



Diverse Presentation of Extrapulmonary Tuberculosis

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Abstract

Manifestations of tuberculosis (TB) is protean, 75% being pulmonary and the rest Extrapulmonary which occurs as isolated entity or associated with pulmonary TB. Diagnostic modalities are based on fluid cytology, fine needle aspiration cytology (FNAC), tissue biopsy, followed by response to anti-TB chemotherapy. The commonest site of extrapulmonary Tb is lymph node followed by genitourinary tract, abdomen, meninges, pericardium, bones and joints etc. The diagnosis depends upon histopathology, AFB stain, Mantoux test, chest X-ray (CXR), however.

Key words: Tuberculosis (TB), Extrapulmonary, Acid Fast Bacilli (AFB), Chest X-ray (CXR), Ultrasonography (USG)

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Introduction:

TB is the most common infectious disease in the world, nearly one-third of the world's population is currently infected and more than 1.5 million people die each year from it [1]. Of all the cases of TB about 75% are pulmonary TB ;15 % are extra-pulmonary and

5% both [2]. Extrapulmonary TB has become more common since the advent of human immunodeficiency virus [2].

Studies have suggested that the sites of extrapulmonary TB may vary according to the geographic location and population [3]. Diagnosis of extrapulmonary TB was based on FNAC or biochemical analysis of CSF/ pleural/ascitic fluid or histopathological examination, followed by assessing the response to anti-TB chemotherapy [3]. Diagnostic tests include imaging modalities, mantoux test, AFB smear and culture and chest CXR. Methods using molecular studies, such as PCR (real time and nested polymerase chain reaction) and serological tests like immuno-chromatographic and enzyme linked assays are used for diagnosis of the infection [22]. Newer tests for the diagnosis of TB infection include interferon assays like Quanti FERON TB gold assay and enzyme linked immunospot [22]. The sensitivity of these methods is often crucial since few bacteria may be present in extrapulmonary TB.

Case reports:

Case no	Provisional diagnosis	Clinical presentation	Gross findings	HP report	Supportive investigations
1. 50/F	Fibroid uterus	Perimenopausal bleeding	Uterus, cervix b/l adenexa	TB Cervicitis AFB negative	USG Normal; CXR-Normal
2. 52/M	Left vaginal hydrocele; seminoma	Painless swelling left groin; reducible with expansile impulse on coughing	Testis with yellowish, gray white granular areas.	TB orchitis AFB Positive	CXR - Normal
3. 51/M	Carcinoma rectum	Diarrhoea-off & on, protruding mass, & bleeding P/R .	Multiple tiny gray white tissue bits	Intestinal TB AFB Positive	CXR: consolidation lung & pleural effusion (R)
4. 60/F	TB verrucous cutis Hansens	Itchy raised lesion over left elbow; normal sensations; no peripheral nerve thickening	Elliptical bit of skin	Lupus vulgaris AFB negative	Blood inv – normal
5. 51/M	Parietal wall abscess; Infected Lipoma	Painless swelling lower abdomen	Multiple fatty tissue pieces	TB abdominal wall AFB negative	USG abdomen- infected lipoma of parietal wall; CXR- Normal

Discussion:

Patients with pulmonary TB (8-10%) are at risk of developing genitourinary TB [4]. Genital organs most frequently affected include fallopian tubes (95-100%), endometrium (50-60%) and ovaries (20-30%) [4]. TB of the cervix is rare and accounts for 0.1-6.65% of all cases of TB and 5-24% of genital TB [5]. Pelvic organs are infected from a primary focus by direct extension, hematogenous spread, lymphatic spread, or spouse with TB epididymitis [6]. The most common presentations in TB of female genital tract are amenorrhoea, menstrual irregularities, infertility, vaginal discharge and post menopausal bleeding [8].

Gross appearance of cervical TB can vary such as: papillary/ ulcerative growth/ hypertrophy [9]. TB cervical lesions may cause diagnostic dilemma with other granulomatous lesions of the cervix like Chlamydia trachomatis, Neisseria, Schistosoma, Brucella, Tularaemia, Sarcoidosis, foreign body reaction [7] or mistaken for carcinoma cervix. Response to chemotherapy is excellent for all forms of genital TB; surgery in women is necessary for large tubo-ovarian abscesses [2].

In our reported case histopathologically diagnosed as TB cervicitis (**Fig.1**), there was no clinical suspicion of the infection.

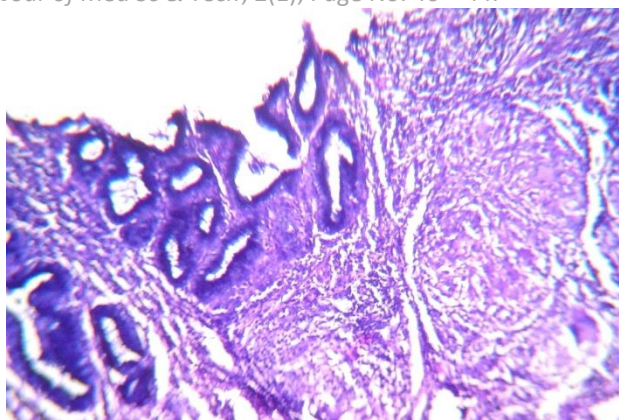


Fig.1- Low power(10X) view of Tuberculous cervicitis

About 28% cases of genitourinary TB have isolated genital involvement [10]. The case of TB orchitis without the involvement of epididymis was reported. The possible etiology of isolated TB is that rarely the infection of the testis could be by hematogenous route rather than the usual direct extension from the epididymis [11]. It can involve epididymis, testis, prostate, seminal vesicle and present as painful scrotal mass as in our case clinically mimicking seminoma. Patient can also present with infertility due to epididymal or vas obstruction or scrotal sinus [12].

TB of the gastrointestinal tract presents with non specific symptoms like abdominal pain and swelling, fever, altered bowel habits; the complications can be a surgical event like haemorrhage, obstruction, fistula and perforation. The most common site involved is ileo-caecal region, followed by ascending and transverse colon [13]. Colonoscopy and biopsy is considered the most effective investigation for definitive diagnosis of ileocaecal and colonic TB [14]. Biopsy demonstrates caseating granulomas (up to 100%) and the presence of AFBs in the reported cases(67%)[15]. Our case(no.3) presented as a multinodular mass on colonoscopy; histopathology was positive with caseating granuloma and AFB. Differential diagnosis of TB enteritis such as: Crohn's disease, amoebiasis, neoplasm, Yersinia infection, and actinomycosis [16] were excluded histologically, however. Lupus vulgaris is a post primary form of skin TB, arising in previously sensitized individuals with moderate immunity [17]. Cutaneous TB represents 1.5% of all cases of extra-pulmonary TB [18]. It is usually asymptomatic with initial lesion of macule or papule characterised by

soft brownish red lesions which appear as apple jelly nodules on diascopy. Lupus vulgaris is a pauci-bacillary form of TB infection, culture is negative and the diagnosis is based on histopathological examination, demonstration of AFB on smear, mantoux test and response to chemotherapy [18]. Majority occur in the head and neck region [17], either preceded by scrofuloderma [17]/cervical lymphadenitis or pulmonary TB. The case reported in our study was diagnosed on histopathology. Follow up study six months after anti-TB chemotherapy showed clinical improvement. Cutaneous leishmaniasis, actinomycosis, leprosy, syphilis and deep mycosis should be considered in the differential diagnosis of cutaneous Tb [19], however. Abdominal wall TB presenting as parietal abscess usually develops secondary to an embolus of TB organism from the pulmonary focus, by direct inoculation or extension from an underlying lymphadenitis/ synovitis/ osteomyelitis [20]. Swelling and pain are the main manifestations of this condition. TB abscess of this area may be misdiagnosed as sarcoma or other benign soft tissue tumor [21]. Our case (no.5) presented as a painless mass in the lower abdomen diagnosed as lipoma/parietal wall abscess on clinical examination and infected lipoma on ultrasonography. Biopsy showed presence of well formed granulomas with caseation necrosis. There was no evidence of pulmonary tuberculosis and all investigations were within normal limits. All cases reported in this study were diagnosed by histopathology showing well formed TB granuloma with langhan giant cells and caseation necrosis (Fig.2)

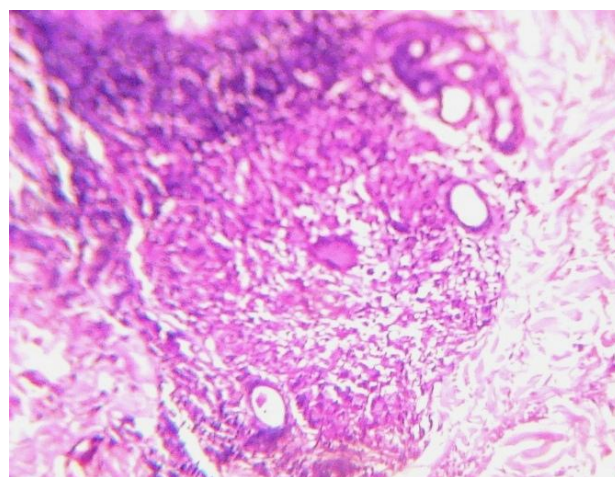


Fig.2 - High power view(40X) of Tubercular granuloma with epithelioid cells, langhans giant cells and lymphocytes

Acid fast stain was positive only in case of intestinal tuberculosis and TB orchitis (Fig.3).

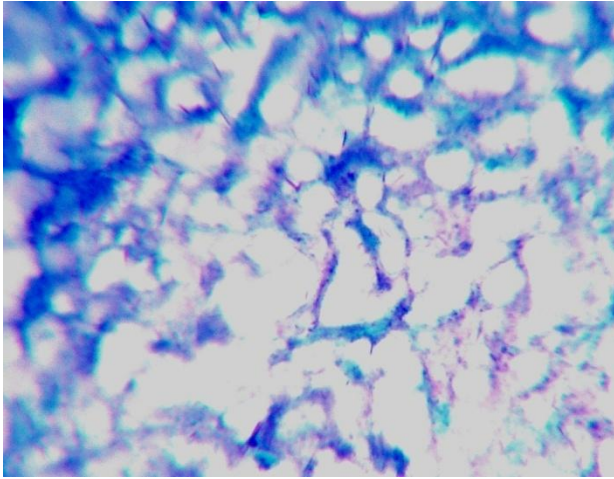


Fig.3- AFB positive bacilli under oil immersion

In the cases reported here CXR, mantoux test and blood tests were within normal limits. Cases of intestinal TB and TB orchitis were clinically suspected to be malignant lesions and histopathology revealed the diagnosis. All our cases responded well to anti TB chemotherapy.

Conclusion:

Sites of extrapulmonary TB may vary according to the geographic location and population. Five cases of extrapulmonary manifestation of TB are reported, the prime diagnostic modality remains histopathology. Good response to anti TB therapy as follow up, indirectly though, proved in favour of the correct diagnosis, particularly in the cases which were AFB-negative.

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