PIDSP Journal, 2002 Vol. 6 No. 1

CURRENT ABSTRACTS

MICROBIOLOGY OF PEDIATRIC PRIMARY PULMONARY TUBERCULOSIS.

Chest 2001 May;119(5):1434-8

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OBJECTIVE: To determine the sensitivity of bacteriologic studies in pediatric pulmonary tuberculosis.
PATIENTS AND METHODS: Between January 1988 and December 1996, 104 consecutive patients aged 0 to 18 years received a diagnosis of primary pulmonary tuberculosis at our institution. Demographic, clinical, laboratory and bacteriologic data were collected. Clinical specimens were studied for acid-fast bacilli detection by Ziehl-Neelsen stain and cultured for Mycobacterium recovery by Lowenstein-Jensen culture medium. Statistical analysis was performed utilizing chi(2), t tests and multivariate logistic regression analysis.
RESULTS: Bacteriologic results were available for 57 patients (54.8%). A positive smear or culture result for Mycobacterium tuberculosis was obtained in 9 of 54 patients (16.6%) and 25 of 50 patients (50%), respectively. Confirmation of M tuberculosis disease was achieved in 28 patients (49.1%). Ziehl-Neelsen stain and Lowenstein-Jensen culture recovery rates were 10.3% (14 of 135) and 52% (48 of 92) of specimens studied, respectively. Sputum, pleural fluid and biopsy material cultures yielded M tuberculosis in 55%, 75% and 63% of patients, respectively. Mean +/- SD age (13.7 +/- 4.5 years vs 9.6 +/- 4.5 years) and number of samples submitted for culture (1.93 +/- 0.94 vs. 1.31 +/- 0.97) were significantly higher in the confirmed tuberculosis disease group ($p<0.05$). The presence of a pleural effusion was also more commonly found in the confirmed tuberculosis disease group ($p<0.05$).
CONCLUSION: The sensitivity of bacteriologic studies in pediatric pulmonary tuberculosis disease was 49.1%. Age is the main factor associated with the positivity of culture results.

TWENTY YEARS OF PULMONARY TUBERCULOSIS IN CHILDREN: WHAT HAS CHANGED?

Pediatr Infect Dis J 2002 Jan;21(1):49-53

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OBJECTIVES: To compare the frequency, clinical and radiologic manifestations and source of infection of pulmonary tuberculosis in children treated in our hospital during two decades (1978 though 1987 and 1988 through 1997) and to evaluate the influence of the emergence of HIV infection (since 1985) and the effect of discontinuation of Calmette-Gurin bacillus (BCG) vaccination (since 1987) on childhood tuberculosis.
METHODS: We reviewed 324 children diagnosed with pulmonary tuberculosis in our hospital during the 20 years (1978 through 1997). The data from 2 decades, 1978 through 1987 and 1988 through 1997, were compared, BCG vaccination in Spain was discontinued in 1987, and HIV infection emerged significantly as a public health problem.
RESULTS: An increase in the number of children with single hilar adenopathy was observed (32.2% in 1978 through 1987 vs. 43.4%, in 1988 through 1997, $P<0.05$) in comparison with those with parenchymal involvement or a mixed pattern (62.4% in 1978 through 1987 vs. 45.7% in 1988 to 1997). Frequency in extrapulmonary manifestations in both periods was similar, with a nonsignificant trend toward a lower rate of tuberculous meningitis in the latter decade (10.4 vs. 5.6%, $P=0.07$). We were able to identify an adult source case for 67.1% of the children (100 of 149) in the first decade vs. 58.3% (102 of 175) in the second (P=NS); 10.8% of adult contacts but only 2.3% of children (all of them in the second period) were HIV-positive.
CONCLUSIONS: Discontinuation of BCG vaccination and emergence of HIV infection have had little influence on childhood tuberculosis in our area.

THE CT FEATURES OF ABDOMINAL TUBERCULOSIS IN CHILDREN

Pediatr Radiol 2002 Feb;32(2):75-81

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BACKGROUND: The last decade has seen a resurgence in the incidence and clinical presentation of tu-

berculosis (TB). Little data exist in the paediatric age group regarding abdominal tuberculosis (ATB) and limited reports of its CT features have been published.
PURPOSE: To elucidate the CT features of ATB in children.
MATERIALS AND METHODS: The medical records of 22 patients with ATB were reviewed. Data were extracted regarding the methods of diagnosis and HIV status. The plain chest films were examined and the CT scans were assessed for adenopathy, solid organ involvement, ascites, bowel wall and omental thickening and inflammatory masses.
RESULTS: Ten patients had biopsy-proven ATB, 11 had extra-abdominal TB with clinical suspicion of ATB and 1 had a positive trial of therapy. Five patients were tested for HIV and one tested positive. Thirteen patients had abnormal chest radiographs. The commonest CT finding was lymphadenopathy (n=17), followed by solid organ involvement (n=12), ascites (n=5), bowel wall thickening (n=5), inflammatory masses (n=2) and omental thickening (n=1).
CONCLUSIONS: The clinical features of ATB are protean. This usually results in a delay in diagnosis and impacts negatively on patient morbidity and mortality. On CT, the constellation of findings is highly suggestive of the diagnosis of ATB and, used in conjunction with clinical and laboratory data, should narrow the differential considerably. Unique findings include histologically proven active TB in calcified lymph nodes and a pancreatic TB granuloma.

MULTIFOCAL MUSCULOSKELETAL TUBERCULOSIS IN CHILDREN: APPEARANCES ON COMPUTED TOMOGRAPHY

Skeletal Radiol 2002 Jn;31(1):1-8

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PURPOSE AND PATIENTS: The incidence of skeletal tuberculosis (TB), which once accounted for a majority of cases of extrapulmonary tuberculosis, has fallen significantly in recent years with the advent of effective drug therapy. Disseminated bone involvement in TB is very uncommon but it may still occur in countries where TB is endemic. We present the imaging findings of four children ranging in age from 2 to 13 years, each of whom had multiple osseous stigmata of tuberculosis infection. They presented to us over a period of 9 months.
RESULTS AND CONCLUSION: Three of four children had calvarial lesions, with involvement of the bony orbit in one and large abscesses were present in the chest wall and the mediastinum of another. Lesions along the dorsal spine were demonstrated in three cases, two of which showed epidural extensions. Bone lesions in the thoracic cage accompanying those in the spine were also seen in two children, one of whom had a solitary destructive focus in a rib distant from the site of vertebral involvement. Bone lesions involving the first metacarpal in one case and the scapular wing in two others are also described. The diagnosis in each of the cases was confirmed by the identification of epithelioid giant cells and caseous necrosis or tubercle bacilli in fine needle aspirates or on tissue culture studies.

CLINICAL PRESENTATION OF TUBERCULOSIS IN CULTURE-POSITIVE CHILDREN. PAEDIATRIC TUBERCULOSIS CONSORTIUM

Pediatr Infect Dis J 1999 May;18(5):440-6

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BACKGROUND: Because tuberculosis (TB) in children implies recent infection, children serve as sentinels for disease transmission within a community. Despite the significance of diagnosing tuberculosis in children, most cases are diagnosed on clinical evidence rather than laboratory findings.
METHODS: We analyzed the demographic and clinical presentation of 156 children with culture proven tuberculosis using Epi-info Version 6.
RESULTS: Although the findings of pediatric postprimary pulmonary TB include upper-lobe consolidation and cavitation, multifocal ill-defined airspace opacities, evidence of prior pulmonary TB and apical pleural thickening. Pleural effusions and lymphadenopathy are not commonly present. Although postprimary disease typically does not affect young children, five of the children in this series were less than ten years of age at the time of presentation.
CONCLUSION: The possibility of postprimary TB should be considered in pediatric patients at risk for this disease who present with upper-lobe pulmonary consolidation and cavitation. These patients are highly infectious and early recognition and treatment can limit transmission of TB.