Case Report

Cytological diagnosis of tuberculous cervicitis: A case report with review of literature

ABSTRACT

Tuberculosis of cervix is a rare disease. Tuberculosis usually affects women of childbearing age, indicating hormone dependence of infection. The patient presents with menstrual irregularities, infertility or vaginal discharge. Cervical lesions presents as papillary/vegetative growth or ulceration mimicking cervical cancer. Cervical Papanicolaou (Pap) smear plays an important role in diagnosing the disease by non-invasive technique in which the presence of epithelioid cells and Langhan's type of giant cells is diagnostic. However, other causes of granulomatous cervicitis should be considered and ruled out. Ziehl–Neelsen (ZN) stain for acid fast bacilli, fluorescent technique, biopsy and culture help in confirming the disease. We present the case of a 45-year-old female, who presented with vaginal discharge, dysfunctional uterine bleeding, first degree uterine descent with grade II cystocele and rectocele and cervical ulcer. Pap smear revealed epithelioid cells and Langhan's type of giant cells, confirmed by ZN stain of cervical smear, fluorescent technique and culture.

Key words: Cervical smear; tuberculous cervicitis; tuberculosis.

Introduction

Tuberculosis (TB) can affect any organ in the body and can exist without any manifestation.[1,2] The common sites in females are fallopian tube, endometrium and ovary.[1,3-5] TB of cervix is a rare disease.[3,6] Many times, clinical symptoms and signs give no indication.[3] Hence, a high index of suspicion of TB in females with abnormal cervical presentation is required while screening cervical smears, especially from areas where TB is common.[1]

Case Report

A 45-year-old multipara presented with vaginal discharge, dysfunctional uterine bleeding (DUB) and mass per vagina. Per-speculum examination showed first degree uterine prolapse, grade II cystocele, rectocele and a cervical ulcer. Per-vaginal examination showed no significant abnormality. Patient did not reveal any present or past history of TB. Family history was not contributory. Routine cervical Papanicolaou (Pap) smear showed superficial/intermediate squamous cells with parabasal cells in a background of neutrophils. Focal areas showed macrophages, clusters of epithelioid cells and a few Langhan's type of giant cells [Figure 1]. A cytological diagnosis of granulomatous cervicitis was made. Ziehl–Neelsen (ZN) stain of the cervical smears showed acid fast bacilli (AFB), which was later confirmed by fluorescent technique and culture. Chest radiograph was not significant. The HIV status was negative. Patient did not have any kind of immunodeficiency. Patient was put on anti-TB drugs following which the symptoms resolved.

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Discussion

TB cervicitis constitutes about 0.1–0.65% of all cases of TB and 5–24% of genital tract TB.[1-4,6,7] Only a handful of cases of TB cervicitis diagnosed by cervical smears have been reported.[8] It is uncommon in developed world, but still persists in developing countries like Africa and India.[1,6] However,

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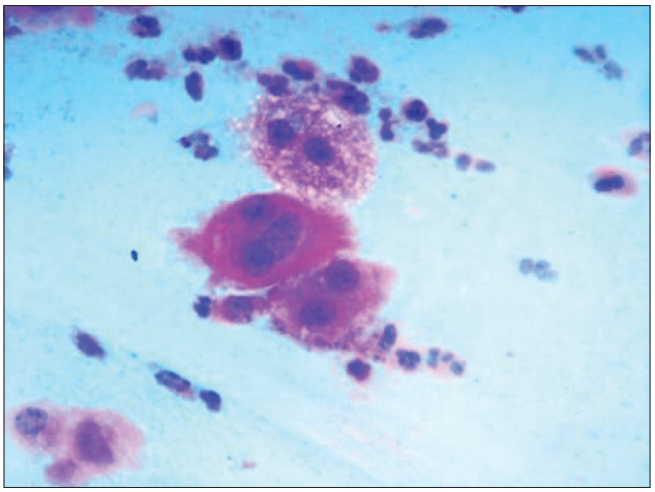

Figure 1: Microphotograph of cervical smear showing parabasal cells, macrophages, epithelioid cells and multinucleated giant cells (Pap, ×400)

there is no possible way to assess the true magnitude of TB of female genital tract (FGT) as majority of cases remain asymptomatic, but infected, are discovered incidentally or remain undiscovered.[2,4]

The age incidence is variable, but 80% of cases are seen in reproductive age, more frequently between second and third decades, indicating hormone dependence of infection.[1,2,6,8]

FGT TB is usually secondary to primary focus elsewhere, constituting 92% cases, and 8% present as primary disease. 90–95% cases are due to infection by human mycobacteria and 5–10% due to bovine bacilli.[2,6] Secondary TB cervicitis is due to direct spread or by miliary seeding via blood stream/lymphatics.[1,3,4,6] Previous history of pulmonary TB was present in 5% cases and original pulmonary/extrapulmonary disease often healed at presentation.[1,2,5] Primary cervical TB is rare, introduced by the partner with TB epididymitis, other genitourinary TB or when sputum is used as sexual lubricant.[1-4] Cervix is relatively resistant to TB infection because of robust nature of the stratified squamous epithelium of the ectocervix which prevents bacterial penetration and protective action of the endocervical mucous. Regular endometrial shedding may also limit exposure of the organ to the mycobacteria. A reduction of local immunity/trauma may contribute to cervical infection.[4,6]

Majority of cases are not suspected clinically.[3,4] Many times, it is a histological surprise even in endemic areas.[4] Common presentations are abnormal vaginal discharge/bleeding, menstrual irregularities and infertility.[1-4] However, 50% of cases remain asymptomatic.[2,6] On examination, 90% cases are normal and the rest present with non-specific macroscopic changes like proliferative growth, ulcerative/hypertrophic nodular lesions or fistulas/sinuses.[1-5,7,9] Often, the lesion mimics carcinoma cervix, especially in postmenopausal females.[3] Some features are common for both carcinoma and TB and carcinoma cervix is more common than TB.[4,6] TB cervix can coexist with carcinoma *In-situ* and infertility.[6] In hypertrophied cervix, limited bacterial multiplication is attributable to strong immune response presenting as pseudoepitheliomatous hyperplasia of squamous epithelium of cervix with ill-defined caseous tubercles and many times AFB culture is negative. In predominantly ulcerative lesions, increased numbers of mycobacteria were recovered with well-formed tubercles and caseous necrosis.[9]

Cervical cytology is a non-invasive procedure which helps in the diagnosis in the presence of epithelioid and multinucleated histiocytic cells, prompting further investigation. Epithelioid cells are elongated cells with pale eosinophilic cytoplasm, indistinct cell borders having large oval/elongated nuclei with a delicate chromatin pattern in singles/clusters. Multinucleated histiocytic cells, typical of Langhan's cells type, have large number of delicate, often ovoid nuclei, some overlapping, arranged peripherally and often in horseshoe fashion. Similar multinucleated histiocytic giant cells can be found in postmenopausal smears and smears after radiotherapy with even distribution of nuclei and a more definite outline, and they sometimes contain phagocytosed debris with radiation-induced changes. Multinucleated cells of herpes virus are of epithelial origin, have smaller number of nuclei, show characteristic crowding/molding without overlapping with eosinophilic inclusion in nuclei and cytoplasm. Syncytial trophoblastic giant cells are very rarely found in cervical smears. They can be round/irregularly shaped, nuclei show coarse granular chromatin and are uniformly distributed/gathered together at an end of the cell, lying in pale blue or amphoteric fluffy cytoplasm.[6,7]

Cervical biopsy shows multiple caseating granulomas with heavy lymphoplasmacytic infiltrate at the rim of the tubercles.[3] Lymphogranuloma venereum, sarcoidosis, schistosomiasis, foreign body reaction, syphilis, granuloma inguinale, etc. should be ruled out.[1,3,4,5,9]

Unequivocal diagnosis of TB requires demonstration of the mycobacteria by ZN stain and culture.[4] However, AFB with ZN may not be positive in every case.[3] Sometimes, tubercle bacilli are very rarely found in cervical granulomas even with the use of fluorescent technique.[5] Isolation of the bacilli is the gold standard for the diagnosis. However, in one-third of cases, the culture is negative.[1,3,4] The other investigations which can be considered are chest radiograph, repeated sputum/urine analysis, serology, polymerase chain reaction (PCR) and screening family members.[1,2,4-6,9]

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