Editorial

An Experience of Atypical Mycobacterial Postoperative Infection in a Tertiary Hospital

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Atypical mycobacteria are the species of mycobacterium other than Mycobacterium tuberculosis. They are the causative bacteria of pulmonary and extrapulmonary infections. Mycobacterium fortuitum is one of the members of this group of rapidly growing environmental mycobacteria, which are mainly present in soil and water.[1] Organisms exist as saprophytes, and they are also found in dust, animals, sewage, and dirt. Cutaneous infections are not uncommon, and immunocompromised patients are more susceptible to severe disease caused by these species of mycobacteria.[2] Infections caused by these organisms are also reported in immunocompetentpatients.[3]

Infections typically occur following trauma, surgery, or other procedures, including contact with contaminated medical instruments, placement of implants and tattoo ink or acupuncture needles.[4] A post-injection abscess is another frequent presentation.[5] Furunculosis of the lower extremities has also been observed following footbaths in nail salon customers.[6] Less often, cutaneous infection is the result of dissemination from an endogenous source.[7,8]

Hospital incidence and our Observations

Several incidences of postoperative wound infection were reported at Obstetrics and Gynecology (O & G) department of a tertiary hospital in northern part of Bangladesh. The hospital authority formed a search committee to find out the causative reason of these infections and asked to make a guideline to solve the problem. The Committee visited and discussed with the doctors, nurses, staff and few patients of O & G department and reported on follow-up to concluding observations, individual communications, and treatment.

The committee had the following observations:

1. Four to six weeks after the operation procedures in one of units of O & G Department, few postoperative patients rushed to OPD with the complaint of wound related problems like pus discharging lesion over abdomen. All of these patients underwent surgical procedures during the time period of November and December, 2021, at a particular operation theater (OT). Clinical examination of these patients revealed the evidences of delayed wound healing, breakdown of wounds after initial healing, redness or discharge from the wounds, nodules in or around the vicinity of the wounds, and fever of unexplained aetiology. At the time of presentation, in some cases, single sinus was present.

2. During this time, huge constructional renovation in the hospital building was taking place at around the areas of O & G operation theater and labor room.

3. Available discharge from the wounds or nodules was subjected to make smears and studied with Gram and Ziehl-Neelsen (ZN) stain. On identification of acid-fast bacilli (AFB) in the smears, the discharge was subjected to culture on blood agar and MacConkey agar media. The primary investigation in our Microbiology Lab revealed the presence of AFB in the wound swab specimens. We came to a decision that the most possible cause of these type of surgical ulceration is due to non-tuberculous mycobacterium (NTM) likely, Mycobacterium fortuitum. These organisms are environmental bacteria and easily can contaminate the wound. The discharge was very minimal and non-foul smelling. Most of the patient had the similar complaints. However, confirmation of NTM is not a common laboratory procedure, and not available in this laboratory. Therefore, further confirmation was not possible.

4. The source of these organisms could be from:
a. Dusty and moist environment at the venue site.
b. Supplying tap water,
c. 'Operators' Hands' (operating team).

There are numerous documented cases of morbidity and mortality related to construction activities in the hospital. Hence, guidelines recommend negative pressurization of the construction zone to prevent the migration of dust and potential pathogenic agents into the functioning zone.[9]

The committee suggested

1. To close all activities in related OT where these patients were operated. Proper disinfection of OT was advised.
2. Open the wound partially by removing the staples or sutures
3. Rinse the wound with saline solution
4. Do tests of the pus or tissue in the wound to figure out if there is an infection and what kind of antibiotic medicine would work best
5. Debridement of the wound by removing dead or infected tissue at the site
6. Once confirmed about atypical mycobacteria start the antibiotics accordingly.

Recommendation of antibiotics

Treatment of the fast-growing mycobacteria depends on the characteristic symptoms of each patient. They are particularly sensitive to amikacin and also to the tetracyclines, first-generation cephalosporins, quinolones, and the new macrolides.[10] Monotherapy should not be used, since resistance to quinolones has already been found.

So the committee concluded the following protocol regarding the treatment:

Plan A

Amikacin + Ofloxacin or Cefoxitin for 2 months followed by trimethoprim-sulfamethoxazole plus doxycycline or levofloxa

cin to complete 6-12 months' regime.[11]

Plan B

Only in very limited cases antitubercular drugs (isoniazid, rifampicin) could be prescribed to avoid maternal and neonatal complications.

Comments

Postponing operation procedures in that particular OT for few weeks and its proper disinfection resulted in the disappearance of wound infection.

Our cases are unusual because majority of the patients were immunocompetent young female. The source of infection could be from hospital environment. Hence, microbiological identification and antibiotic susceptibility testing allows the timely and efficient therapy of such patients.

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