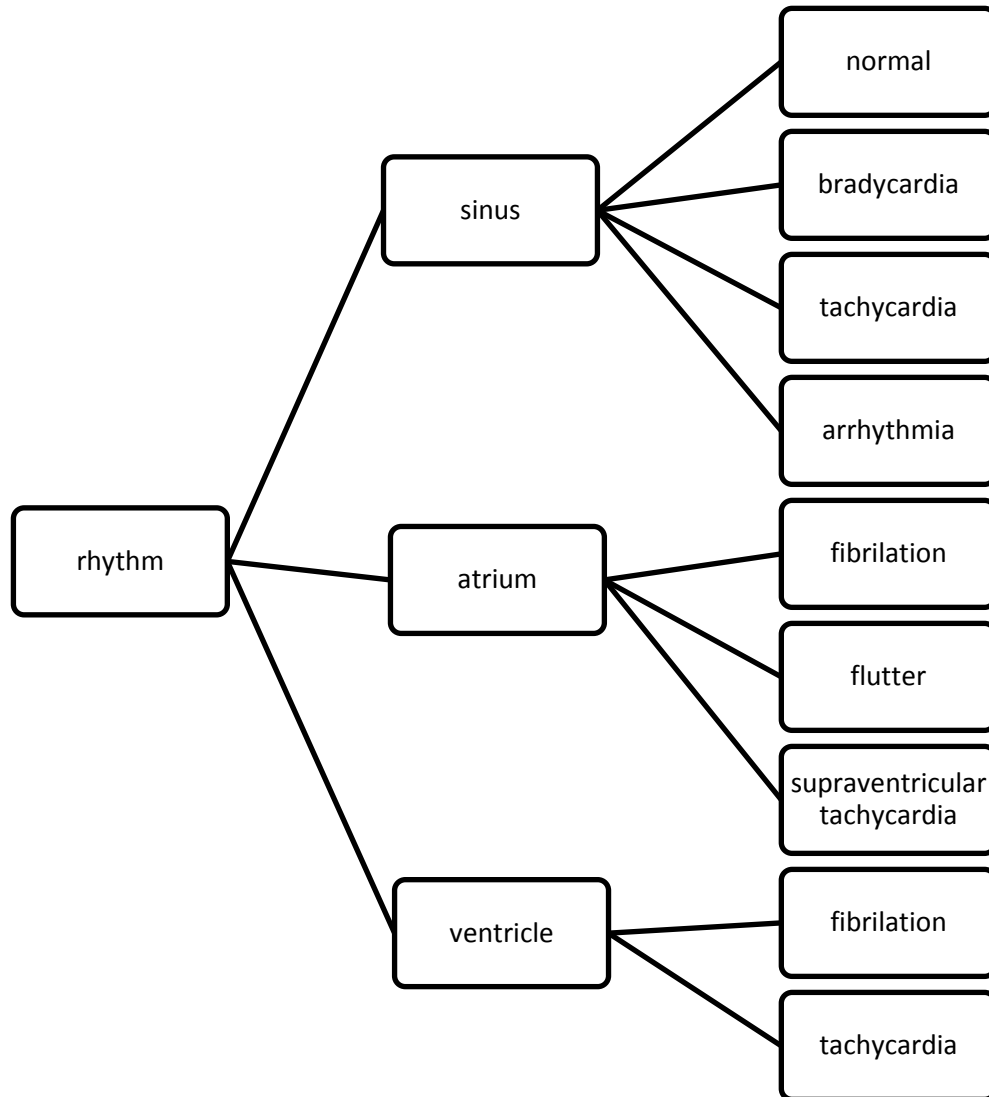


How to read ECG :

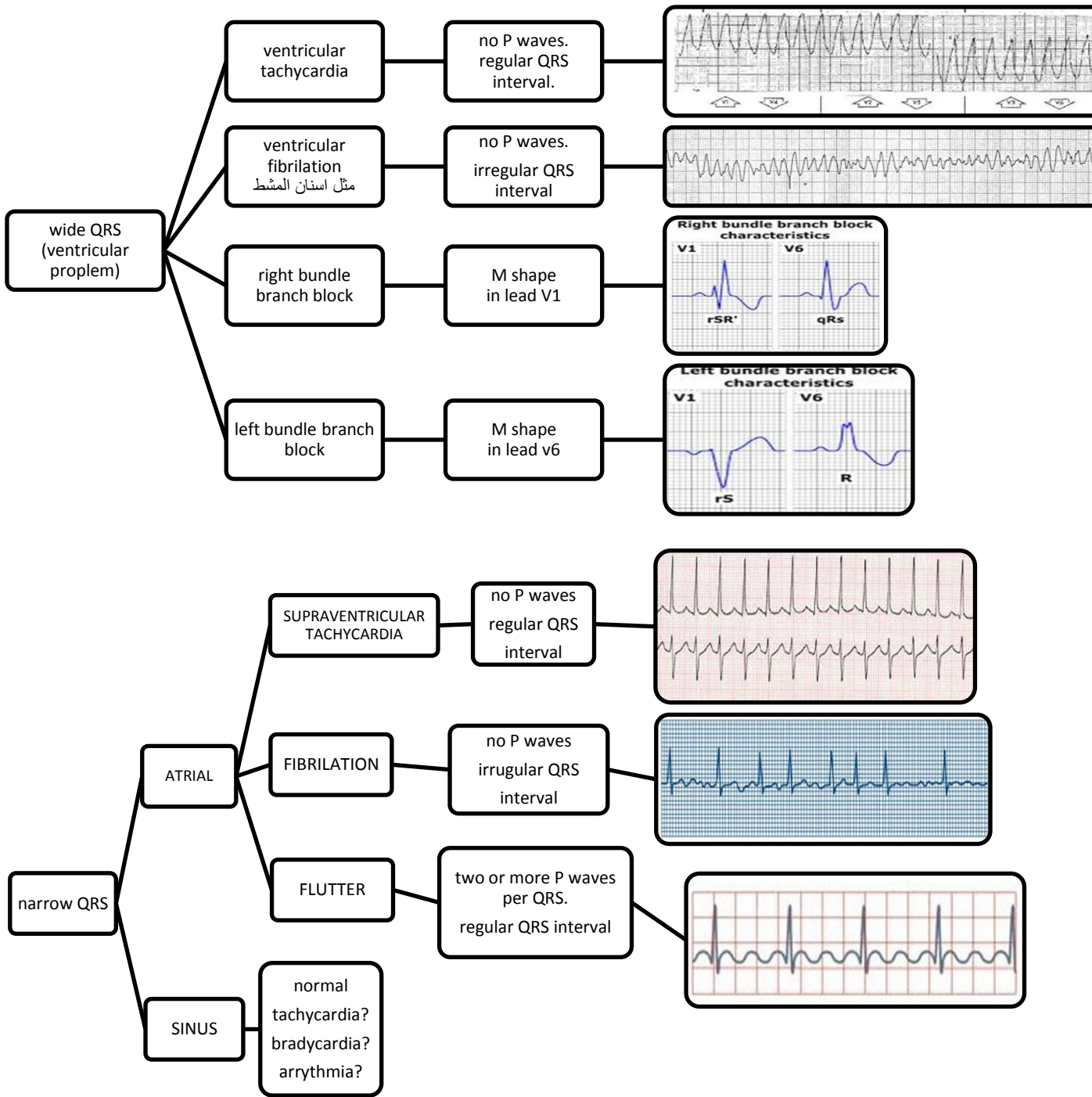
- 1) name , date ,....2) calibration.
- 3) rate : $300/\#$ of large square btw two R_s.
- 4) rhythm : you have to know 9 of them :



*How to know the rhythm : (use two question)

first : narrow QRS or wide QRS ? Second : present or absent P wave ?

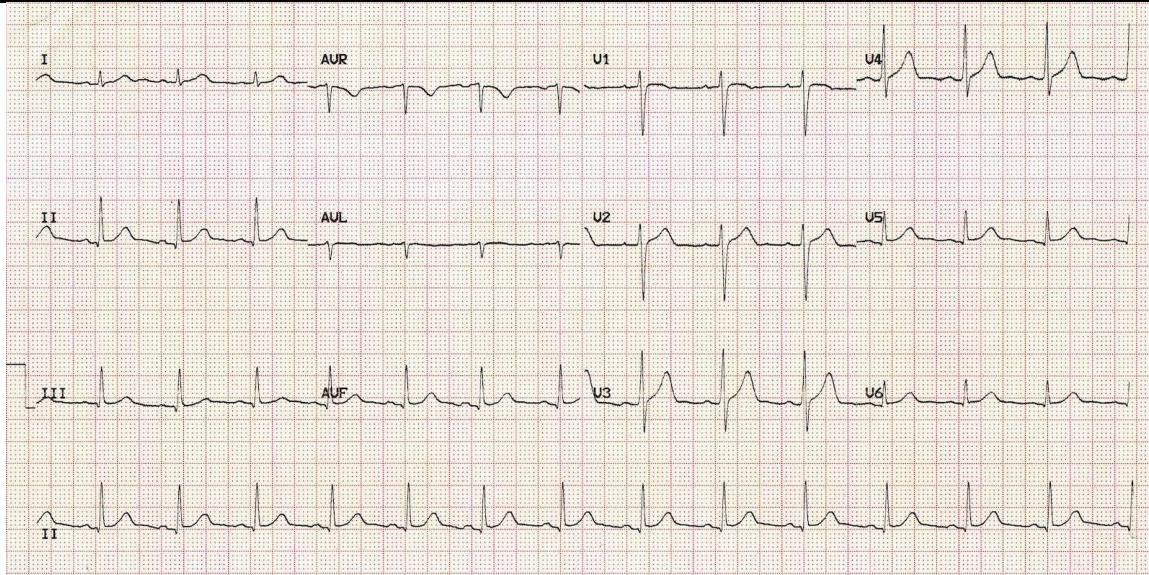
Narrow QRS : shorter than 120 ms (3 small square).
wide QRS : more than 120s (more than 3 square)



(the previous 2 pages from HOPE batch)

ECG

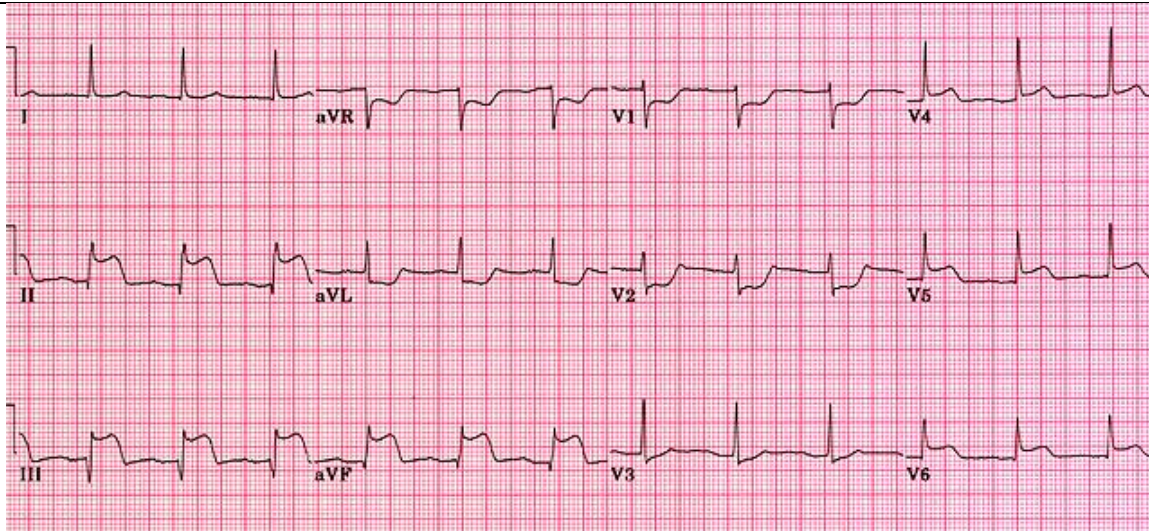
Notes



NORMAL ECG
(I can't explain all the ECG but I will try to mention the things that might trick u)

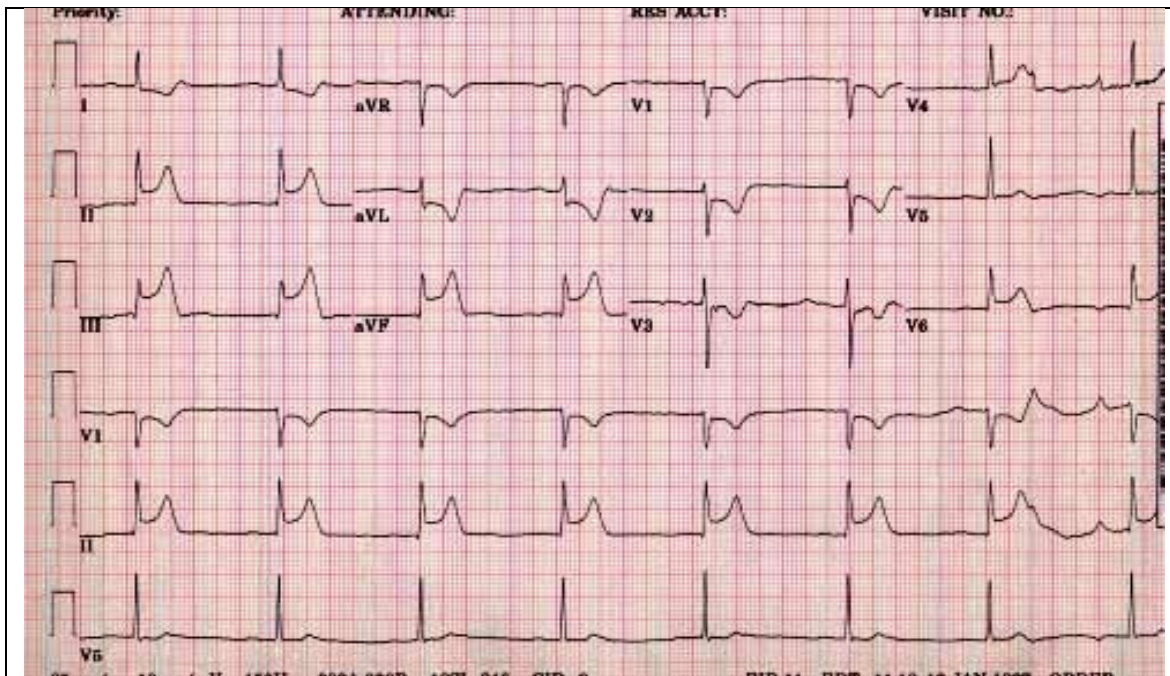
* in young men , it's ok to have T wave in leads V2 , V3 and early high J point

* Q wave is normal in leads : 1 , AVL , V5 , V6

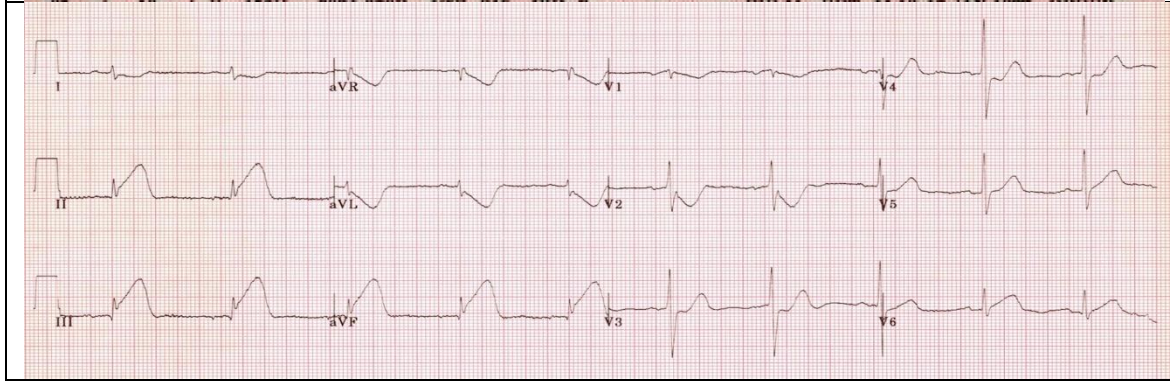


Inferior STMI

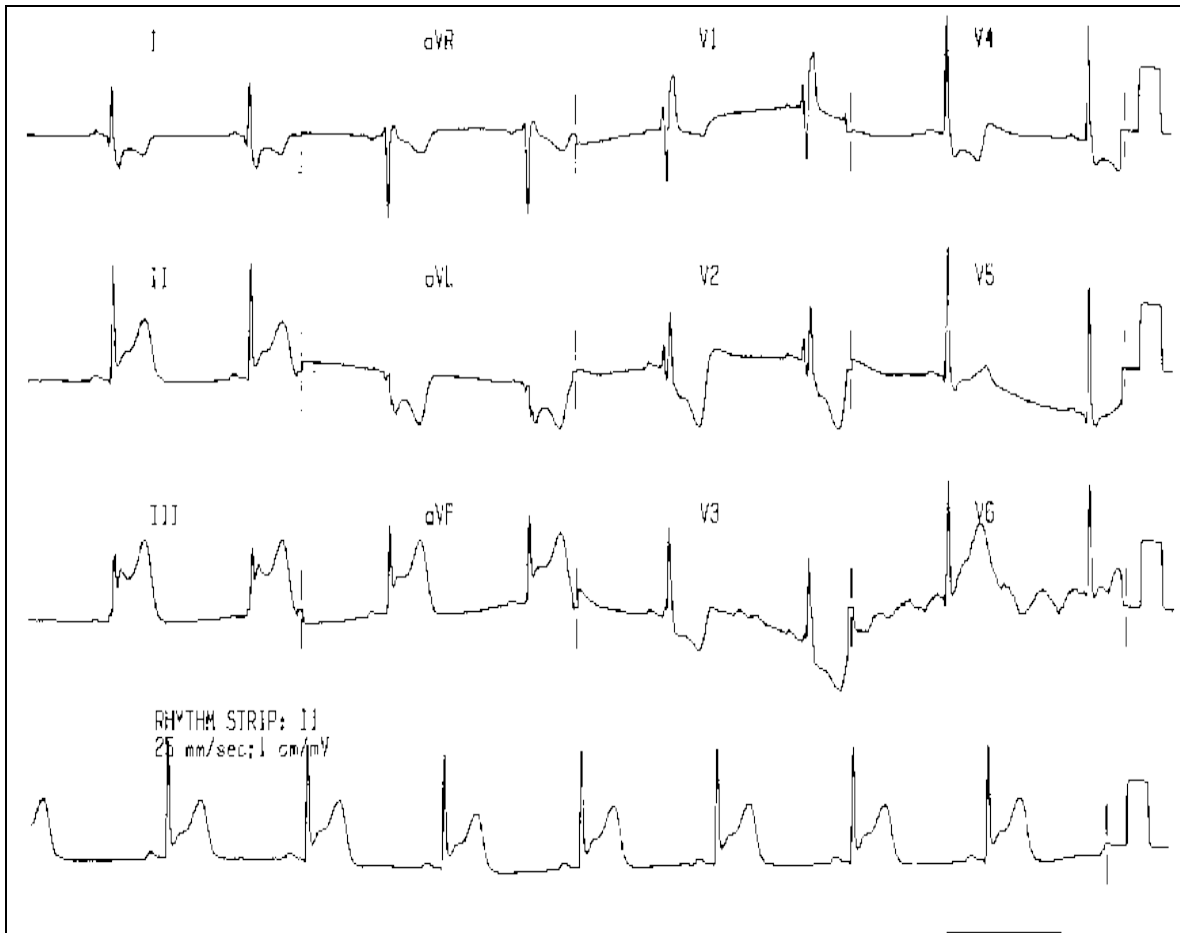
(how ?
look at leads 2,3,AVF
,, ST elevation ,
indicated inferior MI)



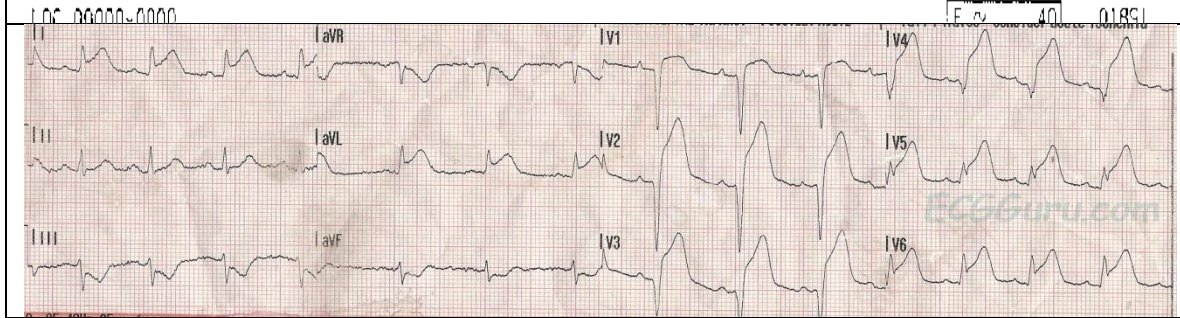
Inferior STMI



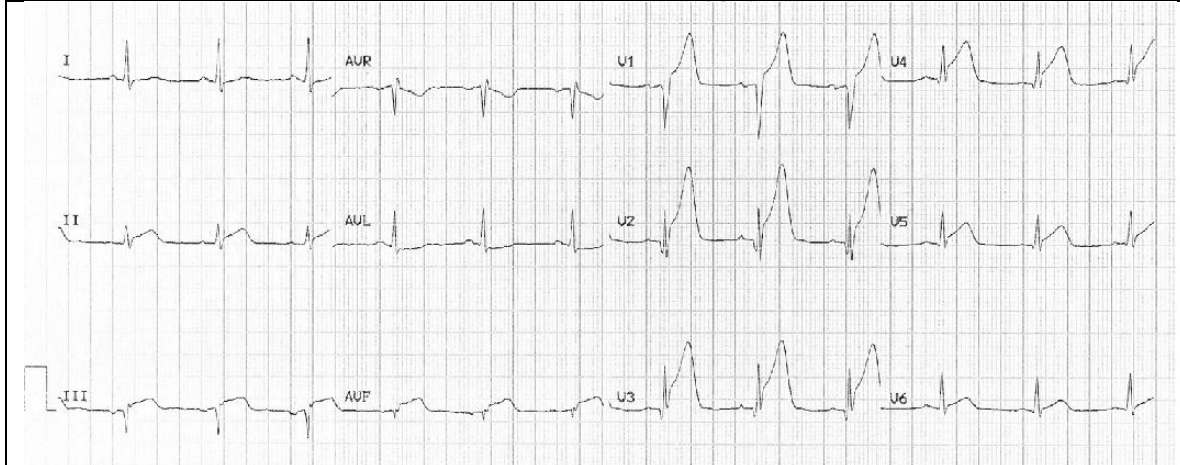
Inferior STMI



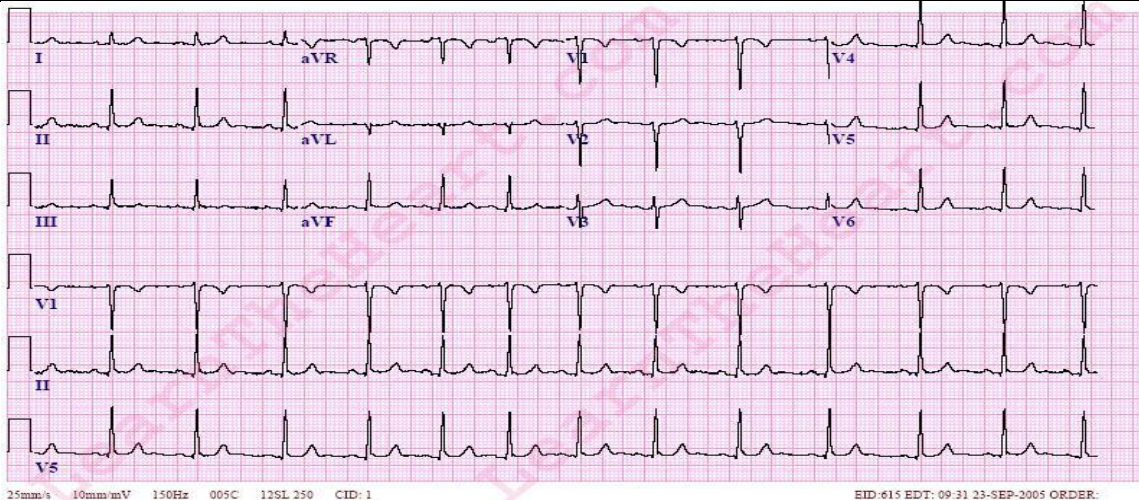
Inferior STMI



Acute Antero-lateral STEMI
(lateral leads : I , aVL , V5 , V6 ..
antero leads : V1- V4)



Anterior lateral MI



(Respiratory) Sinus Arrhythmia

- All criteria of normal rhythm except **heart and pulse rates increase with inspiration and decrease with expiration**
- Normal finding in brachycephalic breeds and in chronic respiratory disease
- Increased number of cardiac cycles during inspiration; decreased number during expiration

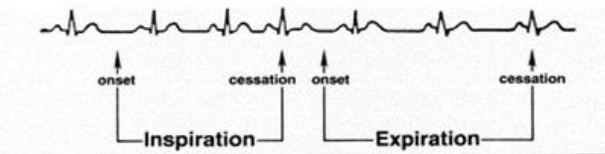


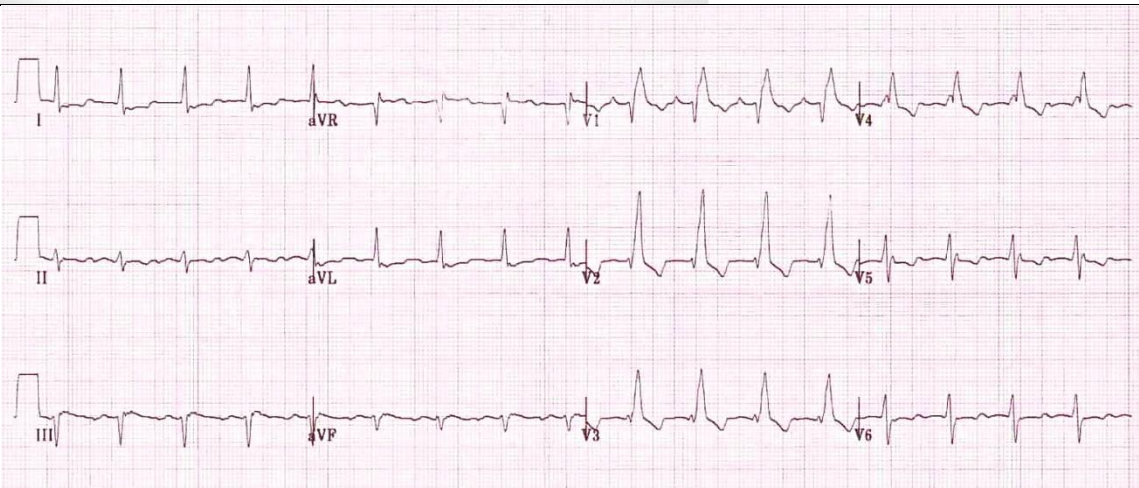
Fig. 1. Electrocardiogram exhibiting respiratory sinus arrhythmia. Heart rate increases rhythmically at inspiration and decreases at expiration.

Sinus arrhythmia

فرق بال heart rate between inspiration and expiration

- P wave is present
- Variation of PP interval

" it's a normal variant if it's associated with respiration ,, if it's not associated with respiration , it will be related to the same etiologies that cause sinus bradycardia "



* RBBB

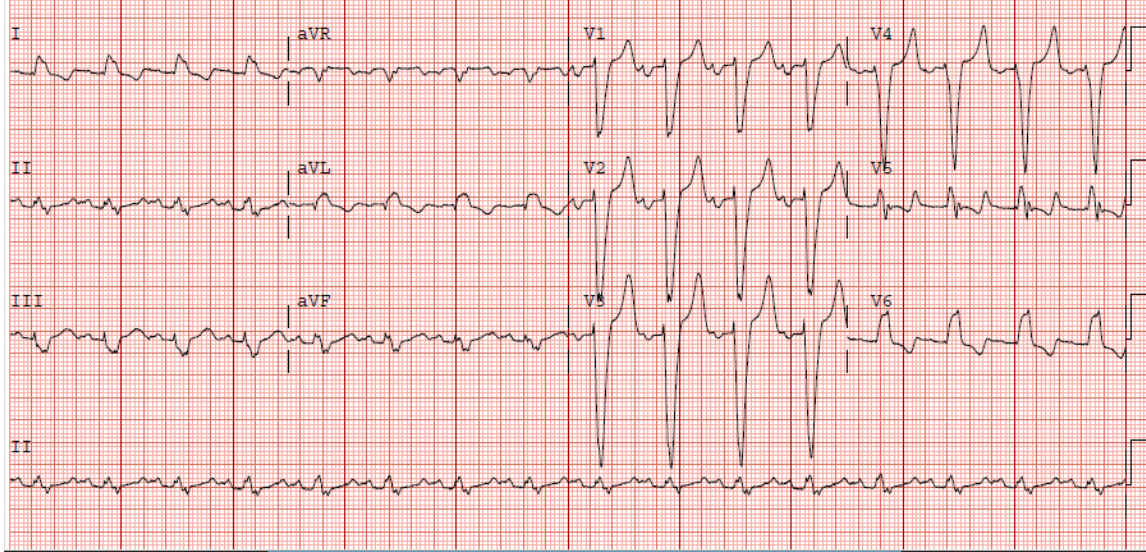
(How ?

- Deep S in lead 1
- QRS >120
- RSR pattern (m shape in V1)
- inverted T waves in V1
- Deep and wide S waves in Lead V6

كيف تعرفها عالسريع ؟

مفروض اي واحد بده يقرا ECG يبيلش من lead 1

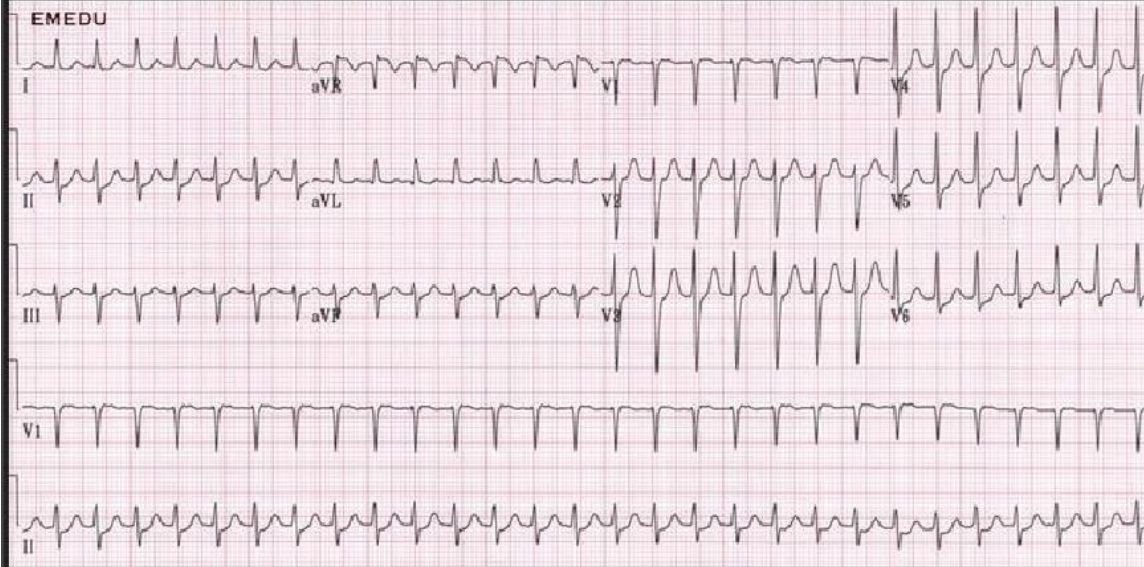
If u find deep S wave in lead 1 , directly jump to V1 .. if u find RSR pattern , it's RBBB



LBBB

- Wide QRS
 - M shape in V6
- ما سالوا عنها لهما بس
الاحتياط واجب

	V ₁	V ₆
Normal		
RBBB		
LBBB		

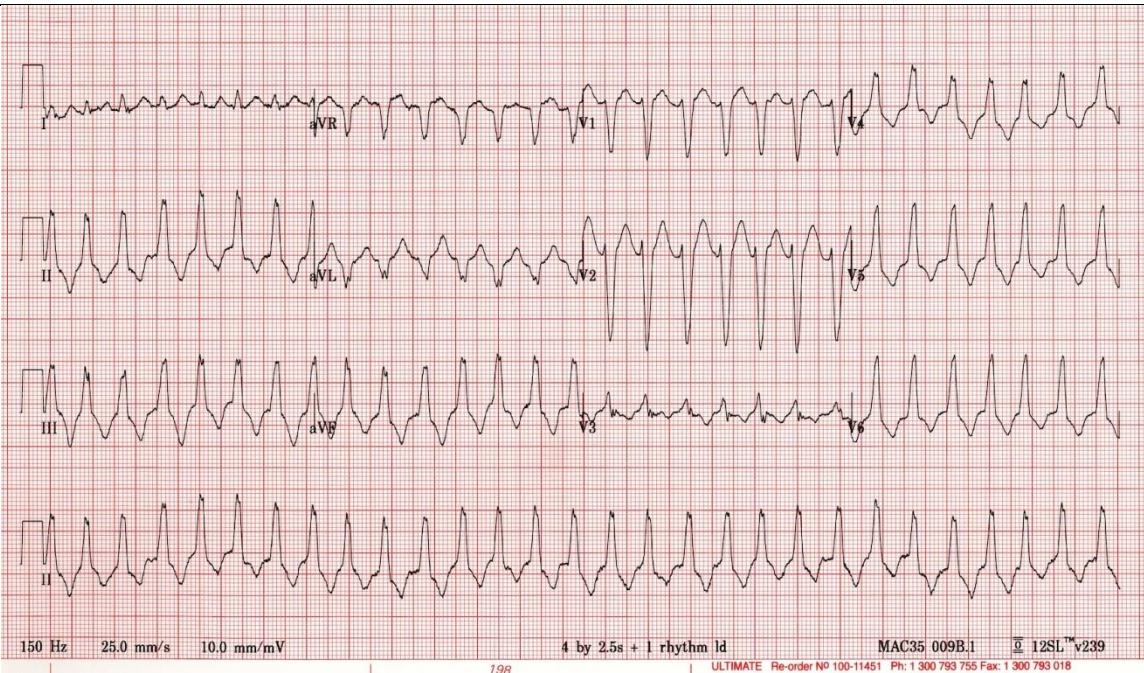


* (not always , if there BBB with SVT , the QRS will be wide , but I think for the family medicine exam just know that SVT come with short QRS)

* TT ? adenosine

SVT (how?)

- Short QRS *
- Regular rhythm
- u may not see the P wave or u may sat overlapping with T wave
- Rate : 140-250

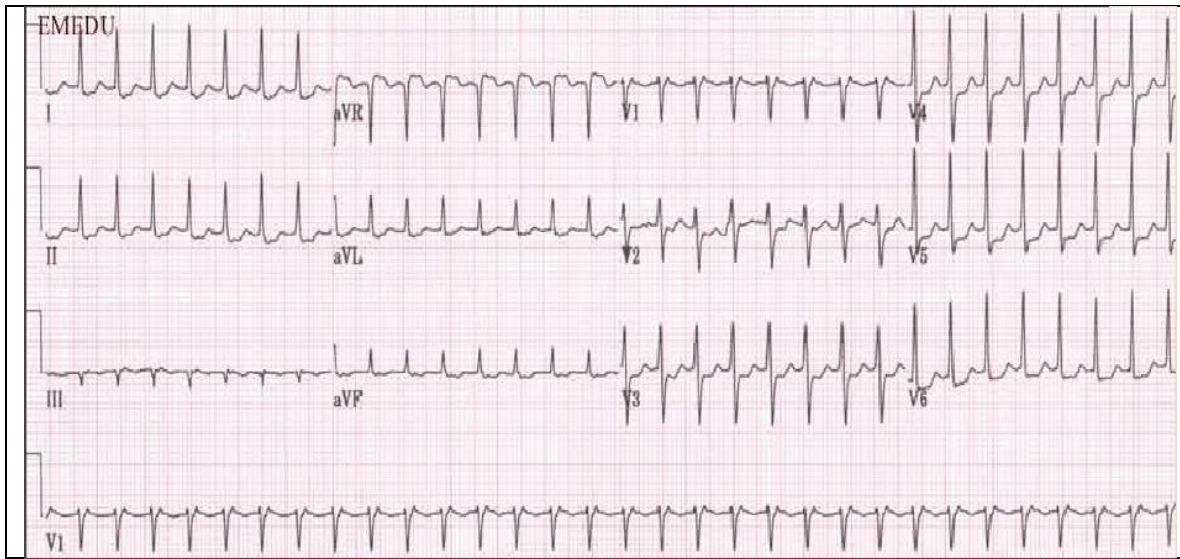


SVT with BBB

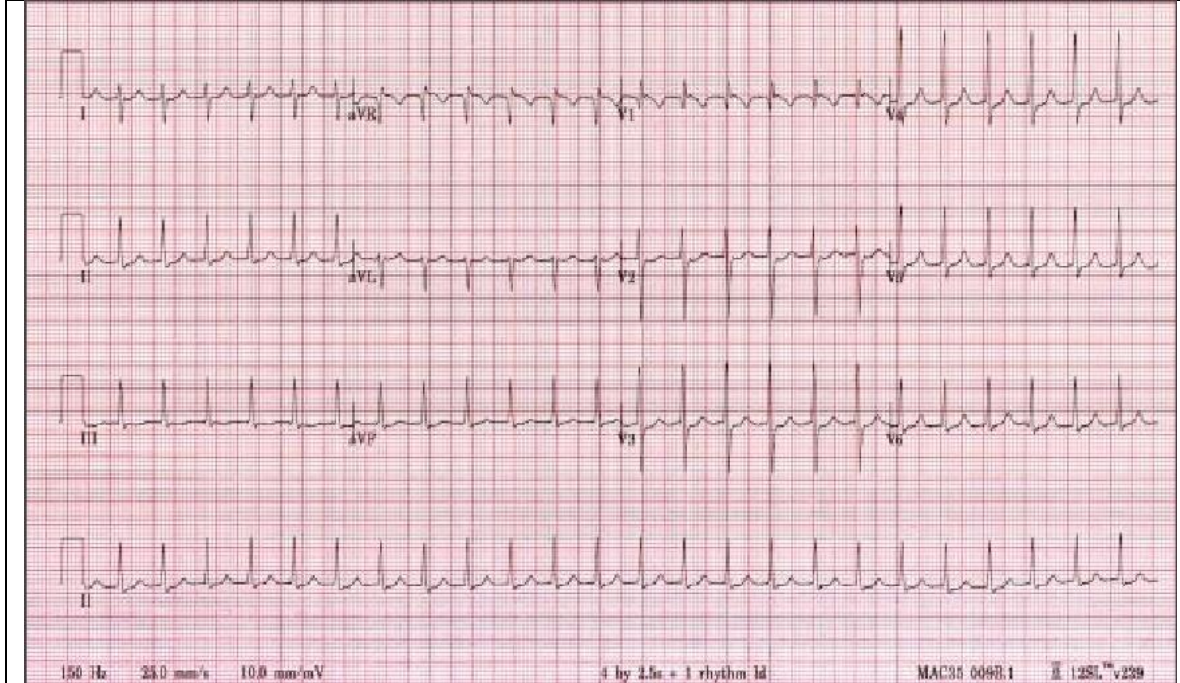
but I think if u just write SVT they will consider it correct

هاد اشى بالباطني ما كان
يجي الا لسادسة في حالات
نادرة جدا لانه في 3
شغلات ممكن نتخربط
بينهم .. تجي بالفاملي
مدسن تجيب هيك اشى ..
مش فاهم وجهة النظر !

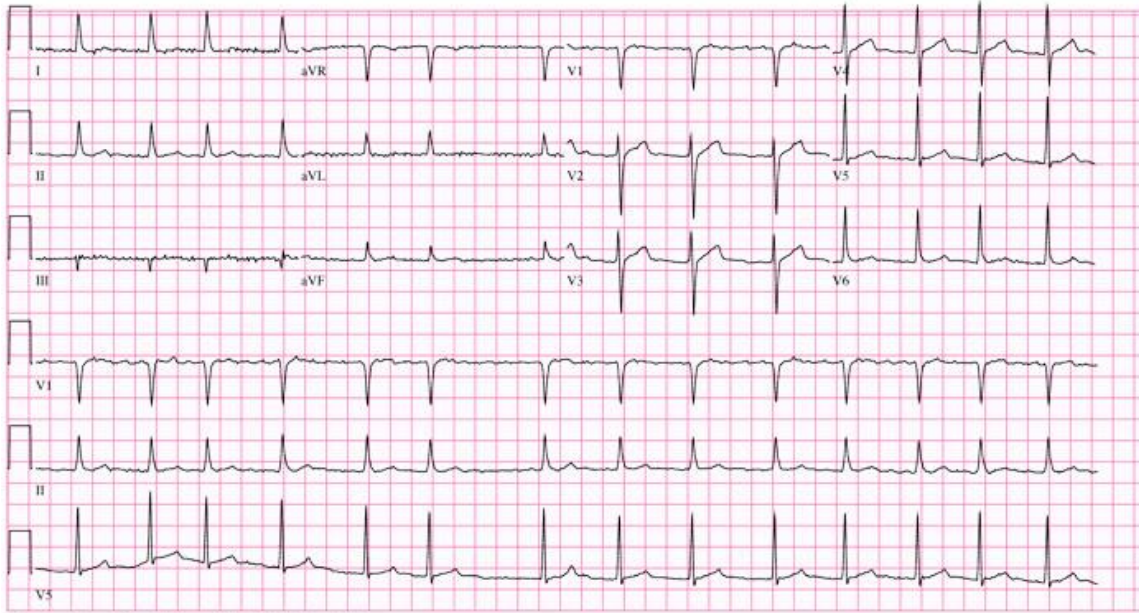
* check this : <http://lifeinthefastlane.com/ecg-library/basics/vt-vs-svt/>



SVT



SVT



25mm/s 10mm/mV 100Hz 005E 12SL 233 CID: 1

Atrial fibrillation

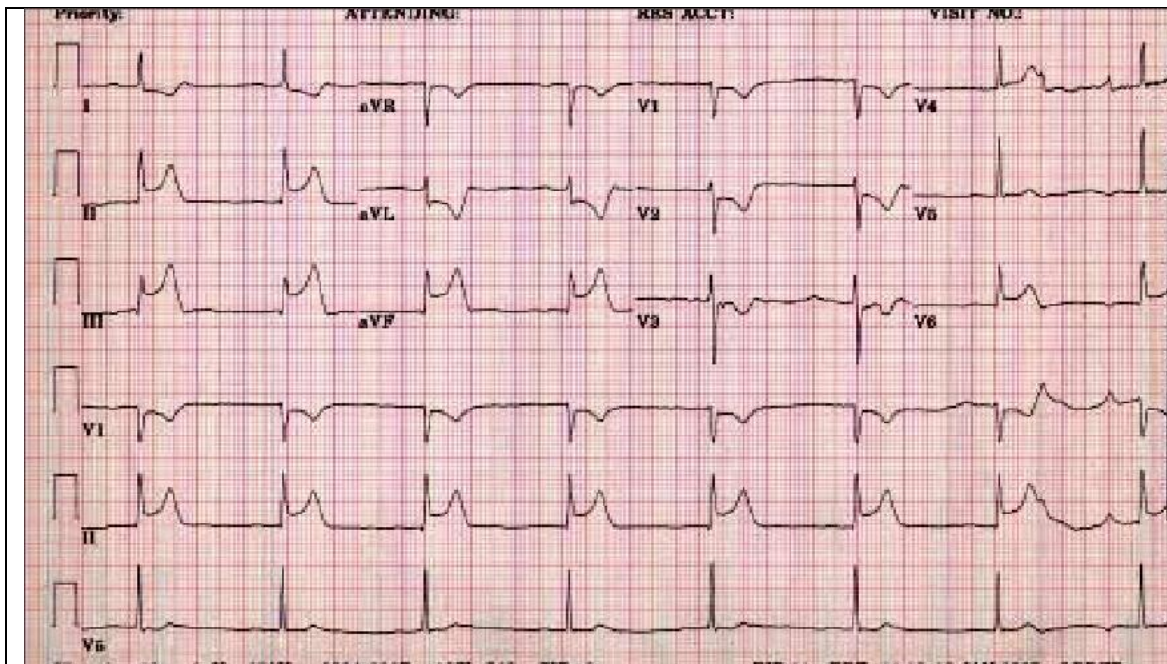
(no p wave +
irregular irregularity
in rhythm)



18.29 Common causes of atrial fibrillation

- Coronary artery disease (including acute MI)
- Valvular heart disease, especially rheumatic mitral valve disease
- Hypertension
- Sinoatrial disease
- Hyperthyroidism
- Alcohol
- Cardiomyopathy
- Congenital heart disease
- Chest infection
- Pulmonary embolism
- Pericardial disease
- Idiopathic (lone atrial fibrillation)

(memorize at least 3 of them)

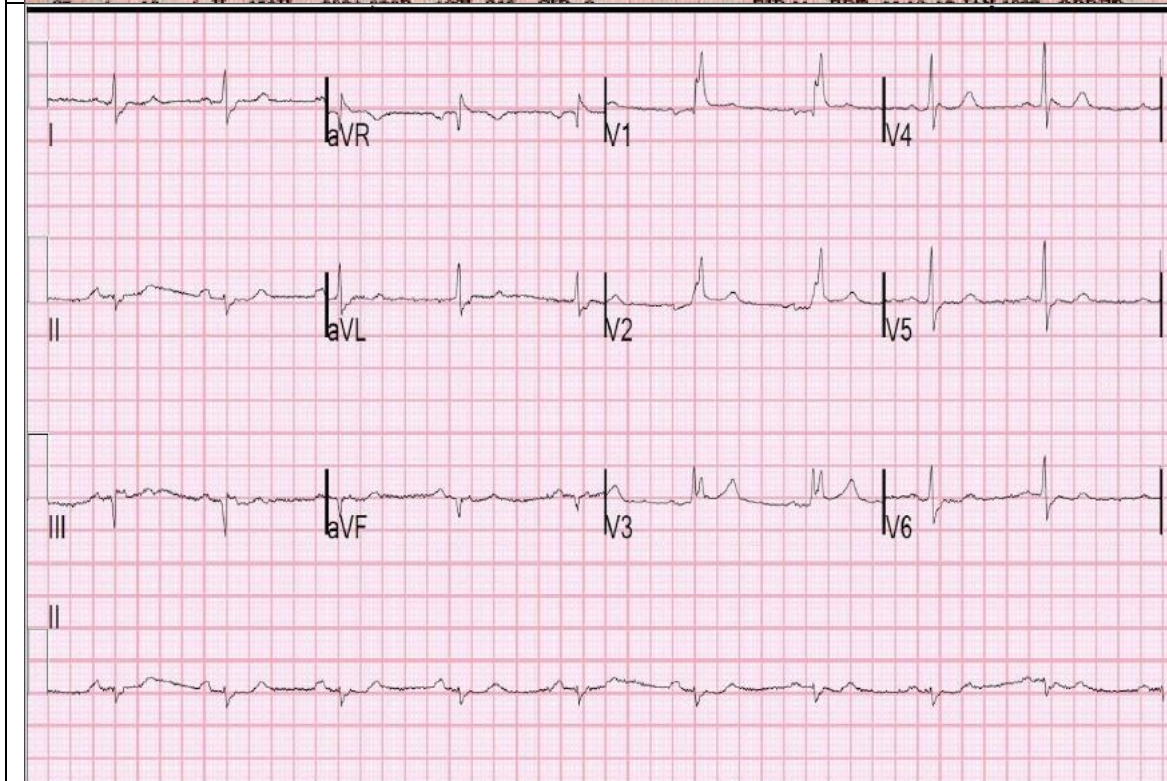


Findings ?

- ST elevation in leads II, III and aVF
- T wave inversion V1, V2, V3

Dx ?

- Acute Inferior wall STEMI



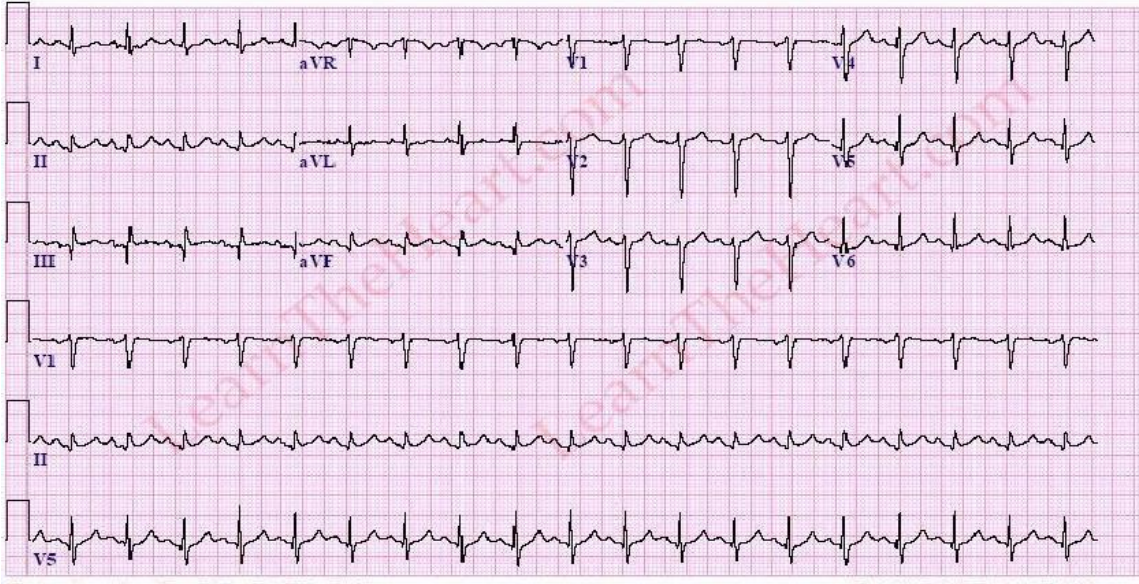
- T wave inversion in lead 2, 3, aVF .

- Pathological Q waves in lead 2, 3, aVF .

- RBBB
 lead 1 امسك
 فيو s
 V1 نط ع
 m shape فيو
 this is RBBB

2. RBBB

* Remember , Q wave is normal in leads : 1 , AVL , V5 , V6



Sinus tachycardia

* causes ?

- Pain
- Fever
- Anxiety
- Dehydration
- Malignant hyperthermia

بجوز الي اذكره تحت مش 100% كامل او دقيق بس هاد الي بذكره

باختصار شديد جدا

عنا 3 انواع رئيسية من ال

arrhythmia

Sinus (in SA node)

* 3 examples that u should keep in ur mind :

- Sinus tachycardia : physiological / HR >100
- Sinus bradycardia : Physiological / HR <60
- Sick sinus syndrome : Tachy + Brady + Pause

اخر وحدة اعمل حالك ما قراتها عالاقل بالفاملي , حترد تسمع فيها

بباطني سادسة عالاكيد

شو المشترك بين هذول ال 3 ؟

QRS : NORMAL SHAPE , cause the problem is above

the ventricles , it's in the SA node

كيف نعرفهم ؟

take the distance between R-R → 300/num. of large

boxes

Atrial

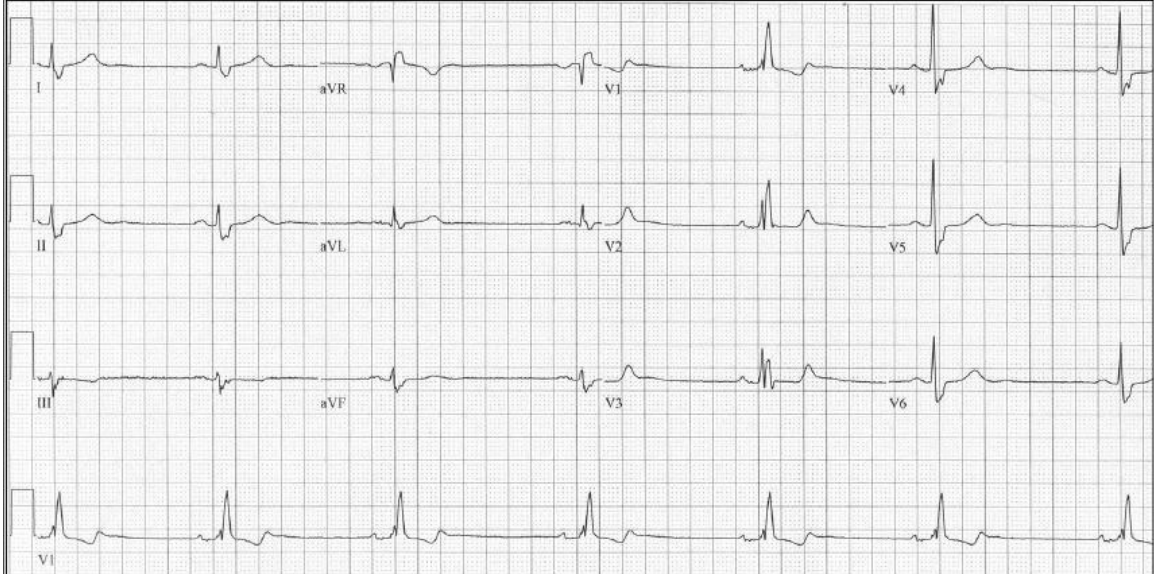
- Extra systole ما جابوا عليها اي شي فانسوها

- SVT : regular / T on top of P

- AF : irregular irregularity

- Atrial flutter : regular , saw teeth appearance

<p>Ventricular</p>	<ul style="list-style-type: none"> - Heart block and it's 3 degrees : (First degree) : prolongation of PR interval (Second degree , type 1 : progressive PR interval prolongation , then a beat drop) (Second degree , type 2 : no problem in PR interval , just a sudden drop in the beat) (This degree : no relationship between P and QRS) شرحهم الدكتور بالسمنار بس ما شفت عليهم ولا سوال - Extra systole - Bigiminal - Trigeminal - VT - VF 	
--------------------	---	--

	<p>1. Bradycardia</p> <p>2. Hypothyroidism, patient on β blocker, obstructive jaundice, athletes</p>
--	---

X-Rays



also check this :

<https://radiopaedia.org/cases/normal-frontal-chest-x-ray-1>

Notes

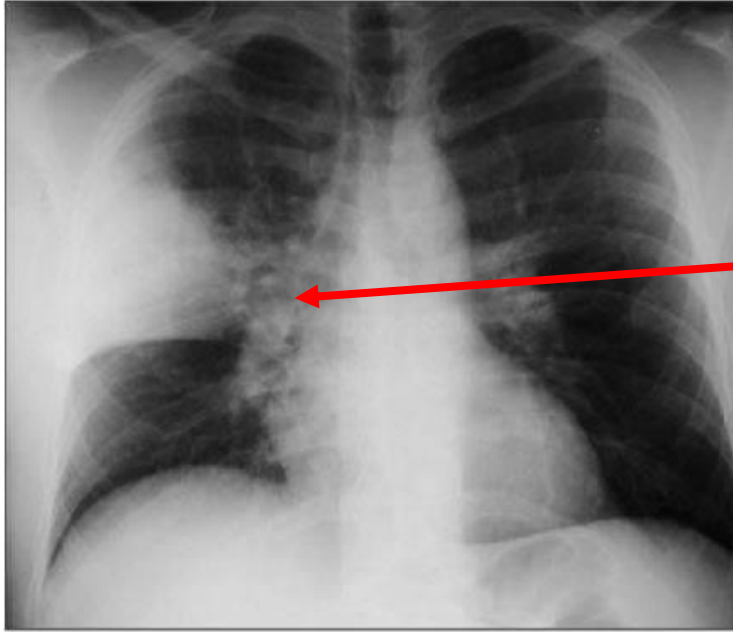
Normal Chest X-ray

(watch this , 41 s only :

<https://www.youtube.com/watch?v=RGwDx3zl1EM>)

if u want to fully understand all the chest X rays that come in our exams during 4-6th year , just watch this video :

https://www.youtube.com/watch?v=SC-NggHZ_ZQ



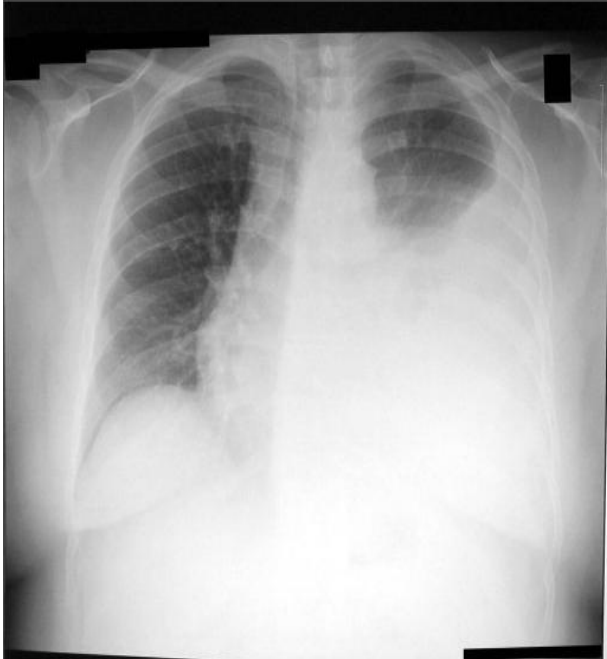
•1. Right middle and upper lobe infiltration

•2. Right middle upper and middle lobe pneumonia.

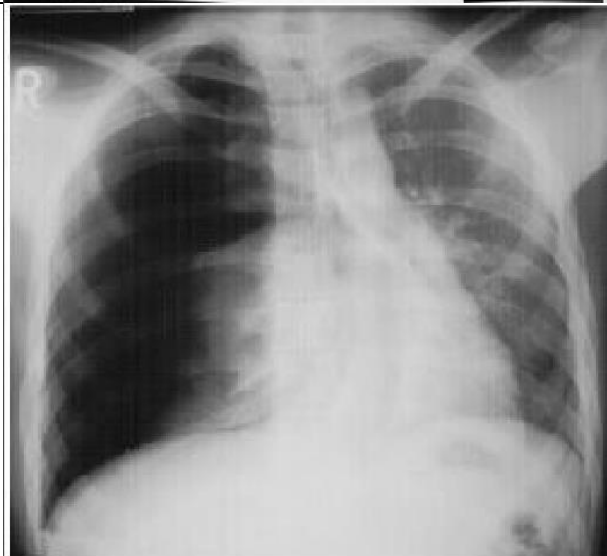
(how ? middle lobe consolidation obscure the right border of the heart)



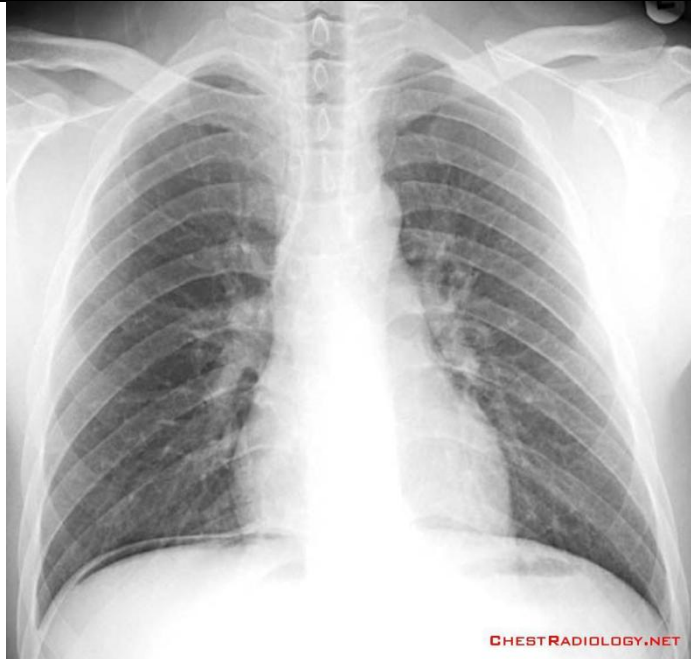
Right middle lobe pneumonia



- Left sided pleural effusion (u can't see the costovertebral angle)
- Causes : Malignancy , pneumonia



- right tension pneumothorax
(how ? we are masters of pneumothorax x rays
:P we don't need to know how :P .. just notice
the loss of lung markings + hyperlucency)



Perforated viscus , fluid under the diaphragm



* It's a hard x ray .. anyway
- notice on the right , there is decrease in lung markings , that means the right lung has a problem
- in the left side , the lung markings are normal or increased
- this happen in something called " open pneumothorax " , they make a hole in one of the lungs , so that lung will get shrunken , the other lung will enlarge as compensation ..
* Causes : injuries , Blast injury ,Shotgun wound

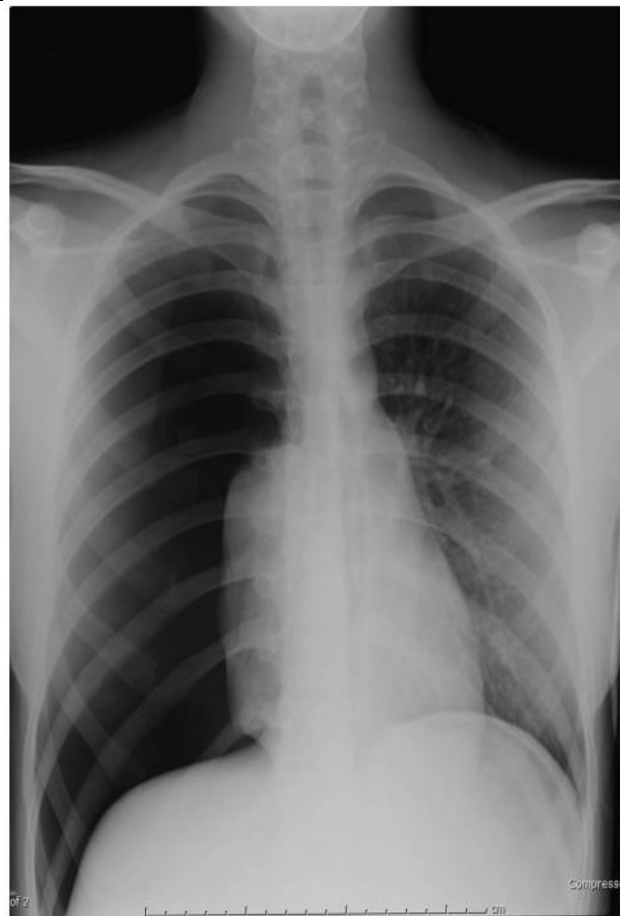
watch this : <https://www.youtube.com/watch?v=NjIzRjEgEeE>
Check this : http://www.fprmed.com/Pages/Trauma/Open_Pneumothorax.html



Foreign body aspiration



* hyperinflated (how ? flatted diaphragm)
* seen in : obstructive lung diseases due to air trapping , as in COPD , Asthma



Right sided Tension Pneumothorax
بس مش عارف مال قلبه زي الي باله ليفة جلي



* pleural effusion , give causes :

- 1- heart failure
- 2- malignancy
- 3- pneumonia
- 4- TB
- 5 – Renal failure



Cough + fever

Dx : pneumonia

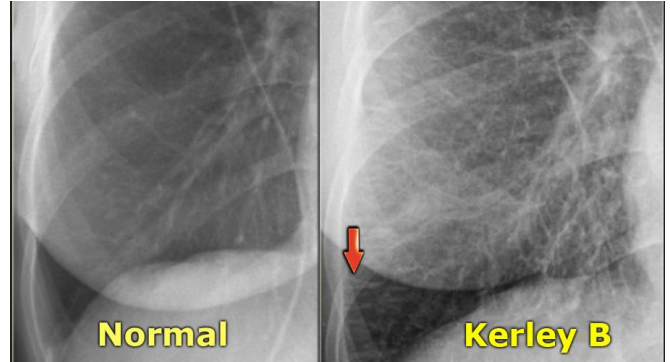
TT : Antibiotic

بتحس هالصور الهدف منها : كيف تتعلم ان تشخص من اول
نظرة .. عالريحة .. بدون هستوري حتى :3



* Name findings ?

1. Cardiomegaly قلب كبير
2. Redistribution of blood flow to the nondependent portions of the lung and the upper lobes (this is what the dr said)
3. Pulmonary edema (bilateral diffuse pulmonary infiltrate)
4. Kerley B lines (sign seen on chest radiographs with interstitial pulmonary edema. They are thin linear pulmonary opacities caused by fluid or cellular infiltration into the interstitium of the lungs)



- 1- Bilateral hilar lymphadenopathy
- 2- sarcoidosis /TB

(how and why ?

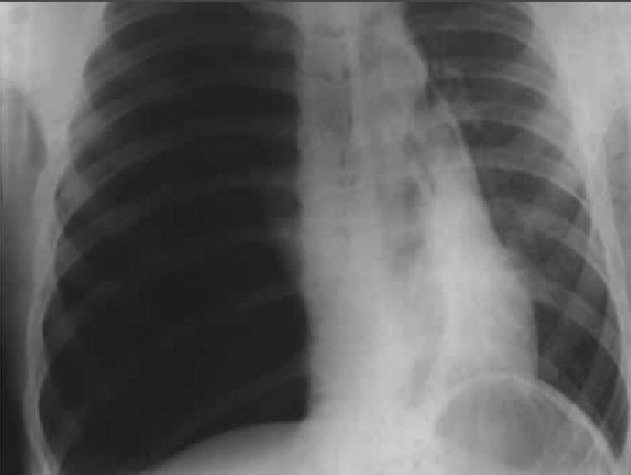
- hilar area is an area that contain vessels, bronchi and lymph node
- in normal X-ray , u must not see the Lymph nodes in the hilar area
- if u see them , then they are calcified due to either sarcoidosis or TB)

(check this pls :

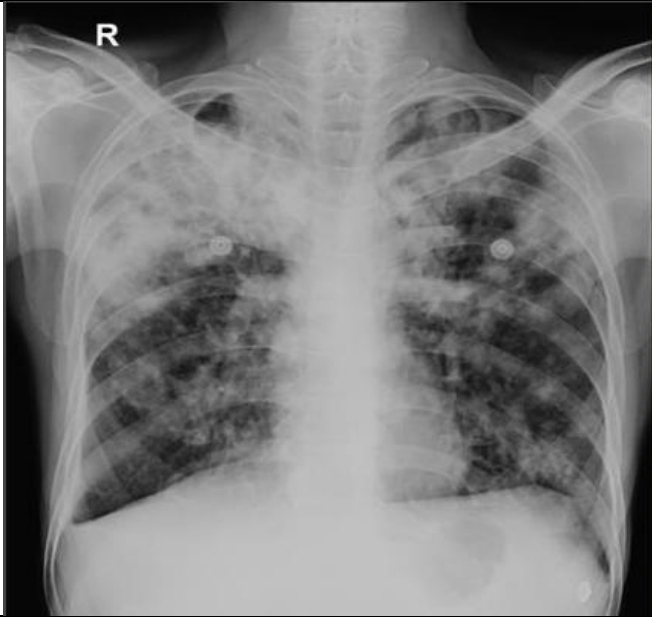
http://www.radiologymasterclass.co.uk/tutorials/chest/chest_pathology/chest_pathology_page2)



- * 2 findings :
1. increase of lucency in right lung .
 2. mediastinum shifting to left side .



- 1- Hyperlucency in the right side with mediastinal deviation to the left
- 2- right-sided tension pneumothorax



1. Diffuse Bilateral Pulmonary Infiltrate .

2. Pulmonary Edema .

pls see this link and look at other images :

<https://radiopaedia.org/articles/pulmonary-oedema>



* 2 findings ?

- A: Cardiomegaly
- B. Pulmonary Congestion (congestion = edema)



* Finding ?

- Cardiomegaly

* 2 causes in 26 y old male ?

- cardiomyopathy , heart valve diseases

* 2 causes in 60 y old male ?

- Congestive heart failure due to HTN

- Hemochromatosis



- Cardiomegaly .
- Kerly B lines .
- Left side heart failure

[Fractures and other strange things]



Smith's fracture : fracture of the distal radius
It is caused by a direct blow to the dorsal forearm or falling onto flexed wrists



Xray نميزه عال

cause anterior displacement

الي فهمته من النت انه يكون في

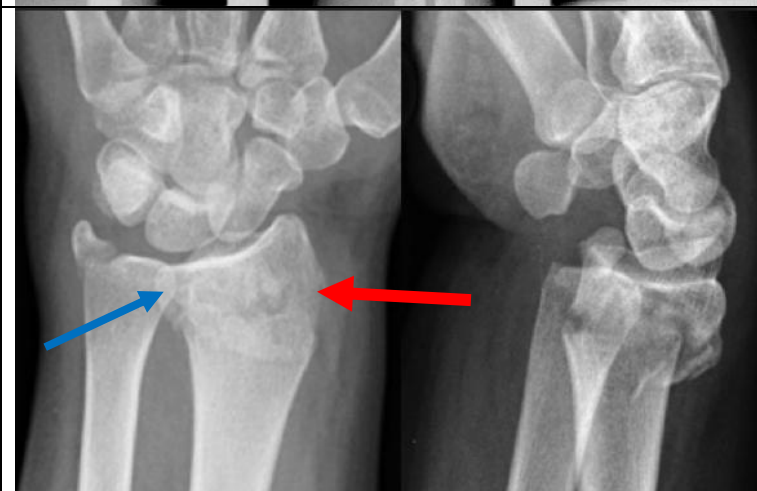
fracture line ... " The fracture line is usually evident, although in undisplaced or mildly impacted fractures it can be difficult to see "

يعني مش ضروري يبين مرات 3:

بالصورة الي تحت مبين



<http://drvivekpandey.in/files/images/Slide12.jpg>



Colles fractures : fall onto an outstretched hand .. result in fracture of the distal radial metaphyseal region

كيف نميز عال

XRAY

حسب ما فهمت من النت بتطلع عال

RADIUS

اذا شفت خط كسر لبرا مثل هاد بكون COLLES

(which means displacement happen ?

لاحظ بالصورة كيف العظمة رجعت لورا عند (posteriorly) السهم الازرق



other images :

<https://radiopaedia.org/articles/colles-fracture>

https://upload.wikimedia.org/wikipedia/commons/d/dc/Colles_fracture.JPG

displacement happen posteriorly

تخيل الكسر كيف صار ولوين العظم بده يروح نتيجة لهاد الكسر



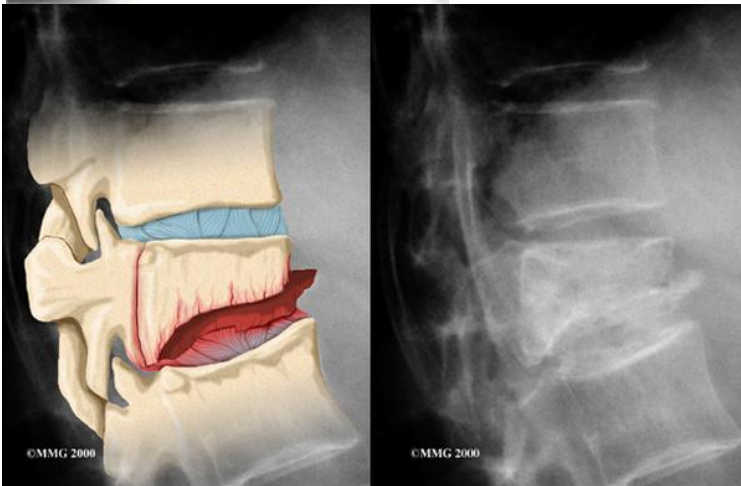
الصور الي هون من السنوات السابقة
and all are colles



Spinal compression fracture



Spinal compression fractures (from google)



Osteoarthritis (how ? narrow joint space)

in the 2nd image , Bone spur = osteophyte , common finding in osteoarthritis

Management :

- surgery (Joint replacement surgery, or arthroplasty)
- Physical and occupational therapy
- Pain relievers and anti-inflammatory drugs

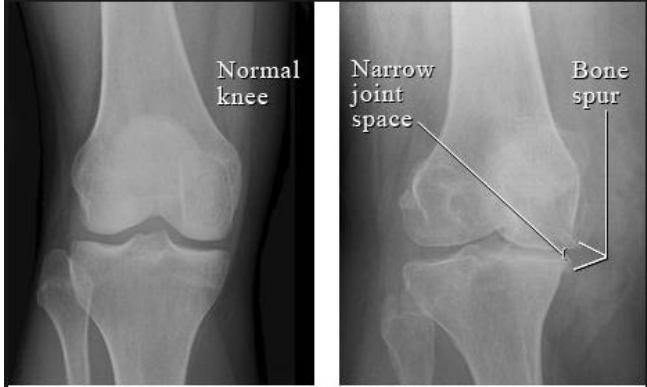
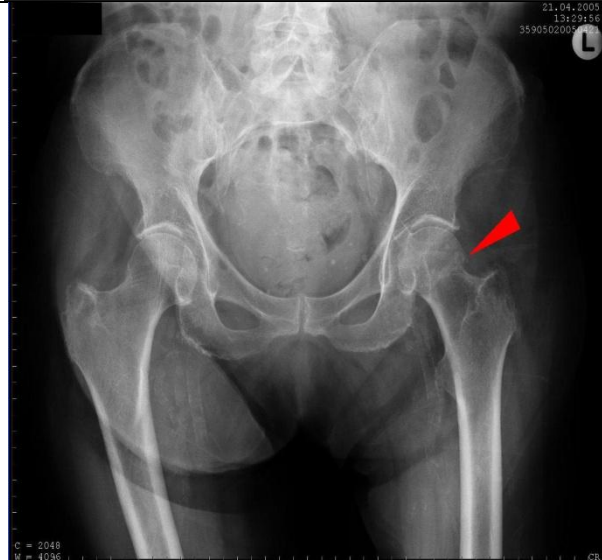


Figure 1

Figure 2

femur fracture (osteoporosis)



1. Right Maxilla bone Sinus filled of pus "Hyperlucency" .
2. Sinusitis .





1. Sprcondylar fracture
2. Neurovascular injuries , Instability , Myositis ossificans



Fracture in the fifth metacarpal bone



الصورة هاي تحتاج للتامل .. والتركيز ..



نلاحظ ان كلمة leukocyte

مكتوبة جمب هذا اللون الغامق .. اذا هذا المريض عنده

leukocytosis

cause dipstick is based on color changes

فهو بده ياك تستنتج ذلك من خلال دقة ملاحظتك للون