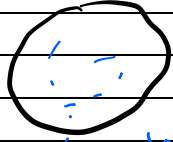


Reticulocyte Count

Steak's
شفت

- Size Larger
- remnants of Organelles

- Glycolysis



Stained blue
(blue Methylene blue)

$$\frac{1000 \text{ RBC}}{50 \text{ ret}} \times \frac{50}{1000} \times 100\% = 5\%$$

not enough misleading

Absolute Count

$$\text{ARC} = 5\% \times \text{RBC count}$$

Absolute Ref. Count

25000 normal
175000

Why Reticulocyte?

Indicate BM (Reflex) Production (Effective Erythropoiesis)

build Concept, Not Memorize!

3 to have Effective Erythropoiesis

→ Intact BM

→ raw Material

→ EPO

لدى المعدلة افلاج

الكمونات

Iron / B12 / B9

لازم انه يقول له وقت وشغل

BM is trying to compensate

Response to IDA

Hemorrhage

Hemolysis

الوان ج يعطي Clues

4g=9 ... Dark Stool ... Tachycardia

reticulocytes, if

if a decrease in One of the 3 we'll get ↓ Reticulocytes

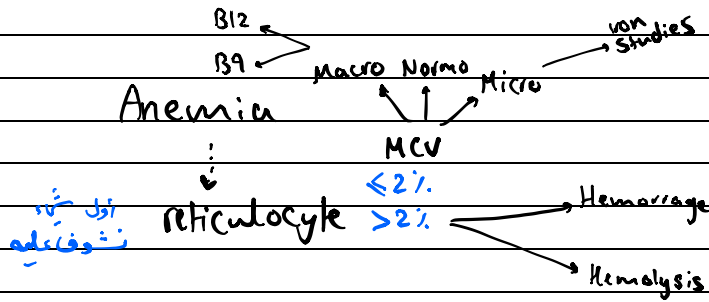
من الزحف ...

لما تدرس حاول تفهم Algorithm ... حتى تعرف وما تنطبق

لازم تحلب العضا وعارف ليشي تطلبه ... وعارف ايشي ج توي

دا انما كذا منظم

The Anemia Algorithm



WBC --- 5K-11K

لا تخطأ أرقام لا تخطأ LAB
Normal Range

الاعتقاد دائما في
Extreme بالانزق

↑ Leukocytosis

له لادوم نعرف أي خلايا عالية
شبهه في نعرف عالية

Cancer
Inf. Infec

HIV
BM failure (Pan)
Medication
Cancer Patient

→ Steroids

but it's Apparent
leukocytosis

- Granulocytes
 - Neut 40-50% (60%)
 - Eos
 - Bas
 - Agranulocytes
 - Lymph 20-40%
 - Mono
- Percentage
لا تخطأ
نظرا للارتفاع

Shape
Size
Color
Dye

Differential stain

WBC 100 ليرى

$$\frac{N}{B} = \frac{11K}{60}$$

↑ in Bone Marrow
لكن بزيادة
العدد

Lymphocyte

cell - small
Nucleus - Large

Neutrophils

3-5 lobes
Small Granules
Neutral - Color لونها أصفر

ALC

↑ Viral

Monocytes

Frothy Glass Cytop

Eosinophils

Bi Lobed
Medium
Red - Acid Dye

↑ Parasitic
Allergic

Steroids ---> ↑ Neutrophil

- Prevent Neutrophil Migration
- Demargination of Neutrophil

Bi Lobed - S Shaped
very Large
blue - basic dye

نظرا لزيادة
النواة



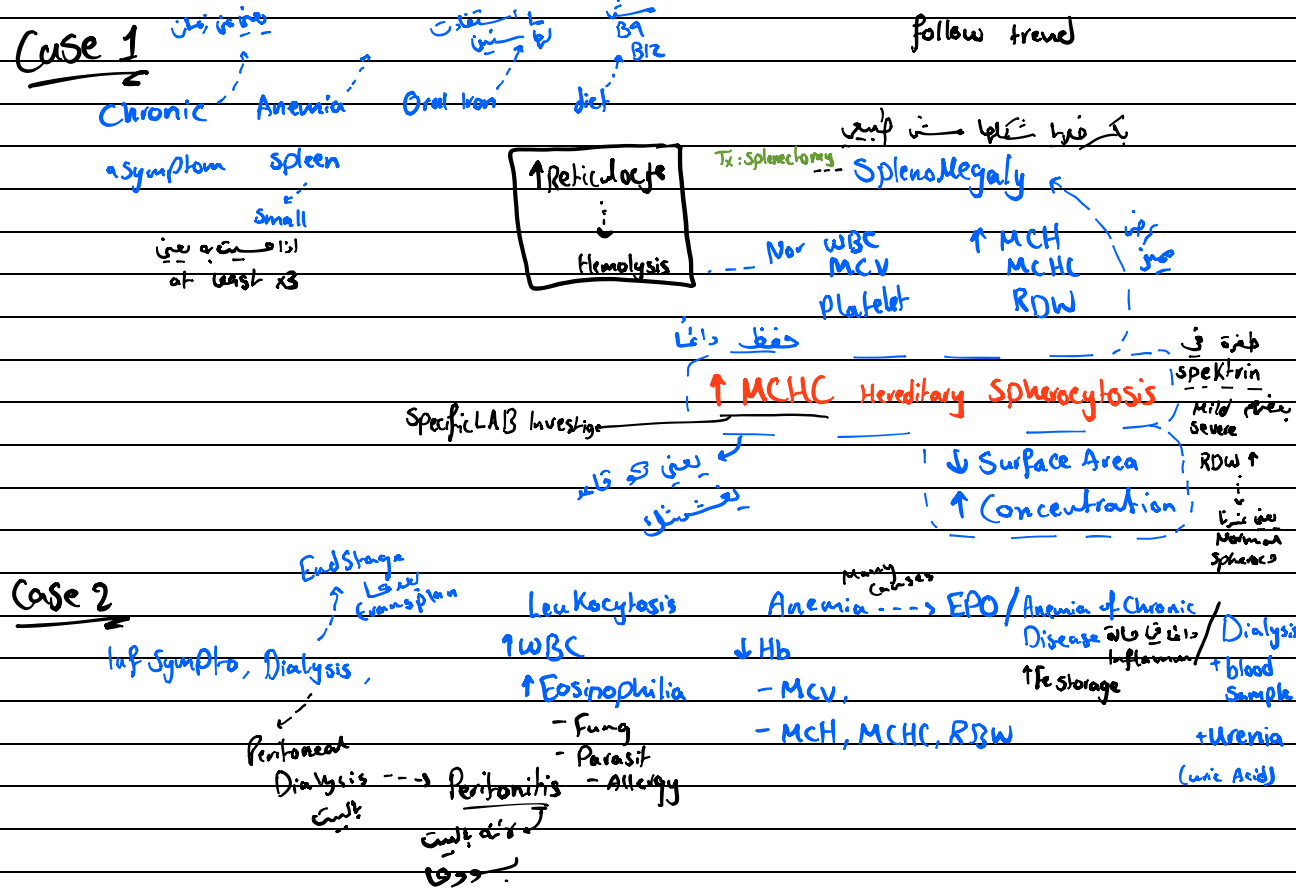
مشی بس کالج علی

test --- دور سے اسباب حل ہوتی ہے

دانشا عمل trending

ورڈ داٹا الدم 13 جات 9

follow trend



CASE 1: A 20-year-old woman presents with chronic, mild anemia. She has had multiple complete blood counts (CBCs) over the past few years, all showing a hemoglobin concentration between 9.5 and 11.5 g/d and has been treated intermittently with oral iron. Her diet is nutritionally adequate. She is asymptomatic. Physical examination is normal except for a spleen that is palpable 2 cm below the left subcostal margin. Her CBC is shown below:

Analyte	Case 1	Normal range
WBC (#/μL)	5500	4500-13,500
RBC (x10 ⁶ /μL)	3.7	4.0-5.5
Hgb (g/dL)	11.1	12-15
Hct (%)	33	36-45
MCV (fL)	84	81-95
MCH (pg)	35.8	25-33
MCHC (g/dL)	37.0	31-36
RDW (%)	15.7	<14.5
Platelets (#/μL)	245,000	150,000-500,000
Reticulocytes (%)	5.9	0.5-1.5

Case 2: A 35-year-old female was admitted to the hospital with complaints of fever, abdominal pain, chest pain, and shortness of breath. The patient had a history of type 1 diabetes mellitus since childhood. The patient also had end-stage renal disease, she is on peritoneal dialysis from diabetic nephropathy. On physical examination the patient's blood pressure was 199/85, her temperature 37 C

Her CBC is shown below

Result Name	Results	Units	Reference Range
WBC count	13.75	10 ³ /μL	4.17-10.16
Hemoglobin	9.9	g/dL	11.3-14.8
Hematocrit	29.9	%	34.7-44.5
MCV	89	fL	81-97
MCH	29.3	pg	26.8-34.3
MCHC	33.1	g/dL	31.4-37.4
RDW	15.0	%	11.6-15.1
Platelet count	322	10 ³ /μL	150-350
Segs	60	%	45-77
Lymphocytes	19	%	14-44
Monocytes	5	%	4-12
Eosinophils	15	%	0-6
Basophils	1	%	0-1
Absolute neutro	8.25	10 ³ /μL	1.88-7.82
Absolute lymph	2.61	10 ³ /μL	0.58-4.47
Absolute mono	0.69	10 ³ /μL	0.17-1.22
Absolute eos	2.06	10 ³ /μL	0.00-0.61
Absolute baso	0.14	10 ³ /μL	0.00-0.10