Empyema Necessitatis Complicated To Paravertebral Abscess – A Rare Case Of Primary Multidrug Resistance Tuberculosis.

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Abstracts: Primary MDR tuberculosis still very rare 3% approx. in India , here we describe the case of 26 year old male having right sided loculated tuberculous empyema,that complicated to empyema nessacitatis and later spread to paraverteveral region, spleen , and omental lymph node proved to be resistance to rifampicin and isoniazid. [Agrawal A et al NJIRM 2012; 3(2) : 189-191]

Key words: MDR Tuberculosis, Empyema Nessacitatis.

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Introduction: Empyema necessacitatis is a collection of inflammatory tissue that usually extends directly from the pleural cavity in to the thoracic chest wall forming a mass in the extrapleural soft tissue, following anatomic boundaries. Gullan de Baillon first described it in 1640 when it developed after rupture of syphilitic aneurysm .[1] Here in we report a case of a primary drug resistant tuberculous empyema nessacitance. Drug resistance develops as a result of spontaneous mutation of bacilli. Spontaneous mutation with rifampicin and isoniazid occur approximately 1 in 10^6 and in 10^8 bacilli respectively, thus the chance of spontaneous resistance to both the drug is 1 in 10^{14} bacilli [2], which is extremely rare. Hence multidrug resistance tuberculosis defined as bacilli resistant to both rifampicin and isoniazid with or without other drugs.Primary MDR TB, aprox. 3% in India[3]develops in patients without previous history of antitubercular drugs.

Case Report: A 26 year old male was admitted to hospital with chief complaints of low grade fever, evening rise in nature, right anterior chest wall swelling with pain on coughing, loss of appetite, weight loss in last 6 months, and back pain for last one month. He was on cat 1DOTS for last 3 months for right sided loculated tuberculous effusion.

General examination revealed thin build, raised temperature 99.6*f, mild pallor, palpable right axillary's lymph node. Examination of respiratory system display only tenderness over RT anterior chest wall with swelling 6x 7 cm fluctuating, cold in nature. Slight A/E decrease over right hemi thorax in lower areas. There was another swelling 11x6 cm tender, fluctuating, and cold in nature at the level of D11 to L3 area in spinal region. Other systems were within normal limit.

Investigations revealed Hb 10.2 g%, TLC 5000, ESR 70 mm.1st hour, blood glucose 108 mg/dl (post prandial). Sputum was negative for acid fast bacilli by ZN method. Serology for HIV antibodies was negative by enzyme linked immunosorbant assay.

Fig 1. Skiagram of chest in P.A. view showing homogenous opacity over right hemithorax with obliteration of right *costophrenic angle.

Skiagram chest in PA view showed homogenous opacity in the right lower zone with obliteration of costophrenic angle and medistinal shift towards left side. Contrast enhanced tomography confirm the collection of fluid in rt sided mid lower thoracic multilocular with smooth pleural thickening with right lower anterior focal rib destruction.

MRI dorsolumbar spine axial & saggital plane using spin echo T1& T2 W shows right paravertiberal

abscess at D8 to D11 level and left posterior paravrtebral abscess and edema at D11to L4 level.

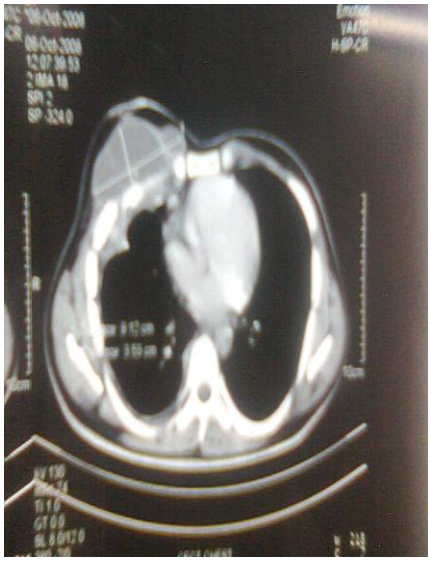

Fig 2. CECT Chest showing right anterior lower thoracic rib destruction with related external abscess like soft tissue swelling and exudative multilocular pleural effusion.

Fig 3. 18 F – FDG PET –CT Whole body scan shows active diseases involving Para spinal region between D11-L4 vertebrae , right pleura , right 4th rib & sub diaphragmatic surface of spleen.

Spread of infection in the body confirm by 18 F-FDG-PET-CT whole body scan which showed active diseases involving Para spinal region between D11to L4 vertebra , right pleura , right 4th rib & sub diaphragmatic surface of spleen with omental lymph node. Pulmonary function report showed moderate restriction. Surgical curettage of right anterior chest wall done and aspirated pus from chest wall and back swelling send for direct smear as well as culture & sensitivity for AFB and Gram staining. Direct smear shows acid fast bacilli. Culture & sensitivity showed resistance to rifampicin and isoniazid (R,H,), He was put on second line drugs ,Kanamycine o .75g, Ethionamide 750 mg in divided doses,cycloserine 750 mg., levofloxacin 750 mg. ,Ethambutol 1000mg., Pyrazinamide 1500mg, Pyridoxine100 mg.

After starting of therapy patient develops gastritis and vomiting that resolve gradually after medication patient symptomatically improved fever subside ,weight increased , appetite increase decrease in back pain as well as curettage site get healed.

Discussion: Empyema may be of traumatic or non traumatic origin. Non traumatic empyema's are more commonly encountered and usually arise as a result of direct extension of infection from an adjacent site; pneumonias are the commonest cause accounting for 60% of cases [4] . Other causes can be tuberculosis, lung abscess, contrary to this empyema necessitates is an extremely unusual complication of empyema and commonaly due to rupture of sub pleural tuberculous caseous foci in 73% of empyema necessitates , rarely may be due to malignancy, pyogenic lung abscess, blastomycosis, and actinomycosis. Other site of empyema extension include vertebral column ,paravertevral soft tissue, reteroperitonium, bronchus mediastinum,breast, diaphragm and rarely esophagus ,flank groin and pericardium, its overall mortality is 66% [5].

In 1940 Sindel et al.[6] reviewed 115 cases of empyema necessitates 84 of them were caused by tuberculosis and 31 by pyogenic infection mainly streptococcus pneumonia . In 1941 Hochberg[7] reported four cases of empyema nessacitatis among 300 cases of acute empyema incidence 1.3% . Freeman et al.[8] has collected 26 cases published between the year of 1966-2004 and it was apparent that case by tuberculosis 50% .

Radiography shows a soft tissue mass in the chest wall with bony destruction, computer tomography shows thick walled encapsulated pleural collection associated with an extra pleural collection in the

chest wall highly suggestive of empyem necessitates. Magnetic resonance imaging dorso lumber spine shows extension of empyema towards paravertiveral region extended from D8 to L3 level. 18 F- FDG PET CT showed further spread of infective foci in abdomen, sub diaphragmatic surface of spleen and omental lymph node which is very rare.
To the current authors knowledge this is the first case reported of primary multidrug resistance empyema necessitates extend to paraverteveral region and abdominal cavity.

Conclusion: Although primary drug resistant MDR tuberculosis is very rare ,but ignorance may complicate the diseases pattern and proper treatment according to sensitivity can cure the diseases.and also prevent the further spread of MDR tuberculosis. In present scenario if possible in affordable subject send the culture and sensitivity for mycobacterium tuberculosis in initial phase of starting treatment .

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