause of cancer-related death and represents one of the major public health problems worldwide. Malignant tumors are characterized by an enormous proliferation of the cells with the tendencies for destruction and capture of normal tissue anarchically with the formation of metastases. Long term TB process, especially if it takes up larger portions of the lungs, leads to metaplasia of the epithelium of bronchi and alveoli.Such metaplasia can be considered as a precancerous condition[1].Carcinogens concentrate preferentially in hyperactive areas to induce neoplastic changes[2].

Carcinoma occurs on the tuberculosis ground and reactivates the old focus of tuberculosis. Carcinoma develops from the tuberculosis scars (scar carcinoma) or Carcinoma occurs from epithelial metaplasia of tuberculous cavities.Both diseases are independent of each other and develop simultaneously or sequentially.Chronic inflammation due to TB is thought to be responsible for the genesis of cancer. Co-existence of cancer and TB may cause a delay in the diagnosis[3].

CASE REPORT:

A 64year old male patient,suffering from cough with mucopurulent expectoration and decreased appetite with significant weight loss since 3 months was started on ATT 15 days back after sputum AFB showed positivity in a primary health care centre. He has presented now to our institutionwith altered sensorium and progressive weakness of left upper limb and lower limb from 4 days,without any history of seizures, loss of consciousness, headache , vomiting and sensory or cranial nerve involvement. Patient has stopped ATT 5 days before admission. Known diabetic since 1 year and hypertensive since 10 yearsand is a chronic smoker, tobacco chewer and alcoholic from the age of 16 years.

On physical examination patientis drowsy with stable vitals. Respiratory system examination has findings suggestive of right upper lobe fibro consolidation and Central nervous system examination has shown increased tone in all limbs with intact deep tendon reflexes and left plantar extensor.Cardiovascular system and Gastrointestinal system are normal . A provisional diagnose of Tuberculous fibroconsolidation of Rt upper lobe of lung with CVA presenting as Left classical hemiplegia secondary to TB vasculitis.

Laboratory findings have shown Hb 9.5g%, TC 8300 cells/uL, platelets 2,51,000 cells/uL , DC $N_{70}L_{15}$,GRBS-245mg/dl , negative VCTC and normal RFT, LFT, Serum electrolytes and ECG . A raised ESR of 130mm in the first hour and sputum AFB positive has been reported.

Xray chest shows a patchy consolidation in Right upper and middle lobes suggesting tuberculosis

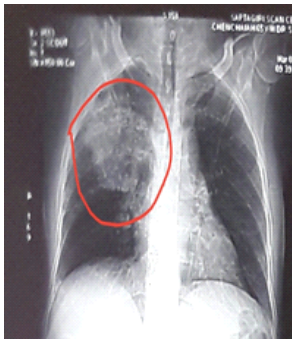

FIG:1

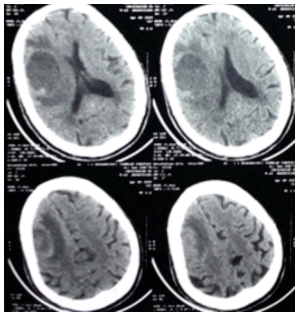

FIG:2

FIG.1: CHEST X RAY SHOWING A PATCHY CONSOLIDATION OF RIGHT UPPER AND MIDDLE LOBE.**FIG:2:** CT BRAIN SHOWING THICK WALLED HYPODENSE LESION WITH PERIPHERALLY LOCATED HYPERDENSE IN RIGHT FRONTOPARIETAL LOBE WITH ADJACENT PERILESIONAL EDEMA

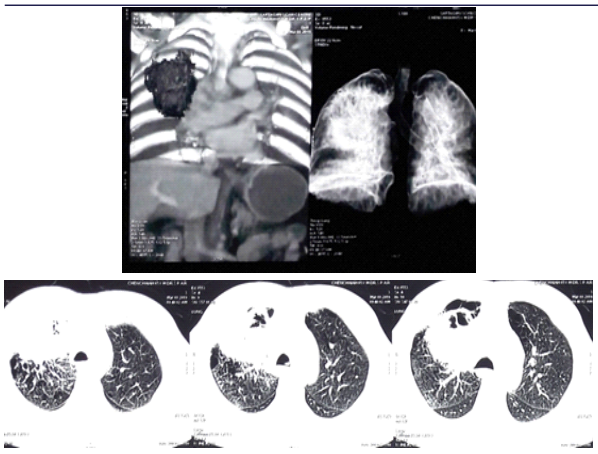

FIG:3: CT PLAIN AND CONTRAST OF CHEST SHOWING HETEROGENOUSLY ENHANCING LESION IN THE ANTERIOR SEGMENT OF RIGHT UPPER AND MIDDLE LOBE WITH FEW ENLARGED RIGHT PARATRACHEAL /PRE/SUBCARINAL LYMPH NODES.

CT Brain has shown a well-defined cortical based thick walled hypodense lesion with peripherally located hyperdense component measuring 55x 44 mm in right frontoparietal lobe with adjacent perilesional edema causing effacement of right lateral ventricle with minimal midline shift to left side suggesting neoplastic lesion/? Glioma.

Patient has been started with ATT, antibiotics, anti edemal measures, anti epileptics, Insulin and other supportive measures.

On further evaluation MRI SPECTROSCOPY shows a moderate sized oval shaped lesion with thick irregular borders, showing internal fluid levels at right frontoparietal lobe with perilesional edema with mild mass effect . MR Spectroscopy shows a mild lipid lactate peak elevation, suggestive of necrotic metastasis or a infective abscess likely of tuberculosis and less likely of pyogenic.

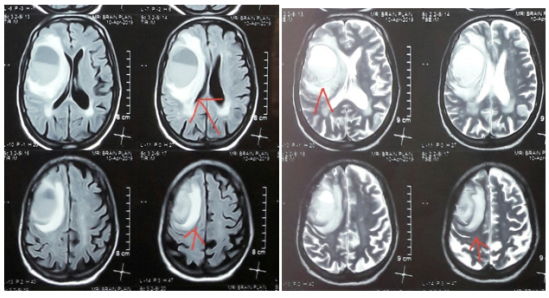

Fig 4: MRI BRAIN SHOWING MODERATE SIZE NECROTIC LESION IN RIGHT FRONTAL LOBE WITH MASS EFFECT.DDX: NECROTIC METASTASIS// INFECTIVE ABSCESS

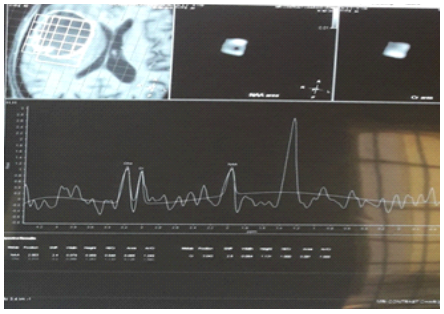

FIG:5: MRI SPECTROSCOPY SHOWING LARGE OVAL SHAPED LESION WITH IRREGULAR BORDERS WITH INTERNAL FLUID LEVELS WITH MILD LIPID AND LACTATE PEAKS ELEVATIONS.

CSF analysis shows elevated cell count with 100% lymphocytes and raisein Glucose(100mg/dl) levels . CSF protein (40mg /dl) and ADA (9.4IU/dl) are not elevated. CSF is negative for AFB and CBNAAT.

CTchest plain and contrast shows a heterogenous thick walled lesion in the right upper and middle lobe with internal septations and non enhancing cystic component in dependent position medially extending upto mediastinum with adjacent fibrosis in right upper and middle lobe likely infectious etiology with few enlarged right paratracheal and sub carinallymphnodes.

A Ultrasound guided FNAC of chest lesion is done and the smear shows a loosely cohesive sheets and discretely scattered neoplastic squamous epithelial cells with moderate nuclear pleomorphism, hyperchromatic nuclei with irregular nuclear membrane, prominent nucleoli, few binucleated cells and presence of mitotic figures. The background shows haemorrhage and plenty of nucleated squamous and keratin suggestive of " SQUAMOUS CELL CARCINOMA OF RIGHT UPPER LOBE".

During the course of hospital, there is no improvement in patient's GCS andpoor prognosis is explained to attendents. Further referral to Oncologist and surgical excision of right frontoparietal lobe lesion in thebrain has been adviced but patient's relatives are not willing for further consultations and surgery. They left against medical advice and patient expiredafter two days of discharge in his residence.

DISCUSSION:

Lung cancer is a specific epidemiological successor of pulmonary tuberculosis and that lung cancer develops in scars caused by TB. Coexistent of tuberculosis and lung cancer is fairly rare. When cancer develops against a background of active TB, common symptoms are worsening of general status(fever, signs of intoxification ,shortness of breath and sputum with touch of blood occurs[5] .

One hypothesis would be inflammation associated with infection can contribute to carcinogenesis. Reactive oxygen species or nitrogen species produced by activated neutrophils can bind to the DNA, inducing genetic damage and neoplastic transformation. In addition during tissue repair there is a increased cell proliferation and angiogenesis and the epithelium is more prone for metaplasia[4]. Despite the cumulative effects of tobacco as a carcinogen, the relationship between pulmonary tuberculosis and lung cancer persists even after control of smoking.

Diagnosis of lung cancer in patients with tuberculosis or with residual effects of tuberculosis possesses some peculiarities. These depend on variety of clinical symptoms, clinical course, and site of cancer. In case of ineffective specific treatment of tuberculosis, existence of lung cancer should be presumed[5]. Proper clinical examination and investigative workup is needed to reach the correct diagnosis.Sputum CBNAAT and AFB are gold standard for diagnosing of pulmonary tuberculosis[6] and.Bronchoscopy is indicated in case of tuberculosis in whom sputum is non-productive or smear examination is negative[7,8]. As a whole Bronchoscopy is important test for diagnosis of both pulmonary tuberculosis as well as lung cancer[9]

According to studies, delay in diagnosis of lung cancer was significantly high in patients who had received anti-tubercular treatment for current symptoms compared with those who did not receive anti-tubercular treatment[5]. This indicates that lung cancer is often misdiagnosed as pulmonary tuberculosis, and these patients are presumptively given ATT, hence causing significant delay in diagnosing cancer[6].

In the present case, a relatively long clinical history and symptoms of CVA with hemiparesis made us to search for a lesion in brain. Though MR Spectroscopy is suggestive of tubercular brain abscess, neither confirmation could be made as metastasis nor could be excluded as there is no surgical intervention done.

CONCLUSION:

Patients who initially present with active TB and lung cancer have a lower survival rates than those having lung cancer without TB. Diagnosis of simultaneous occurrence is difficult given that one can mask the other, however recognition of disease is important and can impact outcomes and patient treatment options[10].

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