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Case Study
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Case Report: 19 Months Old with ITP

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Abstract

We describe 19 months child with Immune Thrombocytopenic Purpura (ITP), review its common features, clinical course and management.

Case Presentation

The infant had red spots 1 day prior to presentation. She was brought to the hospital because of bleeding spot on the tongue and nosebleed. There was no blood in her urine or stool. She was playful and in no acute distress. There was no headache, lethargy, vomiting nor seizures. The rash was preceded with fever 6 days ago (Tmax 39). Fever lasted 1 day and subsided. No other symptoms.

The infant was naturally born at term and weighed 3.1 kg. She had no prenatal or postnatal complications. All her immunizations were up to date with the MMR given 45 days prior to her illness. Her growth and development were normal. She had no allergies and negative family history.

Physical Examination

Weight 11.5 kg (75th percentile), Height 85 cm (90th percentile), Head circumference 46.2 cm (50th percentile).

Vital signs

Temperature 36.5, Pulse 110 beats/min, RR 28 beats/min, SPO2 98%, Blood pressure 97/60 mmHg.

General appearance

Well nourished toddler, Petechial rash over the whole body (trunk, arms, legs and face) and 10 bruises on the legs.

HEENT

Normal head shape, fontanels are closed, no vein distension, pupils are equal round and reacting to light, congestive nasal mucus, bleeding spot on the tongue, petechiae on oral mucus, no enlarged tonsillar or lymph nodes.

Neurological system

Alert, supple neck, no neck stiffness, normal tendon reflexes, normal muscle tone.

Respiratory system

Symmetric chest movement, normal breath sounds, no respiratory distress.

Cardiovascular system

Regular heart beat and no murmurs, central and peripheral capillary refills <2 seconds.

Digestive system

Soft abdomen, no tenderness, normal bowel sounds, no hepatosplenomegaly.

Renal system

No renal angle tenderness.

Extremities

Petechiae on extremities, 10 bruises on lower legs.

Differential Diagnoses

- Bone marrow failure syndromes
- Systemic autoimmune disease

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- Hemolytic-uremic syndrome
- Evans syndrome
- Immunodeficiency syndromes
- Leukemia
- DIC
- Inherited disorder causing thrombocytopenia

Investigations

CBC+CRP

WBC 8.2 × 10^9/L (6.0 to 11.0 × 10^9/L), Lymphocytes: 56.9% (40% to 60%), Monocyte: 5.5% (2% to 10%), Neutrophil: 35.9% (30% to 55%), Eosinophil: 1.3% (0% to 5%), Basophil: 0.4% (0% to 2%), RBC 4.73 × 10^{12}/L (3.7 to 6.0 × 10^{12}/L), Hemoglobin: 130 g/L (105 g/L to 135 g/L), HCT: 0.366 L/L (0.33 L/L to 0.4 L/L), MCV: 77.4 fl (74.0 fl to 89.0 fl), MCH: 27.5 pg (26.0 pg to 34.0 pg), MCHC: 355 g/L (315 g/L to 365 g/L), RDW: 12.8% (11% to 15%). PLT count: 0, Manual count revised slide: 0, CRP: <8 mg/L (0 mg/L to 10 mg/L).

Stool tests

Occult blood negative, No WBC, No RBC

Urinalysis

Leu+: +, NIT-p: Negative, PH 8.0 (5.0 to 8.0), SG: 1.005 (1.003 to 1.030), Epithelial cell: 0/hpf, WBC: 0 to 3/hpf (0 to 4/hpf), RBC: 0/hpf, LEU: 25/ul, Protein: negative. GLU: negative, KET: negative, BIL: negative, ERY: negative.

ALT

ALT: 18 U/L (7 U/L to 35 U/L).

Coombs tests

Coombs tests: Negative.

CBC+CRP (1 day later)

WBC: 7.8 × 10^9/L (6.0 × 10^9/L to 11.0 × 10^9/L), Lymphocytes: 22.8%. (40% to 60%), Monocyte: 1.5% (2% to 10%), Neutrophil: 75.3% (30% to 55%), Eosinophil: 0.1% (0% to 5%), Basophil: 0.3% (0% to 2%), RBC: 4.65 × 10^{12}/L (3.7 to 6.0 × 10^{12}/L), Hemoglobin: 125 g/L (105 g/L to 135 g/L), HCT: 0.355 L/L (0.33 L/L to 0.4 L/L), MCV: 76.3 fl (74.0 fl to 89.0 fl), MCH: 26.9 pg (26.0 pg to 34.0 pg), MCHC: 352 g/L (315 g/L to 365 g/L), RDW: 12.2% (11% to 15%), CRP<8 mg/L (0 mg/L to 10 mg/L), PLT count: 14 × 10^9/L (100 × 10^9/L to 400 × 10^9/L).

Blood smear

Platelet: 20 × 10^9/L, normal platelet.

Diagnosis

Immune thrombocytopenic purpura.

Management and Progress

- Admission
- Bed rest
- Soft diet
- Monitor vital signs, urine and stool.
- IVIG 11.5 g (1 gram per kg) IV Once
- IV Methylprednisolone 34.5 mg (3 mg per Kg) Once daily × 3 days. Steroid stopped before discharge.

DB was managed as above at the children's ward and her symptoms improved in 3 days. Platelet improved to 14 × 10^9/L. During treatment: no gastrointestinal bleeding, no intra cerebral hemorrhage, Petechiae resolved, only some Petechiae remained on legs and few on back. She was discharged after 3 days of hospitalization. Discharge date platelet was 89 × 10^9/L. She was discharged on no medications. She followed up in one week at which time her platelets count was 254 × 10^9/L. Platelet count was 276 × 10^9/L (5 months after treatment), 327 × 10^9/L (one year after treatment). No recurrence of her ITP in 2 years.

Discussion

ITP is a common cause of symptomatic thrombocytopenia in children which can present at any age (peak 2 to 10 years [1]). The child is often previously healthy. ITP is often triggered by a viral infection or vaccine within 2 to 4 weeks of presentation [2]. This ITP case happened in a 19 months old healthy toddler who had viral infection and vaccine before ITP. Her ITP most likely triggered by viral infection since the MMR vaccine was given more than a month prior to the onset.

Primary ITP may be caused by autoimmune mechanisms. Platelet destruction is due to antibody-mediated mechanism. But anti platelets antibodies are not found in 50% of patients with ITP and do not correlate with clinical outcome [3]. It is not necessary to do anti platelet antibodies tests for ITP's diagnosis.

ITP typically presents with petechial rash, bruise and with platelets count <100 × 10-12. Our patient although is a typical ITP case, she presented with zero platelets and no significant clinical bleeding. She also dramatically responded to IVIG and steroids and had no relapse afterwards.

ITP management includes restrict activity because low platelet has a risk of bleeding from traumatic injury especially when platelets are <20 × 10-12. We also need to avoid anti platelet medications and anticoagulants and careful monitoring for signs of bleeding. The treatment for ITP depends on severity of bleeding symptoms, platelet count and risk factors. If the patient has life-threatening bleeding, platelet transfusions, methylprednisolone and IVIG combination should be considered. However, for moderate to high risk bleeding patient, IVIG and/or methylprednisolone are first-line treatment. Platelet transfusion is usually not necessary and might be harmful. For platelet >30 × 10^9, mild bleeding, and low risk, then clinical observation is sufficient. The goal of medication treatment is to increase the platelet count to avoid serious bleeding. Target platelet count is 20000/microL to 30000/microL in most cases. ITP is a benign disease and most patient respond well to treatment. Few patients may suffer recurrent thrombocytopenia.

Conclusion

Our case though typical of ITP patients, she presented with zero platelets, no serious bleeding and dramatically responded to treatment and suffered no recurrences. ITP diagnosis is usually clinical and we need to avoid unnecessary tests.

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