

A 2 and a half-year-old child is brought to the office for the evaluation of easy bruising, nosebleeds, and decreased activity over the past week. He had an upper respiratory infection that was treated with an antibiotic 2 weeks ago. On examination, he is well-developed, seems well-nourished, anicteric, and pale. Pertinent findings include some small palpable posterior cervical lymph nodes, sinus tachycardia, a grade I/VI systolic ejection murmur, ecchymoses on his left shoulder and both lower extremities, and petechiae over his extremities and groin. There is no hepatosplenomegaly. The laboratory findings are as follows:

| | |
|--------------------|------------------------|
| Hemoglobin | 7.9 g/dL |
| Hematocrit | 24% |
| Platelet count | 12,000/mm ³ |
| WBC | 3,000/mm ³ |
| Reticulocyte count | 0.5% |

A bone marrow biopsy reveal a markedly hypocellular marrow with decreased megakaryocytes and precursors of the erythroid and myeloid cell lines. What is the most likely diagnosis?

- ☐ A. Acquired aplastic anemia
- ☐ B. Fanconi's anemia
- ☐ C. Diamond-Blackfan anemia
- ☐ D. Transient erythroblastopenia
- ☐ E. Acute myeloid leukemia

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- ☒ A. Acquired aplastic anemia [73%]
- ☐ B. Fanconi's anemia [11%]
- ☐ C. Diamond-Blackfan anemia [6%]
- ☐ D. Transient erythroblastopenia [3%]
- ☐ E. Acute myeloid leukemia [6%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

Acquired aplastic anemia results from an injury to the bone marrow by radiation, drugs (chemotherapy or antibiotics such as chloramphenicol), insecticides, toxins (benzene, carbon tetrachloride), or infections. Signs and symptoms include pallor, fatigue, weakness, loss of appetite, easy bruising, petechiae, mucosal hemorrhage, and fever. Laboratory evaluation demonstrates a normocytic or macrocytic anemia, leukopenia, reticulocytopenia, and thrombocytopenia. A bone marrow biopsy is essential to make the diagnosis; it typically shows profound hypocellularity with a decrease in all cell lines and fatty infiltration of the marrow.

(Choice B) Classically, patients with Fanconi's anemia have pancytopenia and

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(Choice B) Classically, patients with Fanconi's anemia have pancytopenia and characteristic congenital anomalies, such as hyperpigmentation on the trunk, neck and intertriginous areas and/or cafe-au-lait spots, short stature, upper limb abnormalities, hypogonadism, skeletal anomalies, eye or eyelid changes, and renal malformations. Blood counts start to decrease between 4 and 12 years of age, and the initial manifestation is usually thrombocytopenia, followed by neutropenia, then anemia.

(Choice C) Diamond-Blackfan anemia (DBA), or congenital pure red cell aplasia, presents in the first 3 months of life with pallor and poor feeding. CBC reveals a normocytic or macrocytic anemia with reticulocytopenia. WBC and platelet counts are normal.

(Choice D) Transient erythroblastopenia of childhood (TEC) is an acquired red cell aplasia which occurs in healthy children between 6 months and 5 years old. There is a gradual onset of symptoms such as pallor and decreased activity. The physical examination is unremarkable except for pallor and tachycardia. The typical laboratory findings are normocytic normochromic anemia, with hemoglobin levels ranging from 3 to 8 g/dL, and an extremely low reticulocyte count.

(Choice E) Bone marrow infiltration due to leukemia results in pancytopenia by crowding out the normal bone marrow elements. Patients present with lethargy (from anemia), bruising and bleeding (from thrombocytopenia), and unexplained fever. They may also complain of bone pain or present with a limp. CBC shows pancytopenia or anemia, thrombocytopenia and leukocytosis. Acute myeloid leukemia is more common in adults. In this case, the classic presentation after an upper respiratory infection, as well as the absence of other features of leukemia (normal bone marrow), makes acquired aplastic anemia the best answer.

Educational Objective:

Acquired aplastic anemia results from an injury to the bone marrow by radiation, drugs (chemotherapy or antibiotics such as chloramphenicol), insecticides, toxins (benzene, carbon tetrachloride), or infections. Signs and symptoms include pallor, fatigue, weakness, loss of appetite, easy bruising, petechiae, mucosal hemorrhage, and fever. Laboratory evaluation demonstrates a normocytic or macrocytic anemia, leukopenia, reticulocytopenia, and thrombocytopenia. A bone marrow biopsy is essential to make the diagnosis; it typically shows profound hypocellularity with a decrease in all cell lines and fatty infiltration of the marrow.

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Educational Objective:

Aplastic anemia should be suspected in any patient with pancytopenia following drug intake, exposure to toxins or viral infections.