Unusual locations of tuberculosis: Three cases report
Houda Gharsalli, Saloua Azzabi, Mohamed Ali Baccar, Jamel ElGoul, Besma Ourari-Dhahri, Jihéne Ben Ammar, Leila El Gharbi, Hichem Aouina, Hend Bouacha. Pulmonary Diseases Department, Charles Nicolle Hospital, Tunis, Tunisia

Introduction: Tuberculosis (TB) can involve any organ but unusual location concerns specially immunodeficient patients. We report three unusual TB locations in immunocompetent patients.

Case report: The first patient is an immunocompetent woman admitted for pulmonary nodular lesions, pleural effusion and bilateral ovarian cysts. The elevated CA125 level suggested ovarian metastatic carcinoma. Pleural biopsy confirmed TB and presumed ovarian TB. Outcomes were favorable with antituberculosis therapy (ATT) with disappearance of ovarian cysts. The second case interested an immunocompetent woman who presented simultaneous occurrence of multifocal cutaneous TB with pseudotumoral pulmonary TB. The cutaneous TB was revealed by squamous plaques and erythema in face, abdomen and breast. The diagnosis was confirmed by biopsy of the skin. Favorable outcome was observed with ATT. The third case is about an immunocompetent woman who presented decrease in visual acuity. The lesions observed by fundoscopy suggested TB chorioretinitis. Tuberculin skin test was positive. The diagnosis was confirmed by fluorescein angiography. After starting tuberculosis treatment the ocular symptoms regressed.

Rare localization of extra pulmonary tuberculosis
Jihen Ben Amar, Besma Ourari, Leila El Gharbi, Saloua Azzabi, Mohamed Ali Baccar, Hichem Aouina, Hend Bouacha. Pulmonary Department, Charles Nicolle Hospital, Tunis, Tunisia

Tuberculosis (TB) can involve any organ system in the body by way of hematogenous or lymphatic dissemination or contiguity. While pulmonary tuberculosis is the most common presentation, extrapulmonary tuberculosis (EPTB) is also an important clinical problem.

The aim of the present study is to describe clinical manifestations and the outcome of patients with EPTB.

Materials and methods: We report the cases of 30 patients (17 men and 13 women) with a mean age 44 years (17-80 years) hospitalized for EPTB from January 2000 to January 2011.

Results: Seven patients (23%) had fever, loss of weight, anorexia ant sweating; pain in affected site was noted in 6 cases (20%). Urinary (16%), female genital (16%) and splenic tuberculosis (16%) were the most common site of involvement followed by parietal abscess (13.5%), abdominal (13.5%) and laryngeal tuberculosis (6%). The other localizations, spinal, skin, meningitis, haematopoietic, hepatic, tongue and thyroid gland were noted in only in one case (3%). Miliary tuberculosis was found in 3 cases (10%). Pulmonary tuberculosis was associated in 53%.

Tuberculosis was microbiologically proven in only 33% of cases. The diagnostic was confirmed by a tissue samples in 12 patients (40%).

Mean course of standard anti-TB therapy (isoniazid, rifampin, pyrazinamide, streptomycin or ethambutol) was 8.5 months, cure was noted in 83,% and lost to follow-up in 17%.

Conclusion: High index of clinical suspicion, the use of invasive diagnostic methods for the confirmation of the diagnosis, early institution of specific antituberculous treatment are the key to the successful management of EPTB.
almost doubled from 4.9% to 8.5%, mostly due to co-morbidity with HIV. Bone and joints TB increased by about half from 20.3% to 30.8%, and among this group especially TB spondylitis with neurological disorders, the most debilitating form of the disease. The proportion of UGTB decreased from 42.9% to 33.9% with change in gender distribution from male: female of 1:2 in 1999 to 1:1 in 2008. In contrary, there was a decrease of peripheral lymph nodes TB from 16.7% to 11.0%, but TB in the skin and soft tissues still frequent. At the end of the last century cutaneous TB in Siberia accounted for 7.4% and in 2008 (in 2009 listed in “others”) for 4.4% of the patients with EPTB. Accordingly, in 1999 other form of TB accounted for 7.8% and in 2009 6.4%. Conclusion: In Siberia there is still a severe epidemic situation now. Low living standard, poverty, as well as poor knowledge and ignorance of EPTB both by medical service and population lead to late diagnosis of EPTB with complicated multi-organ forms.}

Material and methods: 167 patients with nephrotuberculosis were enrolled in study. History cases were detailed analyzed to determine clinical features, previous therapy and a level of kidney destruction in time of diagnosis tuberculosis. Results: 11 (6.6%) had acute onset like pyonephrosis, and were operated without previous therapy. Diagnosis was verified after surgery. Other 156 had chronic NTB with clinical features specific for chronic pyelonephritis and cystitis. 39 (27.6%) were revealed in small-destructive stage of nephrotuberculosis - papillitis. 47 patients among them (79.7%) were treated with optimal antimicrobials, that means drugs don’t influence on Mycobacterium tuberculosis (rifampicin, genamycin, amoxicillin, cephalosporins). Average time of correct diagnosis in this group was 4.7 months. 97 patients in cohort (62.2%) had cavernous NTB. The main reason was prescription to 75.3% amycacin, rifampicin and fluquinolones that disguised, changed clinical features of NTB and resulted in long time of diagnostic – on average 27.4 months. Conclusion: Nephrotuberculosis often mimics at chronic pyelonephritis and cystitis. Using amycacin, rifampicin and fluquinolones for therapy these diseases before excluding of NTB resulted in late diagnoses cavernous forms of NTB. Probably this statement is actual for region with severe epidemic situation, like Siberia.
Aims: To study: 1. Mycobacterial smear and culture positivity rate in histologically proven tuberculous lymph nodes. 2. Cultural characteristics of mycobacteria. 3. Prevalence of multidrug resistant (MDR) and extensively drug resistant (XDR) tuberculosis.

Methods: Lymph node smear for acid-fast bacilli (AFB) was done by Zielh-Neelsen method, and culture was done by radiometric method (MB/Bact 240 system). Sensitivity tests for antitubercular drugs were performed by conventional method on LJ medium.

Results: During Jan. 2005 to Sept. 2010, mycobacteria were grown on 74 cultures. 72 cultures (97.3%) were positive for Mycobacterium tuberculosis, and only 2 (2.7%) were positive for M. Kansasi. In 89 histopathologically proven patients, cultures of TBLN, 56 (62.9%) were positive and AFB smear positive in 21 (23.6%) patients. In 18 culture positive patients, histopathology of lymph nodes was not available. MDR TB was present in 12 (16.2%) cultures. XDR TB was not detected.

Conclusions: 1. Mycobacterium tuberculosis is the common organism in TBLN. 2. In histopathologically proven patients with TBLN, mycobacterial smear and culture positivity rates were 23.6% and 62.9% respectively. 3. MDR TB was present in 16.2% of patients.

References:

P2698
A prospective observational study to determine the adequacy of 6 months antitubercular therapy in tuberculous mediastinal lymphadenopathy

Akanksha Jha, Nirmal Jain, Rohan Aurangabadwalla, Nitin Jain, Mehul Thakkar, Nalin Joshi. Chest and Tuberculosis, Hospital for Chest and Tuberculosis, SMS Medical College, Jaipur, Rajasthan, India

Background: The present study was designed to evaluate adequacy of 6months antitubercular therapy (ATT), Revised National Tuberculosis Control Programme (RNTCP) Cat I with isoniazid (H), rifampicin (R), pyrazinamide (Z), ethambutol (E) followed by HR thrice weekly in patients with tuberculous mediastinal lymphadenopathy (TML).

Material & methods: 75 cases of significant mediastinal lymphadenopathy on computed enhanced CT chest (CECT Chest) and diagnosis of Tuberculosis on bronchial needle aspiration were included. All patients were given 6months ATT [2(HRZE)3/4(HR)] as per RNTCP and followed up until the end of 2.5 and 6 months for clinico-radiological assessment. CECT Chest done at the end of 6months and treatment was extended with (HR); in patients with persistent significant lymphadenopathy (>1 cm) on CT Chest. Repeat CECT Chest was done 3 monthly till complete radiological response.

Results: Mean age of patients was 27.5±14.38 years with M:F ratio of 3:2. Common symptoms were fever (88%), dry cough (70%) and anorexia (60%). Right paratracheal (73%), Para-tracheal (67%) were commonest lymph node groups involved. Only 15 out of 75 patients (20%) showed evidence of complete clinico-radiological improvement at end of 6 months while 5 (6.6%) patients were lost to follow up. Remaining 55 patients needed extended treatment (HR), 46 (61.3%) patients had complete clinico-radiological improvement at end of 9 months, while 9 (12.1%) patients required 12 months ATT.

Conclusion: 74% of the patients with TML required ATT for more than 6months (9-12 months) compared to 20% of the patients in whom 6months ATT was adequate. The results suggest that 6months RNTCP CAT I is adequate for treating TML.

P2699
Comparison of treatment of TB lymphadenitis with daily vs. intermittent chemotherapy

Tushar Saharabudhe, Sandeep Garg. Department of Pulmonary Medicine, Padmashree Dr. D.P. Patil Medical College, Pune, Maharashtra, India

Relatively better cure rates are noted with use of daily TB chemotherapy regimens compared to intermittent regimens for TB lymphadenitis in our clinical experience. We therefore did a randomized comparative prospective study of daily vs. intermittent chemotherapy for cases with TB lymphadenitis. A total of 170 patients were randomly put on daily or intermittent regimen. Any cases of proven or suspected drug resistance were excluded. The regimen were selected as per the standard DOTS categories. 81 on daily and 73 on intermittent regimens completed their treatment and were available for analysis. 73/81 (90.12%) on daily regimen and 25/73 (34.23%) on intermittent regimens were cured. 17/81 (21.49%) and 23/73 (31.5%) respectively needed extension of treatment. 26/81 (32.09%) and 18/73 (24.65%) had adverse effects of chemotherapy on daily vs. intermittent treatment respectively. Daily TB chemotherapy seems to be superior to intermittent chemotherapy in terms of treatment outcome at the cost of slightly more adverse effects, in our study of TB lymphadenitis.

P2700
Demographic, clinical, and radiographic assessment of symptomatic, smear-negative pulmonary tuberculosis in a public-private mixed DOTS setting in Iloilo City


Background: Annually, numerous cases of pulmonary tuberculosis are being referred to Public-Private Mixed DOTS (PPMD), and in most instances, they are of sputum smear-negative type. Clinicians need to decide when to initiate empiric anti-Koch’s treatment based only on symptoms and radiographic findings, as a delay in the commencement of treatment could cause further transmission of the disease. Thus, an advocacy, heralded by a TB diagnostic committee, of treating smear-negative patients suspected of having active TB disease was started.

Study objective: To recognize the clinical, radiographic, and demographic profile of all sputum smear-negative patients with symptomatic PTB enrolled in the Directly Observed Treatment Short-Course program of St. Paul Hospital-Iloilo (DOTS-SPH) from January 2008 to June 2009.

Design: Retrospective descriptive study

Setting: PPMD (DOTS-SPH) in Iloilo City

Patients: Total of 74, symptomatic smear-negative TB patients enrolled in DOTS-SPH was included in the study.

Results: About half (51.4%) of the patients included in the study were females, mostly young adults (31.1%) in their productive years, residing in the urban areas (73.0%). Patients presented with cough (85.1%), backpain (64.9%), weight loss of 10% (44.6%), easy fatigability (44.6%), and chest pain (43.2%). The most common radiographic finding is the presence of an apical/upper lobe infiltrates (79.7%).

Conclusion: Most patients presented with at least 3 or more constitutional symptoms, cough being the most common. The initiation of anti-Koch’s medications relies mostly on chest radiographic findings and symptomatology of patients.

P2701
Post tubercular sequel as a important non-smoking risk factor for developing COPD

Hernmant Kumar, J.K. Samaria. Department of Chest Diseases, Instr of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

Background: Tuberculosis (TB) and chronic obstructive pulmonary disease (COPD) are major public health problems in developing and under developed countries. Some studies have shown a association between these two diseases which are posing important problem for public health provider organizations.

Aim of the study: To evaluate the risk of developing COPD by previous pulmonary tuberculosis, independent of smoking.

Methods: Study includes 141 patients of COPD which were confirmed by spirometry (FEV1/FVC <0.7), were subjected to thorough history taking, clinical and radiological examination.

Results: Mean age of patients were 58.2 years. Out of 141 patients of COPD, 39 patients had a clinical and radiological evidence of previous pulmonary tuberculosis (SD 0.452, 39/141). 75 patients were having history of smoking (75/141, SD-0.504), 30 patients were identified as a non-smoker patients with previous pulmonary tuberculosis (30/141, 21.3%). In rest of the patients his mass fuel, asthma and other occupational factors were identified as a risk factor for COPD.

Conclusion: Post Tuberculosis is a one of the important non-smoking risk factor for the development of COPD.
Results: Pulmonary impairment was present in 105 (46.9%) patients including 81 (36.2%) patients with airflow obstruction (FEV1/FVC <0.7) and 24 (10.7%) patients with restrictive pattern (FEV1/FVC ≥0.7 and FVC or FEV1<80% predicted). GOLD criteria classified 10.3% of subjects as having mild COPD, 19.2% subjects as having moderate COPD, and 6.7% as having severe COPD. The prevalence of stage II or higher COPD in patients aged 40 and older and in younger patients was 31% and 5%, respectively (p<0.001). In patients with culture-positive pulmonary tuberculosis in the past the prevalence of stage II or higher COPD was 32% and in patients with culture-negative pulmonary tuberculosis the prevalence of stage II or higher COPD was 17% (p<0.005). In patients who had two or more episodes of tuberculosis the prevalence of stage II or higher COPD was 47% and in patients with one episode the prevalence of stage II or higher COPD was 23% (p<0.01)). We did not find influence of gender, smoking on the prevalence of stage II or higher COPD.

Conclusions: A microbiological cure is not the end of illness. Tuberculosis is associated with frequent airflow obstruction. Culture-positive pulmonary tuberculosis as the past episodes of tuberculosis may increase the prevalence of stage II or higher COPD.

P2703
Airflow limitation due to COPD despite tuberculosis sequelae
Nawel Ben Salem1, Nawel Chaouch1, Manel Loukil 1, Mourad Zarrouk 1, Sanaa Choubbi 1
1Pneumology, A. Mami Hospital, Research Unit IRC M5P-MESR, El Manar University, Ariana, Tunisia; 2Radiology, A. Mami Hospital, Ariana, Tunisia

Pulmonary (P) tuberculosis (TB) and COPD are both a significant worldwide burden in terms of morbidity and mortality. They can both induce similar respiratory symptoms and airflow limitation (AFL) and exacerbations. To clarify if COPD can be considered in patients with TB sequelae, we retrospectively analyzed cases of patients with AFL (FEV1/FVC post bronchodilator <0.7) and radiological history of PTB, hospitalized between 2000 and 2010 in which diagnosis of COPD was more probable than TB sequelae because of important tobacco use and clinical history. All patients underwent CT scan to precise P lesions. Patients with PTB after COPD diagnosis were excluded and those with extended TB sequelae as well.

Fifteen patients were included. Mean age was 60 years (44-83 years). Mean smoking level was 58 pack year. The mean delay between TB history and diagnosis of COPD was 5 years (200-300 months). Dyspnea was present in all cases and associated to chronic cough and sputum in 87% of cases. CT scan showed besides TB sequelae, P emphysema in all cases (centrolobular in 75%). AFL was severe in 80% of cases (GOLD III and IV). Treatment was based on theophylline and/or inhaled long-acting B2 agonists in all cases. All patients had clinical improvement with bronchodilator.

Conclusion. Outcome was marked by at least one exacerbation for 13 patients due to P embolism in 2 cases, pneumothorax in 1 case and respiratory infections in all other cases.

COPD should be considered in smokers with AFL even if they have a previous history of PTB. Despite few cases of paraseptal emphysema, the majority of these patients show predominant P centrolobular and panlobular emphysema with an outcome similar to those with COPD and without PTB history.

P2704
Structure of extrapulmonary tuberculosis forms in Romania among 2007–2009
Constantin Muraru1, Cristian Didilescu2, Mihaela Tanasecescu1, Mara Popescu-Hagen1, Nicoleta Cioran1, 1Pneumology, 2Pharmacy, Craiova, Romania

Tuberculosis represents a major matter of public health in Romania and as a result the antituberculosis activities provided by NTP take into account also to point out all the aspects and tendencies of TB endemicity. Objective: In the context of an increased TB endemicity (notification rate 99.9% 000 students in 2007 but with a decrease tendency in the last 7 years, we aimed to determine extrapulmonary TB weight and structure by location in Romania.

Material and method: We have used information in the national data within the service of NTP epidemiologic supervision. Results: Among 2007 – 2009, extrapulmonary TB weight from all sites was chronologically the following: 13.49% ≥3531 cases (2007), 13.41% <3310 (2008) and 14.51% ≥3378 (2009). TB pleurisy represented 62.1% (2007), 62.31% (2008) and 58.1% (2009) of the extrapulmonary sites. In absolute figures, the other extrapulmonary sites were 1263 cases in 2007, 1252 in 2008 and 1381 in the last year, 2009. The most frequent extrapulmonary localizations (without pleurises), whole values from the three studied years, were: intrathoracic extra thoracic adenopathies (1804 cases), osteoarticular localizations (816), meningoencefalities (348), renal and urinary tracks (204) and pericarditis (152) etc. During this period, there were only 2 TB thyroid cases and no sucralfate use.

Conclusions: Extrapulmonary TB forms among 2007-2009 keep a constant weight level within the structure of TB sites. The high level of pleurises (with phisiologic risk) and also the high frequency of TB meninges (severe prognosis, element of epidemiologic gravity) involve an increased responsibility in TB control.

P2705
Pulmonary involvement in extrapulmonary tuberculosis patients
K.B. Gupta1, Manju Jos1, Uma Chaudhary2, Sarita Magu 3, 1Department of Respiratory Medicine, Pt BD Sharma PGIMS, Rohtak, Haryana, India; 2Department of Microbiology, Pt BD Sharma PGIMS, Rohtak, Haryana, India; 3Department of Radiodiagnosis, Pt BD Sharma PGIMS, Rohtak, Haryana, India

Background: Molecular epidemiological studies using genotyping proved that disease transmission is higher in EPTB which also proves the infectiousness of extra-pulmonary tuberculosis (EPTB).

Aims and objectives: To detect the pulmonary involvement in new EPTB patients with the help of sputum examination, X-ray chest, High Resolution Computed Tomography scan of thorax (HRCT) and Fibeiroptic Bronchoscopy (FOB).

Methods: A total of 140 patients of EPTB referred to our DOTS center were investigated for pulmonary involvement from July 2009 through November 2010. Results: The most common EPTB site was the lymph nodes 46.43%, followed by pleural effusion 40.47%. Sputum could be collected from 87.14% patients, and showed 9.38% positivity for AFB on Direct smear and 11.47% positivity on culture. X-Ray chest was done in all 140 patients and parenchymal lesions detected in 82.85%. CT-Thorax could be done in 60.71% patients, and 88.23% showed parenchymal lesions. In FOB performed on 33 patients, 84.84% were found bacteriologically positive. Sputum culture had an additional yield of 2 over sputum smear. CT scan had an additional yield of 13 over x-ray. FOB had an additional yield of 26 over sputum examinations and 5 over x-ray. Total patients with pulmonary involvement of 130 (92.85%) was found; of this bacteriologically proven was 40 (28.57%) patients.

Conclusion: We observed that majority of extra pulmonary tuberculosis patients showed parenchymal involvement, significant bacillary positivity sometimes even with a normal chest x-ray. It suggests the potential infectiousness of extra pulmonary tuberculosis patients is always under diagnosis difficulties. Invasions and the disease prevention precaution measures should also be advised in these patients.
CXR may not have sputum sampling performed, leading to underestimation of pulmonary disease.

**Objectives:** To determine the use of CXR & TBC in patients with EPTB & their diagnostic utility to detect co-existent PTB.

**Study design:** Retrospective clinical and demographic data for TB patients at our hospital (1.1.06 - 31.12.08) obtained from the London TB Register were linked to hospital microbiology & HIV test data. Baseline CXR (B-CXR) were scored by 2 respiratory radiologists blind to patient diagnosis.

**Results:** Of 308 cases (median age 39y, 52.9% female), 155 were notified as EPTB only. 143 (92.3%) had B-CXR, with abnormal (abN) features identified in 67 patients (46.9%): 48 (33.6%) consistent with possible PTB & 9 (6.3%) probable PTB, independent of HIV status. Sputum samples were obtained from 54 patients (37.8%). This was less likely in those with a normal B-CXR (21.4% vs. 56.2% abN, *p* < 0.001). TBC was MTB positive in 9 patients (16.7%): 7 with abN B-CXR (5 possible PTB, 2 probable PTB) & 2 with normal B-CXR.

**Conclusion:** Most EPTB patients had a B-CXR, 40% of which were consistent with possible/probable active PTB. Sputum samples were infrequently obtained, though when performed MTB yield was high. Clinical diagnosis of EPTB using B-CXR review alone may underestimate co-existing PTB. To identify infectious cases & improve TB control, sputum collection & TBC should be performed in all patients.

**P2708**

Assessment of the prevalence of pulmonary involvement in cases with extrapulmonary tuberculosis

Mohamed Zidan, Hany Shaarawy. Chest Diseases Department, Alexandria Faculty of Medicine, Alexandria, Egypt

**Introduction:** Tuberculosis (TB) remains a public health concern worldwide. Previous reports have shown that patients with smear-negative pulmonary TB could transmit TB to others. Whereas it is a common practice to obtain a chest X-ray (CXR) for all patients with extrapulmonary TB (EPTB), sputum examinations are typically limited to those with abnormal radiographic findings suggestive of pulmonary TB.

**Objective:** Is to assess the prevalence of pulmonary involvement in patients with EPTB.

**Methods:** The present study included 120 patients proved to have EPTB. Patients were subjected to symptoms review, full clinical examination, chest X-ray, and sputum examination for acid fast bacilli (AFB) by direct smear and culture.

**Results:** The mean age of the patients included in the study was 34.42 ± 13.43 years with gender distribution of 40% males to 60% females. All patients had histopathological confirmation of having tuberculosis while culture for mycobacterium TB was positive in 41.7% (50 patients) and direct smear examination for acid fast bacilli was positive in only 1.7% (2 patients). Abnormal CXR was detected in 31 patients (25.8%) regardless of the original disease, while sputum culture for mycobacterium TB was positive in 35 patients (29.2%). Although there was no statistical difference between CXR and sputum culture, the crude number was higher in sputum culture. Direct sputum examination was positive in only 6 patients (5%).

**Conclusion:** The prevalence of pulmonary affection in EPTB is significant. The sputum culture for mycobacterium TB is crucial to reach the diagnosis especially in patients with normal CXR or negative direct smear.