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Unusual extra intestinal manifestation of an obligatory pathogen

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Abstract
Fever producing microbes have varied clinical presentations with variable positive lab investigations which serve as an eye opener to the clinician as well as to the clinical lab managers. Case report: 30 year old male with irregular fever of 1 year duration was investigated and treated outside but not relieved of the symptom. The next year he visited our hospital with the same symptom of fever and was investigated. The investigation revealed a totally different arena and helped the patient to get cured of the illness.

Keywords: Clinical Presentation, Extra Intestinal Manifestation, Enterobacteriacea, Fever, Lab diagnosis.

1. Introduction
Fever producing microorganisms are omnipresent and colonize animals and human beings. Many clinical infections have varied presentations and majority present initially with the rise in temperature which on investigation gives rise to a totally different diagnosis.
Here we present a case, which was an eye opener to a varying clinical scenario.

2. Case Report
30 year old male had history of fever on and off with head ache from Jan-2014. He was diagnosed to have enteric fever and treated elsewhere. After 6 months the symptoms recurred and he was further investigated and everything was non-contributory except ultra sound which revealed hepatomegaly. Again he was treated outside.
In December 2014, when he visited our hospital, he had fever and was investigated again.

3. Results
His CBC was within normal limits, Widal test TO-1:320, TH- 1:320, in blood culture *Salmonella typhi* was isolated. It was sensitive to Ceftriaxzone, Cefotaxime and Imipenem, resistant to ciprofloxacin and ampicillin.
Patient was started on cefotaxime, after which the patient's fever subsided. But patient came back with the complaint of becoming breathless on exertion like playing, climbing staircase etc after a week.
Patient was hospitalised and investigated again.
X-ray chest (Fig: 1) and CT scan (Fig: 2) revealed pleural effusion. Pleural fluid was negative for malignant cells. Glucose 28mg/dL, Protein 5.7g/dL, chloride 144mM/L.
This complication should have been precipitated due to the improper drug intake of the patient. Therefore we hospitalized the patient.
CT scan showed mild pneumonitis in posterior basal segment on lower lobe right side. Mild to moderate left sided pleural effusion with minimal inter lobar effusion.
PFT: Table: 1
Pleural aspiration was done under strict aseptic precaution and the pleural fluid was analysed. Gram stain showed the presence of occasional pus cells and gram negative bacilli. The sample was also subjected for culture which after 48 hours of incubation grew *Salmonella typhi* with same susceptibility pattern as the blood culture.

Table 1: Interpretation of PFT

PFT	Pre-medication	Post-medication
FVC	2.01	2.04
FEV1	1.82	1.85
FEV 1% FVC	90.88	90.62

1. Pre- medication: slight expiratory flow limitation. Moderate to highly distinctive restrictive shape of curve
2. Post-medication: Moderate to highly distinctive restrictive shape of curve

Patient was treated with IV fluids, antibiotic Cefotaxime for 10days. Patient was asymptomatic at the time of discharge.

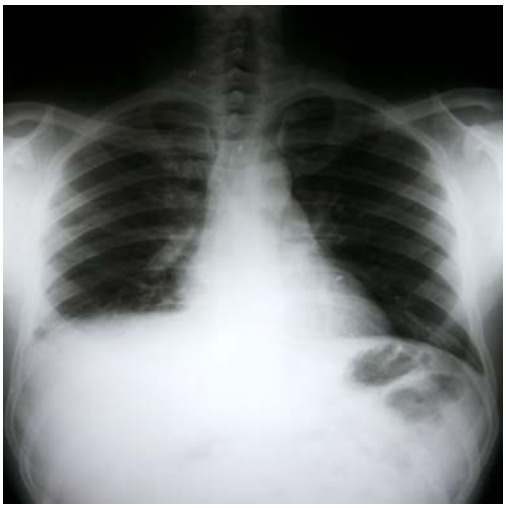

Fig 1: X-ray chest showing Pneumonitis and Pleural effusion

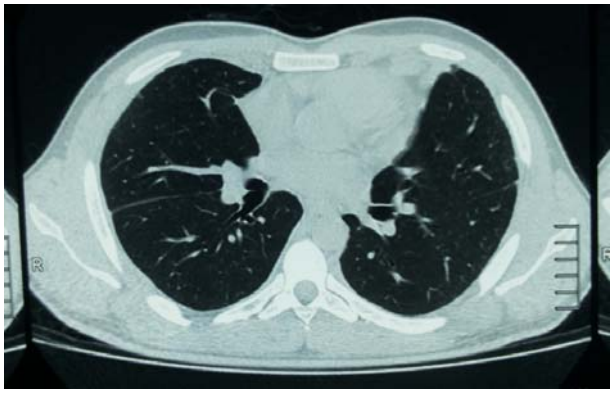

Fig 2: CT Scan chest

4. Discussion

Fever is a common clinical presentation with varying pathogenic causes, in which bacterial aetiology is an important contributing factor. *Salmonella* infection has 4 clinical presentations such as gastroenteritis, bacteraemia/ septicaemia, enteric fever, carrier state [1]. Each one of the clinical infection has its own characteristic which has to be handled as per the clinical features and diagnostic laboratory reports.

Our patient who had enteric fever for almost a year did not have any proper documents to confirm the presence of enteric fever. When he visited our hospital, a tertiary care centre, he presented again with fever and was investigated thoroughly which confirmed the presence of enteric fever with positive blood culture and Widal test.

We present this paper for the association Extra Intestinal Manifestation of the Important Enterobacteriaceae Member '*Salmonella*'. Further investigation of X-ray chest and CT Lung was an eye opener as it showed the presence of left sided pleural effusion and right sided pneumonitis.

This is a rare presentation of *Salmonella* and it is notorious for persistent infection getting colonised on endothelial surfaces such as aorta and major blood vessel [2] through which multiple organs gets involved through systemic circulation [3].

This virulent gram negative bacilli though gets colonised in small intestine can lead to extra intestinal manifestation [4] like myocarditis, pancarditis, pleural effusion and breast abscess [5]. Of this extra intestinal manifestation 10% develop serious complication [4].

Therefore a varied presentation in a common clinical infectious disease, presenting only with fever, requires a complete, thorough clinical examination coupled with cost effective, rationale diagnostic lab investigation which will clinch the diagnosis, which is utmost important for the patient care and management, as proved by our study.

5. Conclusion

Extra intestinal manifestation of Enterobacteriaceae member can be complicated, confusing but as a prudent clinician, the awareness and appropriate investigation procedure will lead to final and correct diagnosis.

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