Hemolytic Anemia Due to Toxins

1. Chemical: Lead poisoning is the most frequent in this [illegible]. Ingestion of paint containing lead used to be frequent in children and still happens occasionally. Working with auto storage batteries and gasoline fumes is the most common cause in adults. It takes several weeks of chronic exposure to develop symptoms, unless a large dose is ingested. The anemia produced is most often mild to moderate, and the usual reason for seeing the patient is development of other systemic symptoms such as convulsions from lead encephalopathy, abdominal pain, or paresthesias of hands and feet. The anemia is more often hypochromic, but may be normochromic; it is usually normocytic. Basophilic stippling of red cells is often very pronounced, and forms a classic diagnostic clue to this condition. Basophilic stippling may occur in any severe anemia, especially the hemolytic anemias, but when present in unusual quantity should suggest lead poisoning unless the cause is already obvious. The stippled cells are reticulocytes, which, for some unknown reason, appear in this form in these patients. However, in some patients, basophilic stippling is minimal or absent. In lead poisoning there is usually increased urinary excretion of coproporphyrin type III, and this test provides a very useful screening test (however, in a few cases there may be normal results).

Other chemicals were mentioned in the discussion on glucose-6-phosphate dehydrogenase deficiency anemia (p. 41). Benzene toxicity was discussed in the hypoplastic bone marrow anemias (p. 27). Other chemicals which often produce a hemolytic anemia if taken in sufficient dose include naphthalene, toluene, phenacetin, and distilled water given intravenously. Severe extensive burns often produce acute hemolysis to varying degree.

2. Bacterial: Clostridium welchii septicemia often produces a severe hemolytic anemia with spherocytes. Hemolytic anemia is rarely seen with tuberculosis. The anemia of infection is usually not overtly hemolytic, although there may be a minor hemolytic component (not demonstrable by the usual laboratory tests).

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