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# TBP Peripheral Smear Template

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Required components (though creative efforts that deviate from the template will be considered):

- ✓ Title
- ✓ High quality smear image
- ✓ Caption/legend, including magnification
- ✓ If new topic, include a descriptive table



**DATE**

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Authored by: Your Name

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## **If the topic, cell phenotype or disease state is new to TBP (not represented in its image bank)**

### **Provide:**

1. Title
2. Thumbnail image (optional)
3. Original image of peripheral smear
4. Copy of peripheral smear image indicating (for example, with arrows) which cells you wish to call out
5. Magnification
6. Caption
7. Descriptive table

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## Title Heading (type here)

Notes:

1. Should describe the morphological abnormality or disease condition (for example, "Acanthocytes (spur cells)")
2. Feel free to choose a catchy thumbnail image. These should be metaphorical/abstract, not literal. If you do not provide such an image, TBP will choose one
3. The Title and thumbnail image will appear both in the search page and on the smear page. The author's name will appear on the smear page

Example of a title: **Acanthocytes (spur cells)**

### 1) Search page thumbnail



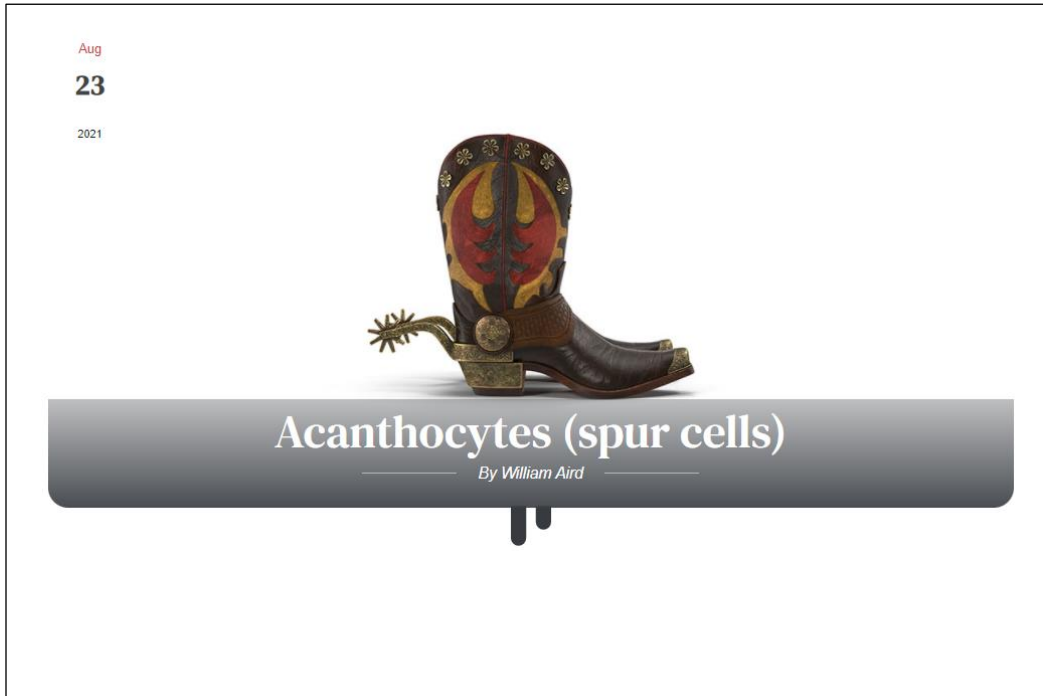
## Acanthocytes (spur cells)

*Aug 23th 2021*

Multiple acanthocytes (one shown in square and magnified in inset) in a 77-year-old man with alcoholic cirrhosis. Note the thorn-like projections of variable size/length/thickness, and the absence of central pallor (100x, oil). [Read More →](#)

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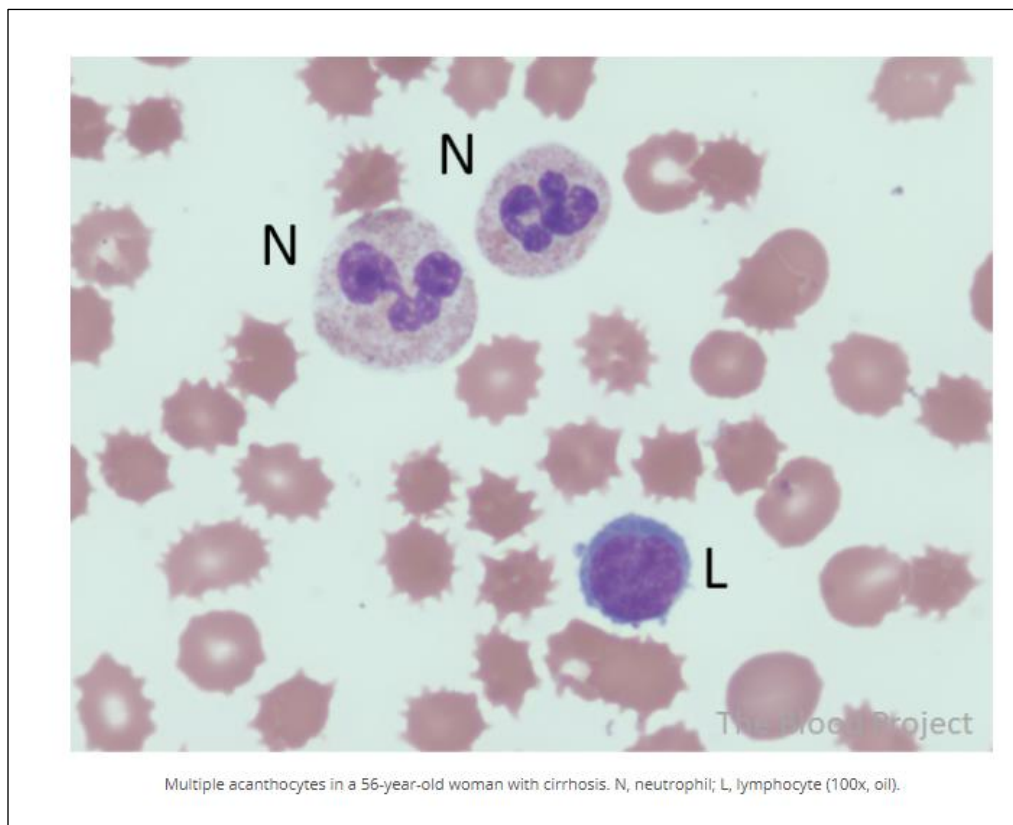
## 2) Smear page - title, image and author's name



## High Quality Image of Smear

Notes:

1. Provide a high-quality image. The smear should be well stained, the cells of interest should be in focus and well spread out (non-overlapping), and the image should be bright
2. Indicate magnification (10x, 50x, 100x) and whether oil immersion was used
3. Provide a copy of a marked-up image that indicates (for example, using arrows) which cells you wish to point out. TBP will do the actual labeling on the master copy to maintain consistency across content (example below uses letters, other smears use blue arrows)
4. Provide a brief caption describing the smear



## Table

### Notes:

1. Tables are used to describe the cell or condition
2. Table for a *cell phenotype* should include
  - △ Phenotype
  - △ Also known as (where appropriate)
  - △ Definition
  - △ Differential diagnosis (what might it be confused with)
  - △ Conditions associated with the phenotype
  - △ Mechanism of formation
  - △ History (where appropriate)
  - △ Source/author
  - △ Reviewed and edited by (this will be completed by TBP)

### Example of Table of a Cell Phenotype-Related Smear

Parameter	Properties
Red blood cell, shape abnormality	Acanthocyte
Also known as	Spur cells from the Greek acantha "thorn" (some have advocated restricting the term acanthocyte for those with hereditary neurological syndromes, and spur cell for the remainder of cases).
Definition	Acanthocytes are densely stained, spheroidal red blood cells that lack central pallor and have 3-20 irregularly distributed, thorn-like projections of variable size/length/thickness, often with drumstick (knobby) ends. Spicules may occasionally have branches.
Ddx	Must be differentiated from burr cells. Small contracted cells in pyruvate kinase have the appearance of acanthocytes but they do not carry that name.
Conditions associated with the shape abnormality	Hereditary abetalipoproteinemia (hereditary acanthocytosis), McLeod syndrome/phenotype and chorea-acanthocytosis; severe end-stage liver disease, post splenectomy, hypothyroidism, anorexia nervosa, and chronic starvation.
Mechanism of formation	Membrane defect associated with increased RBC cholesterol with reduction in other major phospholipids and decreased cholesterol: PL ratio. Imbalance in cholesterol and PL leads to preferential expansion of the outer leaflet of lipid bilayer. Mechanism probably differs in abetalipoproteinemia, where lack of a structural protein plays a role.
History	First described in 1950 by Bassen and Kornzweig; named in 1952 by K. Singer. Spur cell anemia first reported in 1964.
Source/author	William Aird

## Table (cont'd)

Notes:

3. Table for a *condition* should include

- △ Condition
- △ Definition
- △ Differential diagnosis (what might it be confused with)
- △ Typical peripheral smear findings
- △ Mechanism of formation (can link to cell phenotypes smears if available)
- △ History (where appropriate)
- △ Source/author
- △ Reviewed and edited by (this will be completed by TBP)

### Example of Table of a Disease-Related Smear

Parameter	Properties
Condition	Iron deficiency anemia
Findings	Hypochromia, pencil shaped red cells, microcytosis and hypochromasia. Pencil cells are hypochromic variants of elliptocytes having long axes at least triple the length of the cell's short axis. Reactive thrombocytosis may also occur
Ddx	beta-thalassemia minor and anemia of chronic disease
Mechanism	Decreased hemoglobin production leads to hypochromia. The blunted hemoglobin production results in a smaller-than-normal mature red cell
Source/author	William Aird
Reviewed and edited by	Parul Bhargava

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- 4. Magnification**
- 5. Caption**

These smears will be added to existing categories. For example, if a smear of acanthocytes is submitted and accepted, it will be placed in the existing Acanthocyte (spur cell) page and the author will be credited in the caption