



Surgery

USE OF STEROIDS IN TREATMENT OF ABDOMINAL TUBERCULOSIS
TREATMENT: A CASE REPORTJayesh
Kalbhande*

Consultant Surgeon, BARC Hospital, Anushakti Nagar, Trombay, Mumbai.

*Corresponding Author

Vicky Kuldeep

Senior Resident (PGRMO), BARC Hospital, Anushakti Nagar, Trombay, Mumbai.

ABSTRACT Tuberculosis is one of the common infectious disease in India. Lungs are most common organ affected, because it being primary site of entry of organism. However almost any organ in body can be affected by tuberculosis. Abdominal tuberculosis commonly presents with Intestinal obstruction. Surgical treatment of intestinal obstruction caused by tuberculosis has inherent risk of complications such as leak from anastomosis and peritoneal sepsis which can lead to increase in morbidity and mortality. Partial Intestinal obstruction caused by tuberculosis can be treated by steroid and antitubercular treatment. This can avoid surgical treatment resulting in decreased morbidity and mortality related to surgery. In this case report we present a case of intestinal tuberculosis which presented to us with intestinal obstruction. She was treated by steroids and antitubercular treatment. It resulted in favourable outcome. We are reviewing literature of the same. Intestinal obstruction is common clinical presentation of abdominal tuberculosis. Short course of steroid with antitubercular treatment regimen may help in early resolution of symptoms as well as reduced possibility of operative treatment for intestinal obstruction.

KEYWORDS : Use Of Steroids In Abdominal Koch's, Treatment Of Abdominal TB

INTRODUCTION

Tuberculosis is one of the common infectious disease in India. Lungs are most common organ affected, because it being primary site of entry of organism. However almost any organ in body can be affected by tuberculosis. Abdominal tuberculosis commonly presents with Intestinal obstruction. Surgical treatment of intestinal obstruction caused by tuberculosis has inherent risk of complications such as leak from anastomosis and peritoneal sepsis which can lead to increase in morbidity and mortality. Partial Intestinal obstruction caused by tuberculosis can be treated by steroid and antitubercular treatment. This can avoid surgical treatment resulting in decreased morbidity and mortality related to surgery. In this case report we present a case of intestinal tuberculosis which presented to us with intestinal obstruction. She was treated by steroids and antitubercular treatment. It resulted in favourable outcome. We are reviewing literature of the same.

CASE REPORT

53 yrs old female with no co-morbidities presented with pain in abdomen since last 2 – 3 months. The pain in abdomen was colicky in nature all over the abdomen, Non radiating but aggravated with food intake. She had decreased appetite, because of which she had lost weight of 8 kg over 2 months period. She had become weak with loss of muscles and body fat. At the time of presentation she was having weight of 35 kg. She presented with severe distention of abdomen associated with colicky pain in abdomen since last one day. She had associated constipation since 1 day. However, she did not have fever, vomiting associated with pain.

On examination her pulse was 86 /min, blood pressure was 100/70 mm of Hg. She was conscious oriented. Per abdomen examination showed that abdomen was distended and there was tenderness all over abdomen. Bowel sounds were absent. However, there was no guarding and rigidity.

Her investigation was done it showed Hb 10.5 gm/dl, WBC 6650 /cmm. Serum creatinine 0.6 mg/dl, her liver function test was normal with Total bilirubin of 0.2 mg/dl, Direct bilirubin of 0.1 mg/dl and SGOT 14 U/L and SGPT 7 U/L and Serum electrolyte also showed normal finding with Serum Sodium of 139 meq/L, Serum Potassium of 3.5 meq/L and Serum Chloride of 102 meq/L. Total Protein was 5.4 gm/dl, and Total Albumin was 2.9 gm/dl. HbA1c was 5.2.

She was admitted in surgical ward. Her X ray abdomen showed multiple ileal air fluid level and there was some gas seen in colon which was suggestive of partial intestinal obstruction. She was Kept nil by mouth and IV antibiotics were given. Ryle's tube was inserted and kept on continuous Ryles tube aspirate, Ryle's tube drained around 500 ml Bilious content in first 12 hours. In view of large RT aspirate, and tenderness all over abdomen with no bowel sound, CT abdomen was advised to rule out subclinical perforation bowel. It showed left pleural

effusion with intestinal obstruction at distal ileal level - It was near total obstruction with no dye going across the obstruction. In fact Dye could not even go across duodenum in view of obstruction.

She was started on Inj. Hydrocortisone 200 mg on first day and then 100 mg once a day. She was also started on Inj. Ceftriaxone and Inj. Metronidazole. She was kept nil by mouth and Ryle's tube RT was kept continuously draining. Her RT kept on draining aspirate of 150 – 250 ml per day for next five days. She was given peripheral parenteral nutrition along with insulin drip to correct hyperglycemia cause by parenteral nutrition to improve her nutritional status.

Her Sonography of chest also showed left sided pleural effusion. Dedicated CT scan of Chest was done which showed fibrosis and infiltration in left upper lobe and left sided pleural effusion which was around 50 – 60 ml. It was highly suggestive of tubercular infection. She was started on antitubercular treatment, in view of infiltration in left upper lobe, left pleural effusion and distal ileal stricture, all three pointing towards diagnosis of tuberculosis. She did not have cough with expectoration therefore sputum for AFB could not be sent. Standard four drug antitubercular treatment was started with Rifampicin of 450 mg/day, Ethambutol 800 mg/day, Pyrazinamide 500 mg three times a day and Isoniazide 300 mg/day. Progressively over next 3 - 4 days, her abdominal girth decreased, she started passing flatus and RT aspirate came down significantly. Her RT was subsequently removed and she was started on liquid diet. On post admission day 8 she started passing motion.

At this point of time injectable hydrocortisone was converted to oral tablet prednisolone. Tablet prednisolone was started with dose of 1 mg/kg. Her weight was 36 kg at that time. So she was started on 40 mg/day. Dose of prednisolone table was tapered every third day by 5 mg. Prednisolone tablet was completely stopped at the end of 27 days period after gradually reducing the dose. On day 16 of admission, she was discharged. At the time of discharge - Her pain in abdomen was completely subsided. No vomiting was present. She was passing stools regularly every day. She had slight distention of abdomen after eating food which used to subside after 1 - 2 hours. She did not have any fever. Symptomatically she was much better and she felt that she was feeling hungry every day and eating semisolid food regularly.

Her antitubercular treatment was continued for 1 year period. At the end of one year period she was asymptomatic and was tolerating full diet. Her weight had increased from 36 Kg to 50 Kg. She was declared as cured from tuberculosis. Today, four years after completion of antitubercular treatment she remains asymptomatic.

DISCUSSION

Tuberculosis is known to affect almost all organs of human body. (1) Among all infectious diseases, tuberculosis features on the top causing maximum number of deaths since 2007. (2) As per data from WHO,

almost 10 million people fell ill because of tuberculosis in year 2018 and India accounted for whopping 27% of those cases and in India 2.8% of new cases of tuberculosis are having MDR or Rifampicin resistant tuberculosis. (2)

Intestinal strictures caused by tuberculosis are notorious for not showing resolution in spite of completion of antitubercular treatment. In a study of 106 patients with stricture of intestine caused by tuberculosis it was found that meagre one fourth of patients showed resolution of symptoms caused by stricture of intestine. (3) In a metaanalysis and systematic review of studies on use of steroid in treatment of abdominal tuberculosis, it was found that use of steroids with antitubercular treatment resulted in significantly lower number of patient requiring surgery for intestinal obstruction and lower number of patients had symptomatic stricture of intestine. (4)

Mechanism of action of corticosteroid in tuberculosis is related to decrease in host related inflammation which results in improved outcome. Corticosteroid use with antitubercular medication in treatment of tubercular meningitis and tubercular pericarditis is well established and it is associated with improved outcome. (5) There is a need for more research in use of corticosteroid in other forms of extrapulmonary tuberculosis. (5)

In one comparative study of patients with peritoneal tuberculosis, it was found that, patients treated with steroids had significantly lesser complains of pain in abdomen, lesser admission for intestinal obstruction and lesser mortality related to intestinal obstruction. The author advocated for use of steroids in cases of peritoneal tuberculosis and suggested that it may lead to reduced complication and morbidity. (6)

There are newer insights in the mechanism by which corticosteroid may benefit in a patient of tuberculosis. In one of the experimental model it was found that corticosteroid abrogated the cell death caused by mycobacterium tuberculosis. It has been found to have protective effect on decreasing cell death, which is achieved by facilitating mitogen-activated protein kinase phosphatase 1 -dependent dephosphorylation of p38 mitogen-activated protein kinase. (7) Reducing the number of cell death is likely to be main mechanism in beneficial effect in treatment of tubercular meningitis and tubercular pericarditis. Similar mechanism may help in peritoneal tuberculosis. Decreased cell death of intestinal endothelium and muscular propria will result in decreased formation of stricture. Number of studies have shown resolution of intestinal obstruction and decreased requirement of operative intervention for intestinal obstruction in patients treated with corticosteroids. (6)

Her CT chest was suggestive of tuberculosis in view of fibrosis in left upper lobe and left sided mild pleural effusion in addition distal ileal stricture, and cachexia of chronic disease was suggestive of tuberculosis. Based on these finding our patient was started on empirical antitubercular treatment based on clinical and radiological picture of tuberculosis. Uba devi et. al. in their review on abdominal tuberculosis suggested that antitubercular treatment can be started on basis of abdominal radiological finding suggestive of tuberculosis. (8) In a study of patients with abdominal tuberculosis, out of total of 141 patients presenting with a clinical and/or radiological picture of abdominal tuberculosis 34 patients had confirmed diagnosis, remaining 107 patients were treated empirically and they had probable diagnosis of abdominal tuberculosis. (9) many times abdominal tuberculosis is associated with pulmonary tuberculosis as seen in our case. It was found that approximately 15 – 20% of abdominal tuberculosis cases are associated with pulmonary tuberculosis. (10)

In a metaanalysis conducted to evaluate efficacy of 6 month Antitubercular with that of 9 month antitubercular treatment, it was found that six month treatment was probably adequate in treating abdominal and intestinal tuberculosis. However, author suggested that they had low confidence in relapse rate after 6 months of regimen because of size of trials suggesting need of more studies before 6 months regimen could be considered as adequate treatment for cure of abdominal tuberculosis. (11) RNTCP mentions duration of antitubercular treatment as 6 months, however it has been observed that many clinicians extend the antitubercular treatment regimen 9 to 12 months based on clinical response. (12) Our patient received 12 months of antitubercular regimen.

India 2.8% of new cases of tuberculosis are having MDR or

Rifampicin resistant tuberculosis. In view of rising number of cases of drug resistant tuberculosis it is necessary to obtain bacteriological diagnosis and test for tuberculosis and culture sensitivity in each and every case of newly diagnosed tuberculosis. However, in our case patient had presented in critical condition with cachexia caused by chronic disease and intestinal obstruction further adding to already compromised nutritional status. Any surgical intervention in this, there was increased chances of morbidity and mortality. In view of same conservative medical management was adopted in this case. It has resulted in very good outcome.

CONCLUSION

Intestinal obstruction is common clinical presentation of abdominal tuberculosis. Short course of steroid with antitubercular treatment regimen may help in early resolution of symptoms as well as reduced possibility of operative treatment for intestinal obstruction.

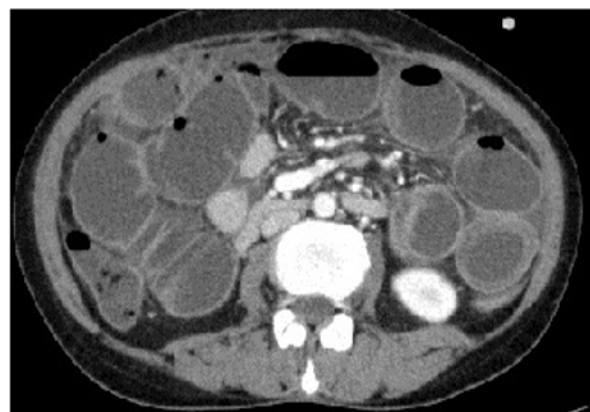


Figure 1: CT scan Image showing dilated bowel loops as a part of intestinal obstruction

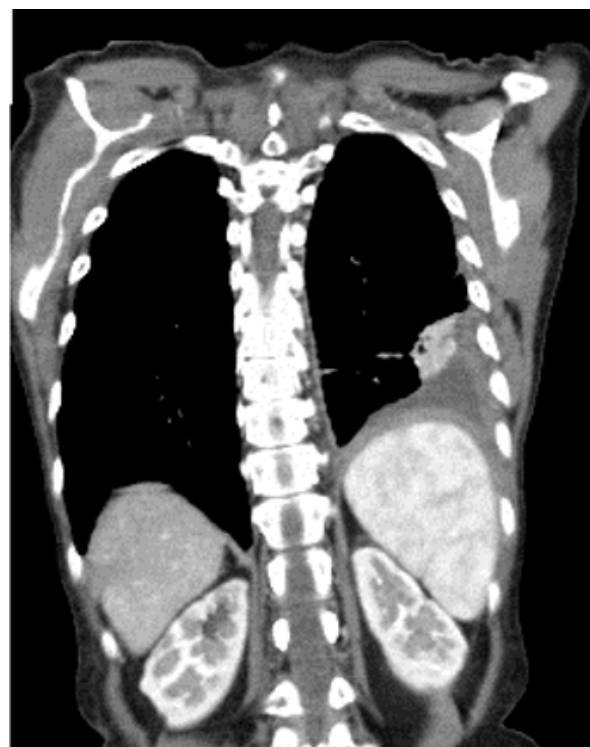


Figure 2: Chest CT scan showing left pleural effusion

REFERENCES

1. Rosado E, Penha D, Paixao P, Costa AMD, Amadora PT. Abdominal tuberculosis - Imaging findings. Educational exhibit; ECR. 2013;C-0549.
2. World Health Organisation, Global tuberculosis report 2019, Geneva: doi:10.1007/s10620-017-4727-3
3. Aggarwal P, Kedia S, Sharma R, et al. Tubercular Intestinal Strictures Show a Poor Response to Anti-Tuberculous Therapy. Dig Dis Sci. 2017;62(10):2847-2856. doi:10.1007/s10620-017-4727-3
4. Soni H, Bellam BL, Rao RK, et al. Use of steroids for abdominal tuberculosis: a systematic review and meta-analysis. Infection. 2019;47(3):387-394. doi:10.1007/s15010-018-1235-0

5. T. Kadiravan, S. Deepanjali, Role of Corticosteroids in the Treatment of Tuberculosis: An Evidence-based Update, The Indian Journal of Chest Diseases & Allied Sciences, 2010; Vol.52, 153-158
6. Abdulrahman A. Alrajhi, Magid A et. al. Corticosteroid Treatment of Peritoneal Tuberculosis, Clinical Infectious Diseases 1998; 27:52–6
7. Gräß, J., Suárez, I., van Gumpel, E. et al. Corticosteroids inhibit Mycobacterium tuberculosis-induced necrotic host cell death by abrogating mitochondrial membrane permeability transition. Nat Commun 10, 688 (2019). <https://doi.org/10.1038/s41467-019-08405-9>
8. Debi U, Ravisankar V, Prasad KK, Sinha SK, Sharma AK. Abdominal tuberculosis of the gastrointestinal tract: revisited. World J Gastroenterol. 2014;20(40):14831-14840. doi:10.3748/wjg.v20.i40.14831
9. Dawra S, Mandavdhare HS, Singh H, Prasad KK, Dutta U, Sharma V. Extra-abdominal involvement is associated with antitubercular therapy-related hepatitis in patients treated for abdominal tuberculosis. Clin Exp Hepatol. 2019;5(1):60-64. doi:10.5114/ceh.2019.83158
10. Akhan O, Pringot J. Imaging of abdominal tuberculosis. Eur Radiol. 2002;12:312–323.
11. Jullien S, Jain S, Ryan H, Ahuja V. Six-month therapy for abdominal tuberculosis. Cochrane Database Syst Rev. 2016;11(11):CD012163. Published 2016 Nov 1. doi:10.1002/14651858.CD012163.pub2
12. Horvath KD, Whelan RL. Intestinal tuberculosis: return of an old disease. Am J Gastroenterol. 1998;93:692–696. [PubMed] [Google Scholar]