

Port Site Tuberculous Infection a Case Report and Review of Literature

Prof.N.Tamilselvan¹ MS, Dr.P.V.Dhanapal² MS

¹(Associate Professor, Department of General Surgery, Government Mohan Kumaramangalam Medical College, Salem)

²(Senior Assistant Professor, Department of General Surgery, Government Mohan Kumaramangalam Medical College, Salem)

Abstract: As the surgeries done by laparoscopy are increasing, associated complications are also increasing. One among them is port site infection especially port site infections due to Atypical Mycobacteriae. There is a concern about the effectiveness of sterilizing reusable laparoscopic instruments which might be a potential source of these infections, if not properly sterilized. Here we present a case report of port site tuberculosis following laparoscopic appendicectomy which was managed effectively by surgery and anti tubercular drugs.

Keywords: Atypical mycobacteria, Non-healing sinus, Port site infection, Sterilization,

I. Introduction

Atypical mycobacteria are acid-fast bacilli that do not cause tuberculosis or leprosy. These atypical mycobacteria exist in almost all habitats. They cause a variety of clinical problems, there are about 110 species of atypical mycobacteria of which the Mycobacterium avium complex is the most common organism that causes systemic disease in humans. The most common infection is the so-called fish tank granuloma, which is caused by *Mycobacterium marinum*.

Sometimes these organisms gain entry in to the body through pinprick or thorn prick. These infections may be preceded by surgeries like cosmetic liposuction, liposculpture, augmentation mammoplasty, or median sternotomy. Some patients have acquired the infection following endoscopic and laparoscopic procedures. The source of infection being the contaminated tap water that is used for diluting the concentrated chlorhexidine which is used to sterilize the instruments used in these procedures [1]. We are reporting one such case of port site infection following laparoscopic appendicectomy.

II. Case Report

A 35 five year old female came to us with a history of pain and discharge from one of the port site, following lap appendicectomy which was done 3 months ago. She had swelling, pain and discharge from the port site in the left iliac fossa. For which two courses of antibiotics were given by the Surgeon who did the surgery. The port site was explored twice earlier by the same surgeon but the findings and the results were not known.

On examination there was a liner scar of 4 cms. In the left iliac fossa (at the site of left iliac fossa port). Erythema was seen all around. There was a sinus discharging thin serous fluid. There was diffuse thickening deep to the sinus. A diagnosis of chronic port site infection was made.



Fig.1. Picture taken at the first visit

Blood counts were within normal limits. Discharge from the sinus was sent for culture, but there was no growth. But to our surprise, smear from the discharge showed gram positive rods. Hence the possibility of other organisms was thought of. Ziel – Nelsen stain showed acid fast bacilli. (Scanty in number). A serum PCR test for Mycobacteria was done, which was positive for Atypical Mycobacteria.

The pt. was started on a combination therapy with a Quinolone (Moxifloxin) 400 mg. OD, Rifampicin 600 mg. OD (according to body wt.), Isoniazid 300 mg. OD plus Ethambutol 800 mg. OD for the 1st month. Same regimen but without Quinolone for the 2nd month. From the 3rd month onwards only rifampicin and INH were given. The discharge stopped, erythema disappeared at the end of the second month. But the diffuse thickening became localised and nodular.

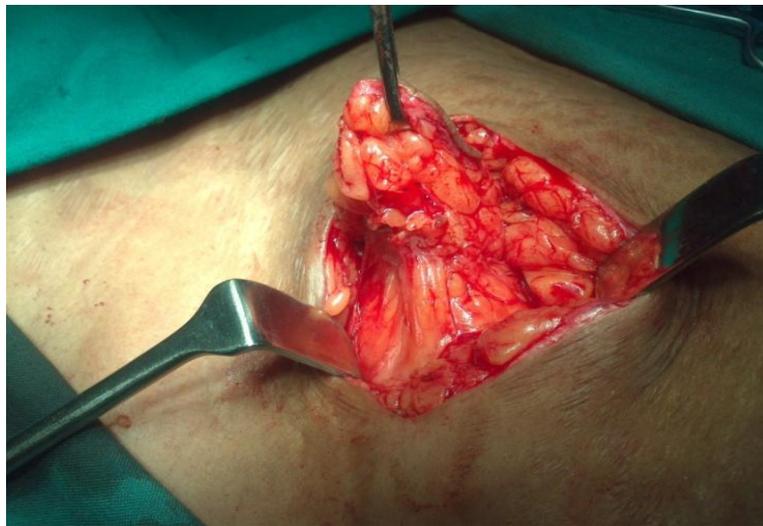


Fig.2. Per operative picture

Hence an excision was done with a margin of 1 cm. Care being taken not to expose the nodule, for fear of disseminating the infection. Wound was closed with a drain. Wound healed very well. To our dismay, discharge started coming from drain site after two months. So the treatment was continued for a total period of 9 months. Now the patient is symptom free.



Fig.3. Post operative picture

III. Discussion

Atypical mycobacteria exist in almost all habitats. They are acid-fast bacilli that do not cause tuberculosis or leprosy. There are about 110 species of atypical mycobacteria of which the Mycobacterium Avium complex is the most common.

Runyon proposed the following classification.

- Group 1 - Photochromogens (eg, *Mycobacterium kansasii*, *M marinum* (see image above), *Mycobacterium simiae*)

- Group 2 - Scotochromogens (eg, *Mycobacterium scrofulaceum*, *Mycobacterium szulgai*, *Mycobacterium gordonae*)
- Group 3 - Nonphotochromogens (eg, *Mycobacterium malmoense*, *Mycobacterium xenopi*, *M avium-intracellulare*)
- Group 4 - Fast growers (3-5 d) (eg, *Mycobacterium fortuitum*, *Mycobacterium chelonae*, *Mycobacterium abscessus*)

III.1 Predisposing conditions and factors:

Underlying factors contribute to atypical mycobacterial infections [4]

- Previously treated tuberculosis.
- Drug abuse is a risk factor for atypical mycobacteria infections.
- Anti-tumour necrosis factor therapy is another risk factor for atypical mycobacteria infections.
- Immunosuppression and tattoos continue to be situations in which mycobacterial infections can occur.

Nosocomial disease has become increasingly important; pseudo-epidemics associated with contaminated, automated endoscopic washing machines are the most recently described manifestation. *M chelonae* has been found in the colonic mucous membranes, the respiratory tracts, and as a contaminant in the tap water used for diluting concentrated chlorhexidine which is used to sterilise the instruments like laparoscopes. The organism happened to be isolated from the mucous membranes that were picked up while washing the fiberscopes that were to do colonoscopies in 6 patients. These findings suggest that *M fortuitum* and *M chelonae* groups, in spite of the fact that they rarely cause infection, have a significant risk of infecting older patients (those >60 y) in general hospitals with various underlying diseases attributable to infections. Most patients with *M kansasii* infection have some alteration of their immune status, but disseminated infection is relatively uncommon. Skin lesions due to *M chelonae* subsp *abscessus* associated with injections of lidocaine (lignocaine) given by a bioenergetician (a practitioner of alternative medicine) in Colombia have been reported.

III.2 Causes:

Exposure to contaminated water, injections, surgical procedures, and trauma has been linked to infection with atypical mycobacteria. Immunosuppression predisposes patients to infections with atypical mycobacteria [2].

In a hospital in Taiwan 12 cockroaches (*Periplaneta americana*) were found to be infected with the following organisms:

- Four with *M kansasii*
- Three with *M xenopi*
- Two with *M gordonae*
- One with *M haemophilum*
- One with *M fortuitum*
- One with *M avium*

Because cockroach infestation commonly occurs in the hospital environment, cockroaches might be implicated as a cause of hospital-acquired infections due to atypical mycobacteria.

III.3. Differential Diagnoses:

- Actinomycosis
- Cellulitis
- Coccidioidomycosis
- Cutaneous Manifestations of HIV Disease
- Erythema Induratum (Nodular Vasculitis)
- Mycobacterium avium-Intracellulare Infection
- Mycobacterium marinum Infection of the Skin
- Papulonecrotictuberculids
- Pyoderma gangrenosum
- Sarcoidosis
- Sporotrichosis
- Wegener Granulomatosis
- Yaws

III.4. Investigations:

The development of DNA fingerprinting technology, especially pulsed-field gel electrophoresis, has been suggested as a diagnostic tool. Polymerase chain reaction has been used to aid in diagnosing these

conditions. Polymerase chain reaction is a new tool in diagnosing atypical mycobacterial infections and can even be performed on tissue specimens of the standard formalin-fixed paraffin-embedded type [2, 3].

The purified protein derivative test result is usually negative in infections with atypical mycobacteria.

Although classic atypical mycobacteria infection may be indistinguishable from active tuberculosis, it is usually more indolent. The characteristic radiologic features of non-classic atypical mycobacteria infection include bronchiectasis and centrilobular nodules in the lingula and the middle lobe. In patients with acquired immunodeficiency syndrome, mediastinal or hilaradenopathy is the most common radiographic finding [2, 3].

III.5. Treatment:

A combined therapeutic approach, including surgical drainage, debridement, and prolonged (>3 months) treatment with combined antimicrobial agents, has been used in some cases of atypical mycobacteria [2, 4].

IV. Conclusion

With the expanded usage of laparoscopy, mycobacterial infection of the port site is an increasingly recognized complication, and it undermines the benefits conferred by laparoscopy. This can be controlled by implementing rigorous protocols of laparoscopic instrument sterilization and HPE of all the resected specimens to prevent endogenous infections. Such patients are optimally managed by careful meticulous complete excision of sinus tract followed by ATT.

References

- [1]. Port-site Non-tuberculous Mycobacterial Infection after LaparoscopicCholecystectomy: A Case Series StudyTAF Preventive Medicine Bulletin, 2013;12(4),TAF Prev Med Bull 2013;12(4):481-484
- [2]. Persistent port-site sinus in a patient afterlaparoscopic cholecystectomy: watch outfor gallbladder tuberculosis. Hepatobiliary Pancreat Dis Int, Vol 10, No 3 • June 15, 2011 • www.hbpdint.com
- [3]. Port site tuberculosis after laparoscopic cholecystectomy: A rare complication with review of literature. -- <http://www.ijhas.in> on Friday, May 06, 2016, IP: 223.235.32.70
- [4]. Port-Site Tuberculosis After Laparoscopy -- JAFMC Bangladesh. Vol 7, No 2 (December) 2011