

Appendicular actinomycosis: rare but curable.

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Abstract- Appendicitis is still one of the most common disease humans suffer from. Though common the pathophysiology is still not fully elucidated specially for non-acute forms of the disease. Actinomycosis of appendix is a rare form of disease which usually manifests as complicated or chronic appendiceal pathology and requires specific antibiotic therapy after diagnosis for complete cure. Here we are presenting a case report of a 25 years male patient who presented with chronic intermittent lower abdominal pain and was diagnosed of appendicitis with appendicolith for which he underwent appendectomy and post-operatively diagnosed as actinomycosis and received antibiotic therapy. Appendicitis is a common pathology that clinicians encounter and though rare actinomycosis is a well-documented cause of this. The diagnosis usually occurs in a background of complicated appendicitis and after final histopathology report. Proper antibiotic therapy post diagnosis is essential for achieving cure.

INTRODUCTION

Actinomycosis is a rare infection that is caused by gram positive, non-sporing, absolute or facultative anaerobic bacterium. Human form of disease is predominantly caused by *A. israelii* with occasionally isolated other forms being *A. naeslundii*, *odontolyticus*, *viscosus* or *meyeri* [1-3]. Human disease manifests mostly in three anatomical locations; Cervicofascial (>50%), Abdominal (20%), Thoracic (15-20%). Abdominal actinomycosis in the form of ileocaecal and appendicular disease is the most predominant form of the abdominal disease but is mostly diagnosed incidentally [1-5].

Appendectomy done for acute, recurrent or sub-acute appendicitis remains one of the most common abdominal surgeries worldwide [6]. Lifetime incidence of acute appendicitis is approximately 10% [5,7]. Presenting in the form of right inguinal fossa pain is the most common form and the differentials vary among appendicitis, colitis, mesenteric lymphadenitis, urogynecological, vascular as well as musculoskeletal pathologies making diagnosis challenging in instances.

Appendicitis caused by actinomycosis is an uncommon but well documented entity [1,5,8-10]. The pathogenesis of actinomycotic infection is not fully elucidated but few common observations are there which can be identified; perforated appendicitis, subacute appendicitis, vascular congestion, polymicrobial infection. It is postulated that prior mucosal injury leads the infection with microorganisms and colonization of actinomyces in appendix which becomes pathogenic when vascularity decreases and an anaerobic microenvironment is created at site [8,9]. Identification of this rare entity requires routine histopathological examination of all appendectomy specimens [10].

We are presenting a case of sub-acute appendicitis which was diagnosed as actinomycosis at histopathology report in the line of SCARE criteria [11].

Case Presentation

A 25 years male patient presented with recurrent right lower abdominal pain since 2 years which was associated with fever, nausea, vomiting, anorexia and occasionally with diarrhea. He presented to us in outpatient department with mild pain at presentation and without any clinical signs of acute appendicitis. Patient underwent evaluation and contrast enhanced CT (computed tomography) scan of whole abdomen with pelvis revealed sub-acute appendicitis with a mildly dilated (7.9mm) appendix with fecolith and adjacent fat stranding. He underwent an open appendectomy by Gridiron incision, intraoperatively found to be having an retrocecal appendix with shortened mesoappendix and fecolith as shown in Figure.



Postoperative period was uneventful and patient was discharged on post operative day 5. During follow up histopathology report was suggestive of Actinomycotic appendicitis with colonies showing Splender Hoeppli phenomenon, congested mucosal vessels, focal mucosal denudation and lymphoid infiltrates in submucosa. This led to the diagnosis of Actinomycotic appendicitis and patient was started on intravenous Penicillin G for 4 weeks followed by Oral Penicillin V for 3 months patient has been followed up till 3 months which was uneventful.

DISCUSSION

Non-acute appendicitis encompasses cases of appendicitis in which patients have pain beyond 1 week [12]. This constitutes only 1% of cases of appendicitis [12]. These are sub-acute, recurrent and chronic appendicitis; but remain controversial in definition [13]. Recurrent appendicitis is thought to be secondary to recurrent obstruction [13], whereas chronic is postulated of being due to partial but persistent obstruction [14].

Causes for non acute appendicitis are not properly understood and still elusive and this makes the treatment of this form of disease difficult. Frequently such patients undergo appendectomy and final histopathology reveals underlying abnormality, but in many cases the appendix may turn out to be normal. That is why it is necessary to diagnose the cause and manage accordingly to avoid improper management by appendectomy.

With the widespread availability of radiological diagnostic modalities such as ultrasonography and computed tomography (CT) scans diagnosis of appendicitis is becoming more and more specific. This reduced the incidence of appendectomy in a normal appendix. These also gives preoperative hint of the underlying causative pathology in some instances helping to make a proper management plan in both acute and non acute cases.

Post operative histopathology remains the gold standard for detecting the pathology in the resected appendix. In most cases it turns out to be acute inflammation which does not requires any other treatment than the surgery but in few instances it may detect subtle pathological changes which require additional postoperative management such as in cases with diagnosis of appendicular malignancies, tuberculosis, actinomycosis etc., hence it is necessary to subject all the appendectomy specimens to histopathological examination for getting the final diagnosis without any doubt.

Actinomycosis is a condition that can involve variety of abdominal organs such as, ileo-cecal region, appendix, colon, genitourinary system (specially in females after usage of IUCD (Intra-uterine contraceptive device)), liver, anorectum, biliary system. Perforated appendix and ileo-cecal mass are the most common among these. The diagnosis of this pathology remains mostly postoperative as preoperative clinical or radiological features are very less sensitive [1]. Preoperative diagnosis can be possible by means of radiology guided FNAC (fine needle aspiration cytology) but due to lack of sensitivity and specificity of clinical and radiological means it is difficult to select patients who might get benefited from this.

Actinomycosis of Appendix can cause recurrent appendicitis and is a condition which can be managed non operatively with antibiotic therapy if can be diagnosed properly but even if surgery is performed it requires post surgical antibiotic therapy for eradication and elimination of any cecal disease to achieve complete cure [1-3,15].

CONCLUSIONS

Actinomycosis though is a rare disease can cause abdominal disease and most commonly presents with non acute appendicitis in a background of perforated appendicitis. This disease can effectively managed with antibiotics if preoperatively diagnosed but sensitive investigations are still lacking and mostly diagnosed on histopathology after surgery which also increases the relevance of a routine performance of histopathology for appendectomy specimens. The knowledge of this condition is necessary for the treating doctor as in both the instances of pre or post operative diagnosis it is the antibiotic therapy that is required to treat the disease effectively. Diagnostic studies need to be evaluated for being able to diagnose this condition prior surgical intervention and more studies are required to formulate an effective management of Non-acute appendicitis as well as abdominal actinomycosis.

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