# Heinz Body Hemolytic Anemia: A Step by Step Illustration

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The images demonstrate the morphologic changes of RBCs in peripheral blood smear of a patient with G6PD deficiency. Figure 1 includes three RBCs (demarcated by numbered arrows) that represent the successive stages of this phenomenon. Stage 1: Precipitated hemoglobin appears as a dense round zone within the RBC (arrow 1). Stage 2: Precipitated hemoglobin was removed upon passage through a reticuloendothelial system-rich tissue, leaving a blister-like vacuole (arrow 2). Stage 3: An RBC transforms into a bite cell (arrow 3). The transformation from stage 1 to stage 2 and 3 is expedited as RBCs pass through the narrow lumens of capillaries.

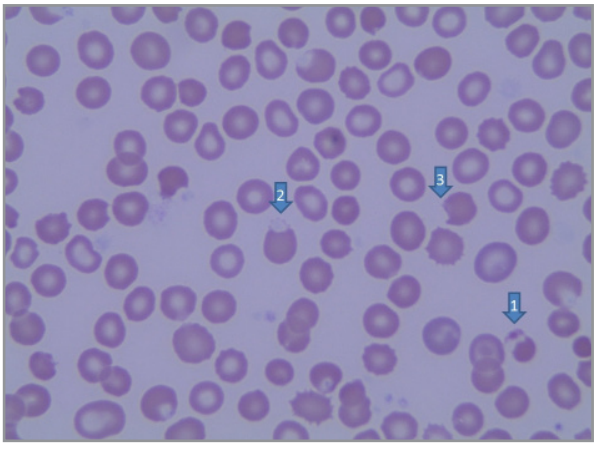


**Figure 1.**

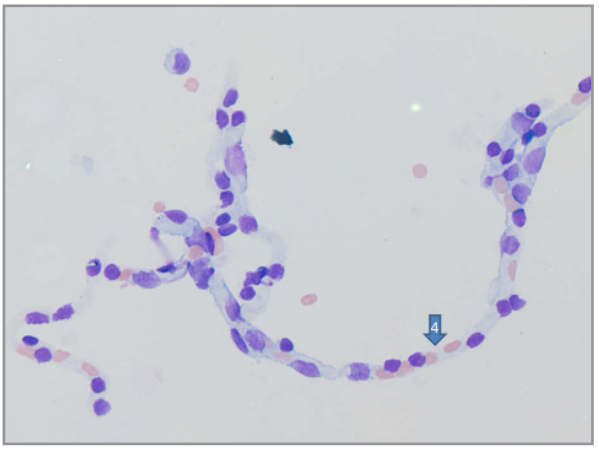


**Figure 2.**

Figure 2 contains a capillary from a stained touch imprint that illustrates the tight luminal space that RBCs must travel through (arrow 4). Precipitated hemoglobin appears as blue inclusions at periphery of RBC's (Figure 3- arrows) stained with supravital or Brilliant Cresyl Blue.

Heinz body was first described by Robert Heinz in cases with hemolytic anemia in 1890.[1] The underlying pathophysiology involves denaturation and precipitation of hemoglobin due to an inability of G6PD-deficient RBCs to clear oxygenated free radicals. RBCs deformed by precipitated hemoglobin lack the flexibility needed for tight navigation, particularly while passing through sinusoids of the spleen.[2 3]


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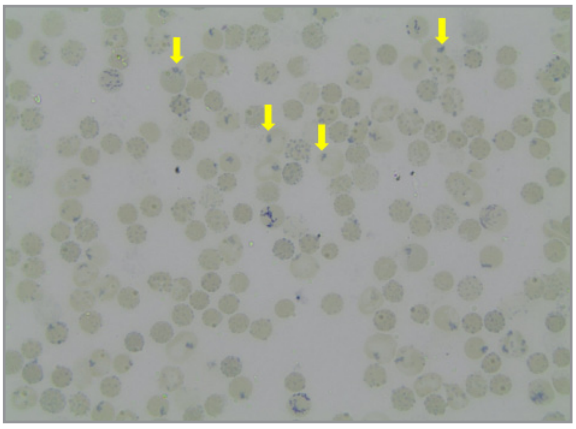

**Figure 3.**

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