Important Areas to Recognise

- Normal
- Hypertension & LVH
- STEMI & Ischaemia
- Arrhythmias – bradycardia & tachycardia
- Miscellaneous
  - Metabolic disturbances
  - Hereditary cardiac disorders
  - Drug side-effects
Avoiding errors in ECG interpretation

Go forwards not backwards through the ECG

Shortcuts in unfamiliar territories can be misleading

When lost, go slow!

Suggested Six Step System

1. Ignore machine generated diagnoses!
2. Rate
   • Ventricular rate vs atrial rate
   • 300 divided by big square
   • Count QRS on ECG x 6 (10 seconds)
3. Rhythm – 3 features
   • Atrial activity, ventricular activity, relationship between two
   • Lead II? Other leads V1 & V2 (look up/down also)
4. QRS
   • Is it broad (3 small squares, 120ms)? If so QRS up it is RBBB (Upright) and down LBBB (down left)
   • Height: Tall (voltage criteria LVH) or small / poor R wave progression (poor LV, obese, COPD, effusion)
   • Pathological Q waves
5. ST/T wave segments:
   • Walk around the heart V1 – V3 then V4 – V6 then I & aVL then II, III, aVF
6. Other bits
   • Inherited or acquired abnormalities
   • WPW, LQT, Brugada, ARVC
   • Hyper/hypokalaemia
   • QTc interval – measure yourself V2 or V5 and use Framingham calculator (QTc8 machine wrong)
What does this show? Does it matter?

1. Atrial Flutter
2. Atrial Fibrillation
3. Flutter/Fib?

Atrial Flutter with 4:1 block
Atrial Flutter with 4:1 block

57yr male COPD No Sx, GP sent in
47yr male: Asx; GP worried

Intermittent dizziness 74yr
53yr female: OPD intermittent palpitations

79yr male: Short of breath
67yr FH
Premature Death

69yr female:
OPD
Palpitation &
SOB
Referral: 75yr Chest Pain ?ST changes

67yr male: Routine ECG GP
LVH +/- Strain

ECG & LVH
Sensitivity 30-50%
Specificity 80-90%
Prognostic

Referral:
84yr male dizziness
Referral: 75yr female palp ?Mx

ACU: Short of breath
From Heart beat to Heartache: *Clinical Cases in Arrhythmia*

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What is this?
83yr male: SOB & Dizzy

Normal pacemakers
To treat significant slow heart beats

Implantable Cardiac Defibrillator (ICD)
To treat dangerous fast heart beats

Cardiac Resynchronisation Therapy (CRT)
To treat heart failure (with LBBB)

Any combination of the above e.g. CRT-D

All are inbuilt Holters
OPD: 52yr female
Recurrent Palpitations

Approaching Tachycardias

Narrow QRS complex
- Sinus tachycardia
- Atrial fibrillation
- Atrial Flutter
- Atrial Tachycardia
- AVRT (WPW)
- AVNRT

Broad QRS complex
- SVT with BBB
- Ventricular tachycardia
- (Pre-excited AF - WPW)
- (Pacemakers)
Bradycardia & Pacing

- Symptoms syncope & pauses (>3 secs)
- High degree block (2nd or 3rd) + symptoms
- Tachy-brady syndrome
- Exclude drugs (e.g. eyedrops)
- Nocturnal pauses common
- 24hr tape - false reassurance

16yr old recurrent fits – Diagnosis?

ECG traces showing...

[ECG traces]

31

32
21yr
Palpitations: Advice?

SVT - AVRT
Referral:
72yr female
SOB ‘?why ST’