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A TYPICAL VIRAL PNEUMONIA MASQUERADING AS A TROPICAL ILLNESS

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ABSTRACT

We present a case of a 1 4-year-old female from Mumbai who was referred to Tirunelveli Medical College and Hospital (TVMCH) with a 1 4-day history of high-grade intermittent fever, followed by progressive breathlessness and non-productive cough. Initial investigations revealed thrombocytopenia, anaemia, and lymphocytosis. CT chest demonstrated bilateral pleural effusion and multifocal patchy air-space opacities consistent with atypical/viral pneumonia (Jain et al., 201 5; Mandell et al., 2007). CT abdomen showed mild ascites and gallbladder wall oedema. Serological workup was negative for dengue, leptospirosis, and scrub typhus; Widal test showed raised titres for Salmonella typhi (Wain et al., 201 5). The patient was managed with supportive care including oxygen therapy, IV fluids, antibiotics, and blood product transfusions, with gradual clinical and haematological improvement. This case highlights the diagnostic challenges posed by prolonged fever with multisystem involvement in a paediatric patient and underscores the importance of systematic evaluation and timely imaging.

KEYWORDS: Prolonged Fever Atpical Pneumonia Paediatric Typhoid Fever.

INTRODUCTION

Fever persisting for more than 7 to 1 4 days in the paediatric population represents a significant diagnostic and management challenge (Chow & Robinson, 2011). While common causes include bacterial infections such as typhoid fever and viral illnesses, the differential diagnosis is broad and must include atypical pneumonias, dengue fever, leptospirosis, scrub typhus, and systemic inflammatory conditions (Bhatt et al., 2018). Atypical pneumonia, caused by organisms such as Mycoplasma chlamydia Pneumoniea and various viral agents, may present with non-specificsystemic features including prolonged fever, haematological abnormalities, and progressive respiratory compromise (Atkinson et al., 2008; Loens & Ieven, 2016). The presence of concurrent thrombocytopenia and anaemia adds further complexity, necessitating a thorough evaluation to exclude haematological and infectious aetiologies (Krishnamurti, 2011).

We report a case of a 1 4-year-old girl who presented with prolonged fever complicated by acute respiratory distress, bilateral pleural effusion, and multisystem involvement, ultimately diagnosed with atypical/viral pneumonia.

CASE PRESENTATION

Chief Complaints

- Fever for 1 4 days — high-grade, intermittent, associated with chills and rigors
- Non-productive cough for 3 days — no postural or diurnal variation
- Breathlessness at rest for 3 days — acute onset, progressive, MMRC Grade 4.

History of Presenting Illness

A 1 4-year-old female, a resident of Mumbai, travelled to Tirunelveli for holidays and was referred from a private hospital to TVMCH. She presented with a 1 4-day history of high-grade intermittent fever associated with

chills and rigors, without a significant periodicity. There was no associated nausea, vomiting, night sweats, or loss of weight. Three days prior to admission she developed acute-onset progressive breathlessness at rest (MMRC Grade 4), accompanied by a non-productive cough. There was no haemoptysis, chest pain, wheeze, or symptoms suggesting urinary tract, joint, neurological, or gastrointestinal involvement. She denied haematuria, jaundice, altered sensorium, or loss of appetite.

One week prior to this presentation, she had received two units of packed red blood cells (PRBCs) and one unit of platelets at a private hospital. She had no prior history of hypertension, seizures, bronchial asthma, pulmonary tuberculosis, thyroid disorders, or diabetes mellitus. There was no history of previous surgeries or similar illness.

Personal, Menstrual, and Family History.

The patient had a normal sleep pattern and regular bowel and bladder habits. She consumed a mixed diet. Her menstrual cycles were regular (4/28 days), with her last menstrual period 3 days prior to presentation and no dysmenorrhoea or passage of clots. There was no family history of similar illness.

General Examination

On examination, the patient was conscious and oriented. She was febrile (1 02.4°F), pale, dyspnoeic and tachypnoeic at rest. There was no icterus, pedal oedema, cyanosis, or clubbing. No regional or generalised lymphadenopathy was detected. Importantly, there was no evidence of an eschar anywhere on the body.

Vital Signs.

Parameter	Value
Blood Pressure	1 00/60 mmHg (left arm, sitting)
Pulse Rate	92/min, regular rhythm, normal volume and character
Respiratory Rate	32/min
SpO_2 (Room Air)	93%
SpO_2 (4L O_2)	97%
Temperature	1 02.4°F (39.1 °C)

Respiratory System Examination

Examination of the upper respiratory tract revealed fair oral hygiene, midline nasal septum, no nasal polyp, no postnasal drip, and normal posterior pharyngeal wall without sinus tenderness.

Inspection of the chest revealed the trachea in the midline, symmetrical chest wall movements, and no intercostal fullness, indrawing, crowding of ribs, chest wall deformity, or abnormal pulsations. The apexbeat was not visible.

On palpation, the trachea was confirmed in the midline. The apex beat was felt in the left 5th intercostal space at the midclavicular line. Tactile fremitus was decreased bilaterally in the infrascapular and infraaxillary areas. Chest expansion measured 5 cm (inspiration 1 05 cm; expiration 1 00 cm). Chest diameters: AP 20 cm; transverse 32 cm (ratio 4:6).

Percussion revealed bilateral dullness in the infraaxillary and infrascapular areas, with resonance preserved in all other zones.

Auscultation demonstrated diminished breath sounds with fine inspiratory crepitations bilaterally in the infraaxillary and infrascapular areas. Normal vesicular breath sounds were heard in all other areas. Vocal resonance was reduced in the same bilateral basal regions.

INVESTIGATIONS

Haematological Parameters (Serial)

Outside hospital (1 9–22 July)

Parameter	**Value**
Total WBC Count (cells/mm³)	5,900
Neutrophils (%)	31
Lymphocytes (%)	61
Haemoglobin (g/dL)	7.2
RBC Count (millions/mm³)	2.80

Parameter	**Value**
Haematocrit (%)	23. 1
MCV (fL)	78. 8
Platelet Count (/mm³)	23,000

On admission (26 July)

Parameter	28/7 (a)	28/7 (b)	29/7
Total WBC Count (cells/mm³)	7,000	6,500	1 0,200
Haemoglobin (g/dL)	6.6	6.5	8.6
Platelet Count (/mm³)	1 ,08,000	1 ,45,000	2,42,000
RBC Count (millions/mm³)	1 .98	1 .72	2.75

Post-treatment (28–29 July)

Parameter	19/7	20/7
Random Blood Sugar (mg/dL)	86	98
Serum Urea (mg/dL)	32	31
Serum Creatinine (mg/dL)	0.9	1 .1
Serum Sodium (mEq/L)	1 39	1 42
Serum Potassium (mEq/L)	4.1	4.3

Biochemical Parameters

Bilirubin	19/7	22/7	24/7
Total (mg/dL)	1 .3	2.8	1 .8
Direct (mg/dL)	0.3	1 .1	0.4
Indirect (mg/dL)	1 .0	1 .7	1 .2

Liver Function (27–28 July)	27/7	28/7
SGOT / SGPT (U/L)	42 / 20	43 / 32
ALP (U/L)	74	75
Total Protein (g/dL)	5.0	5.1
Albumin (g/dL)	2.5	2.6
Globulin (g/dL)	2.5	2.5

Coagulation Profile (1 9/7)

Test	Result
Prothrombin Time — PT (seconds)	17
INR	1.3
aPTT (seconds)	31

Inflammatory Markers (26/7)

Parameter	Value
ESR	1 00 mm/hr
Absolute Eosinophil Count (AEC)	1 00 cells/mm³
C-Reactive Protein (CRP)	28. 8 mg/L

Arterial Blood Gas Analysis (26/7)

Parameter	Value	Reference Range
pH	7.35	7.35–7.45
pCO_2 (mmHg)	36	35–45
pO_2 (mmHg)	98	80–1 00
HCO_3^- (mEq/L)	1 6. 9	22–26
Lactate (mmol/L)	2.6	0.5–2.2

Urine Routine

Urine routine examination (20/7 and 26/7) showed colour pale yellow, clear appearance, albumin nil, sugar nil, 1 –3 pus cells, 2–4 epithelial cells, no casts or crystals. Urine albumin-to-creatinine ratio (ACR) was 1 01 mg/g, indicating microalbuminuria.

Peripheral Blood Smear (28/7)

The peripheral smear showed normocytic normochromic red blood cells, a normal white cell count with a relative increase in the percentage of mature lymphocytes, and adequate platelets. Impression: relative lymphocytosis (Perkins, 2009).

Serological and Microbiological Tests

Test	Date	Result
Dengue NS1 Antigen (Card test)	22/7	Negative
Dengue IgM	22/7	Negative
Dengue IgG	22/7	Negative
Widal — Salmonella typhi O	22/7	1 :80
Widal — Salmonella typhi H	22/7	1 :1 60
Widal — Salmonella paratyphi AH	22/7	1 :80
Widal — Salmonella paratyphi BH	22/7	1 :80
IgM Leptospira	22/7	Negative
IgM Scrub Typhus	22/7	Negative
Sputum Culture & Sensitivity	22/7	No growth

Ultrasound Abdomen
Liver, gallbladder, and pancreas were normal. Mild splenomegaly was noted (spleen 1 2 cm). Both kidneys were normal in size and echogenicity. Impression: mild splenomegaly.

Chest X-Ray
Chest radiograph demonstrated bilateral lower zone haziness consistent with pleural effusions and/or consolidation.

CT Chest — Day 9 of Illness
CT chest revealed bilateral pleural effusion (right greater than left) and multifocal patchy air-space opacities in bilateral lung fields, predominantly involving the upper lobes. Impression: atypical/viral pneumonia with bilateral pleural effusion (Reittner et al., 2000).

CT Abdomen
CT abdomen showed mild gallbladder wall oedema and mild ascites. Impression: viral fever sequelae.

CT Chest — Day 1 5 of Illness
Follow-up CT chest on day 1 5 demonstrated interval improvement in bilateral opacities and partial resolution of pleural effusions following initiation of treatment.

ECG
ECG was within normal limits with no significant arrhythmia or conduction abnormality.

Management
The patient was admitted and managed with the following measures

- Supplemental oxygen therapy (4 litres/min via nasal cannula to maintain $SpO_2 \geq 95\%$)
- Intravenous fluids for haemodynamic support
- Empirical broad-spectrum antibiotics with atypical organism cover
- Blood product transfusions: packed red blood cells (PRBCs) and platelets
- Close serial monitoring of haematological, renal, and hepatic parameters

Serial haematological monitoring demonstrated progressive improvement in haemoglobin (7.2 g/dL on admission to 8.6 g/dL by 29/7) and a marked recovery of platelet count from a nadir of 23,000/mm³ to 2,42,000/mm³. Leucocyte count normalised and relative lymphocytosis resolved. Bilirubin trended downward after peaking at 2.8 mg/dL on 22/7. Renal function remained stable throughout the admission (WHO, 201 3).

DISCUSSION
This case illustrates the diagnostic complexity of prolonged fever with multisystem involvement in a paediatric patient. The differential diagnosis at presentation encompassed typhoid fever, viral pneumonias (influenza, parainfluenza, adenovirus, Epstein-Barr virus), dengue fever, leptospirosis, scrub typhus, and atypical bacterial pneumonias (Chow & Robinson, 2011; Bhatt et al., 2018).

The haematological triad of progressive normocytic normochromic anaemia, thrombocytopenia, and relative lymphocytosis is well recognised in viral and atypical infections (Krishnamurti, 201 1; Perkins, 2009). Dengue fever, while classically producing this picture, was effectively excluded by the negative serological panel (NS1 antigen, IgM, and IgG) and the protracted febrile course atypical of dengue (Bhatt et al., 2012).

The elevated Widal titres (salmonella typhi H 1 :1 60; O 1 :80) raise the possibility of enteric fever or prior exposure; however, single-point Widal titres carry low specificity in endemic regions and must be interpreted cautiously (Wain et al., 201 5; Parry et al., 2002). The absence of gastrointestinal symptoms and the predominance of respiratory features argue against classical enteric fever.

The CT chest pattern of bilateral multifocal patchy air-space opacities with a predilection for the upper lobes and bilateral pleural effusions is characteristic of atypical/viral pneumonia, distinguishable from the lobar consolidation of typical bacterial pneumonia (Reittner et al., 2000; Mandell et al., 2007). Mycoplasma pneumonia and viral aetiologies (including EBV) are consistent with this radiological pattern (Atkinson et al., 2008; Loens & Ieven, 2016).

The findings of mild splenomegaly, gallbladder wall oedema, and mild ascites on CT abdomen further support a systemic viral aetiology. Such findings are well

documented in infectious mononucleosis (EBV), dengue, and other viral illnesses (Cohen, 2000; Bhatt et al., 2012).

The mildly elevated serum lactate (2.6 mmol/L) in the context of compensated metabolic acidosis on ABG likely reflects early tissue hypoperfusion attributable to anaemia and hypoxia rather than overt septic shock. Elevated CRP (28.8 mg/L) and ESR (1 00 mm/hr) corroborate active systemic inflammation (Mikkelsen et al., 2009).

Gradual clinical and haematological recovery following empirical antibiotics with atypical cover, oxygen therapy, IV fluids, and blood product transfusions is consistent with published management guidelines for community-acquired atypical pneumonia (Jain et al., 201 5; WHO, 2013).

Key learning points from this case: (1) prolonged fever with respiratory distress in a paediatric patient warrants early CT imaging to characterise the pattern of pulmonary involvement (Reittner et al., 2000); (2) thrombocytopenia with lymphocytosis in a febrile child necessitates a broad serological workup to exclude dengue, leptospirosis, and scrub typhus (Krishnamurti, 201 1); (3) atypical/viral pneumonia may coexist with or mimic tropical febrile illnesses (Bhatt et al., 201 8); and (4) empirical antibiotic cover for atypical organisms is warranted when radiological features are suggestive (Atkinson et al., 2008).

CONCLUSION

This case of a 1 4-year-old female presenting with prolonged high-grade fever, progressive respiratory distress, thrombocytopenia, and normocytic normochromic anaemia, ultimately diagnosed with atypical/viral pneumonia complicated by bilateral pleural effusion and multisystem involvement, was managed successfully with supportive care, oxygen therapy, empirical antibiotics, and blood product transfusions. It underscores the importance of systematic clinical evaluation, timely cross-sectional imaging, and a comprehensive serological workup in paediatric patients presenting with prolonged fever in a tropical setting.

DECLARATIONS

Patient Consent: Written informed consent was obtained from the patient's guardian for publication of this case report.

Conflicts of Interest: The authors declare no conflicts of interest.

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