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International Journal of Current Research
Vol. 7, Issue, 02, pp.12911-12913, February, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

CASE STUDY

ATYPICAL MYCOBACTERIAL INFECTION-A DIAGNOSTIC CHALLENGE

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ARTICLE INFO

Article History:
Received 27th December, 2014
Received in revised form
25th January, 2015
Accepted 19th January, 2015
Published online 28th February, 2015

Key words:

Nontuberculous Mycobacteria,
Mycobacterium ulcerans, Labiamajora, Pus.

ABSTRACT

We report an inexplicable case of recurrent multiple discharging sinuses, on labia majora and mons pubis in a 28 year old female patient with history of pulmonary Kochs. The discharge was related to the menstrual cycle. The pus collected from the lesion showed plenty of acid fast bacilli on microscopy but enigmatically culture showed no growth of Mycobacteria even after several tries. After excluding the probable differential diagnosis, we came to the conclusion that probably we are dealing with a case of Mycobacterium ulcerans but unfortunately neither could we cultivate the fastidious organism to speciate it nor could we perform the molecular diagnosis. The unusual site of Mycobacteria Other Than Tuberculosis (? M.ulcerans) infection prompted us to report the case.

INTRODUCTION

Mycobacterium ulcerans can cause cutaneous infections in tropical climates where the characteristic lesion is called the 'Buruli ulcer'. Today M.ulcerans infection is the third most frequent mycobacterial disease in humans after tuberculosis and leprosy. The organism is considered as an environmental saprophyte and the mode of transmission to humans is uncertain but traumatic inoculation into the skin is most likely. It is a fastidious organism, heat-sensitive and has a long generation time compared to other Nontuberculous Mycobacteria (NTM). In our case, after exclusion of all other possibilities the only option remaining was infection with NTM, probably Mycobacterium ulcerans but we did not have any prima facie evidence.

Case report

A 28 year old unmarried lady presented to us with chief complaint of multiple recurrent discharging sinuses from the right sided labia major a extending to the mons pubis within a course of 9 years. She presented to us with the weeping ulcer with multiple pus points. She was complaining of vague pain with slight burning sensation over the lesion. The lesion started as a pustule 5 days before her menstrual cycle followed by spontaneous discharge of pus for the last 9 years. It healed up after intake of antibiotics but recurred after an interval of 6 months. She had undergone incision and drainage twice suspecting the lesion as Bartholin's cyst, which only resulted in increased frequency 'of discharge'. After 6 years of initial presentation, in the year 2009 she underwent excision of the infected tissue following which she had absolutely no complaints till last year, when she developed similar lesion in the same area, that became a weeping ulcer and the onset of the lesion coincided with the onset of her menstrual cycle. She had a past history of pulmonary tuberculosis with cavitary lesion for which she took CAT I Antitubercular drugs 11 years back.

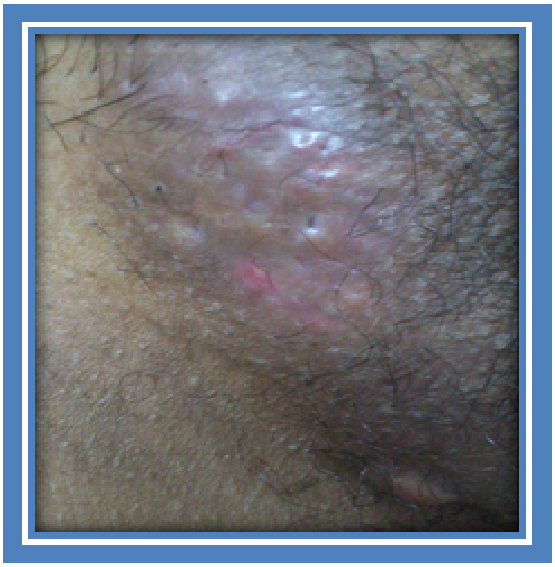

Fig. 1. Multiple discharging sinuses located over mons pubis

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Antibiotic history: AKT 4 intake on January and February 2014

2 weeks history of Rifampicin (alone) intake is also there. History of intake of Amoxycillin-clavulanic acid and 3rd Generation cephalosporin present. Topical application of Polymixin B had been done.

On examination

The pus was thick and whitish in colour. Local genital examination revealed diffuse indurated swelling of the labia majora with overlying skin studded with papulo-vesicles and oozing of milky fluid. Nontender, firm, lymph nodes involving both horizontal and vertical groups of inguinal lymph nodes were palpable bilaterally.

Investigation

Gram stain from the lesion showed plenty of pus cells and Gram positive cocci in pairs. AFB smear showed plenty of acid fast bacilli, present in clumps.

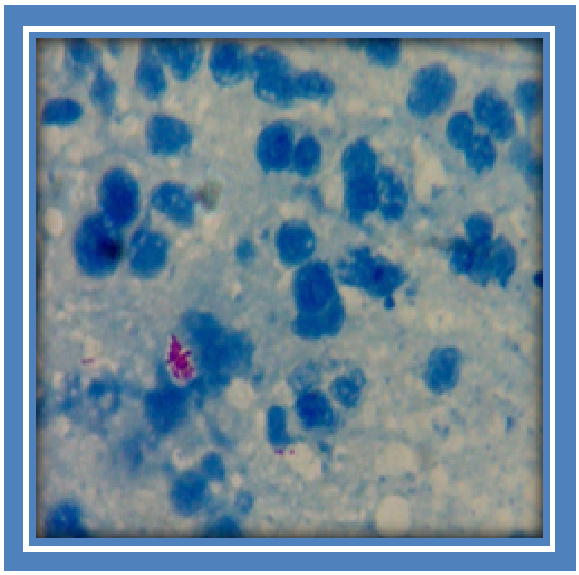

Fig. 2. AFB smear showing acid fast

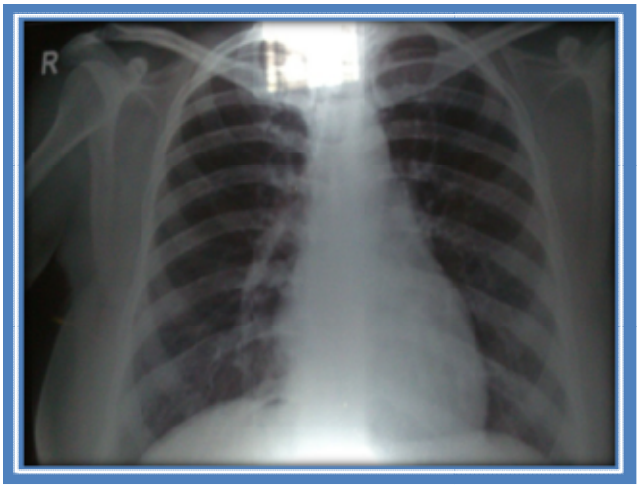

Fig. 3. Chest x ray PA view

LJ media showed no growth after 8 weeks of incubation. TB RTPCR was negative. Rapid culture for Mycobacteria (automated) - showed no growth BIOPSY done but it showed no granuloma and no malignancy only mild dysplasia. Giemsa stained smears of the sample showed no intracellular bodies. Mantoux test was reactive (11′ × 11 mm). Liver function tests and renal function tests were within normal limits. Chest X-ray showed no abnormality. Serology for HIV I & II was found to be negative.

DISCUSSION

Differential Diagnosis

The following possibilities came into our mind

1. Secondary tuberculosis of vulva by Mycobacterium tuberculosis after having pulmonary tuberculosis, but easily excluded as TB RTPCR was negative **(Manoj Kela, Soma Mukherjee).**
2. TB lymphangiactesia (**Nidhi Singh, Rashmi Kumari**), was another possibility since cases had already been reported, but also excluded as biopsy showed nothing suggestive of lymphangiactesia.
3. *Klebsiellagranulomatis* infection (**Ananthanarayan and paniker**). Infection with this organism will show similar clinical picture but one of the diagnostic features of this infection is the detection of Donovan bodies-an intra-cytoplasmic inclusion body in Giemsa stained smears. Giemsa stained smears here showed nothing suggestive of any intra-cytoplasmic inclusion bodies-so this is also excluded from the differential diagnosis.
4. Chlamydia (**Ananthanarayan and Paniker**) - Though clinical course simulates Chlamydia but typical appearance of bubo was absent in this case.
5. Chronic fungal infection-KOH mount of the material taken from the discharging sinuses, on direct microscopy revealed no fungal elements. Fungal culture on Sabouraud Dextrose Agar and Sabouraud Dextrose Cycloheximide Chloramphenicol Agar media showed no growth.
6. Vulvalactinomycosis-no history was there regarding discharge of sulphur granules and gram stained smear of the material taken from the site revealed nothing suggestive of actinomycosis.

After exclusion of all other possibilities the only option remaining was that the patient was having infection with Non Tubercular Mycobacteria (NTM) probably *Mycobacterium ulcerans.* The following points are going in favour of our diagnosis (Gaby E).

1. Cultivation of this organism is practically impossible due to its fastidious heat sensitive nature as well as to a long generation time compared with that of other NTM-Which may be the valid explanation why all our efforts were in vain to obtain any growth of *Mycobacteria*.
2. Infection with *Mycobacterium ulcerans* may not cause systemic invasion or regional lymph gland involvement, as it grows optimally at skin temperature. In our case the similar type of clinical course occurred-though the patient

was having complaints for several years, she was absolutely free from any systemic symptoms.

3. Initially, smears from the edge of the ulcer show large clumps of bacilli which were acid fast. Later after commencement of immunoreactive phase the bacilli suddenly disappeared. This characteristic phenomenon of *Mycobacterium ulcerans* infection occurred in our case also when 4+ acid fast bacilli on AFB smear was followed by sudden disappearance.
4. On biopsy examination of the infected vulval tissue no granuloma was seen. This is fairly explainable by the fact that NTM infection rarely causes granuloma.

But unfortunately PCR for NTM is not available in our institution as well as in any private setup in Kolkata.

Ray of Hope….. One of our MD microbiology collegues will work on detection of NTM by RTPCR for his thesis. The above case will be his first!!!

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