Chapter IX

Codocytes
and
Target Cells
Codocytes and Target Cells

Codocytes are bell-shaped erythrocytes. The “bells” are always thin-walled and should not be mistaken for thick-walled cups or stomatocytes. The mean corpuscular hemoglobin volume and mean corpuscular hemoglobin concentration of codocytes are always low. Codocytes can be thought of as cells whose envelope is too large for their hemoglobin content. Accordingly, their resistance to hypotonic saline is increased, lysis resulting only when the cell membrane is maximally stretched. Codocytes might be considered the antithesis of spherocytes, which have too little membrane for their volume and hence increased susceptibility to lysis or increased “osmotic fragility.”

When a smear is prepared and the red cells come to rest flat on the slide, the codocytes with slight concavity will assume the appearance of “target cells.”

Target cells (or codocytes) are found in many hypochromic anemias which have a high incidence among persons of Mediterranean or Oriental origin.

Fig. 1. Codocyte I. Hypochromic bell-shaped red cell (Thalassemia).
Fig. 2. Codocyte II. “Mexican-hat” cell.
Fig. 3. Codocyte IV.
Fig. 4. Codocyte IV. Note the small orifice on the concave aspect of the cell. It is probably due to the rupture of a vacuole.
Fig. 5. Codocytes in a smear. Codocytes I and II, with their slight concavity, spread out flat in smears and give the appearance of target cells due to the collapse of their apex; the codocytes III and IV with their deep concavity come to rest on their sides and result in helmet cells.