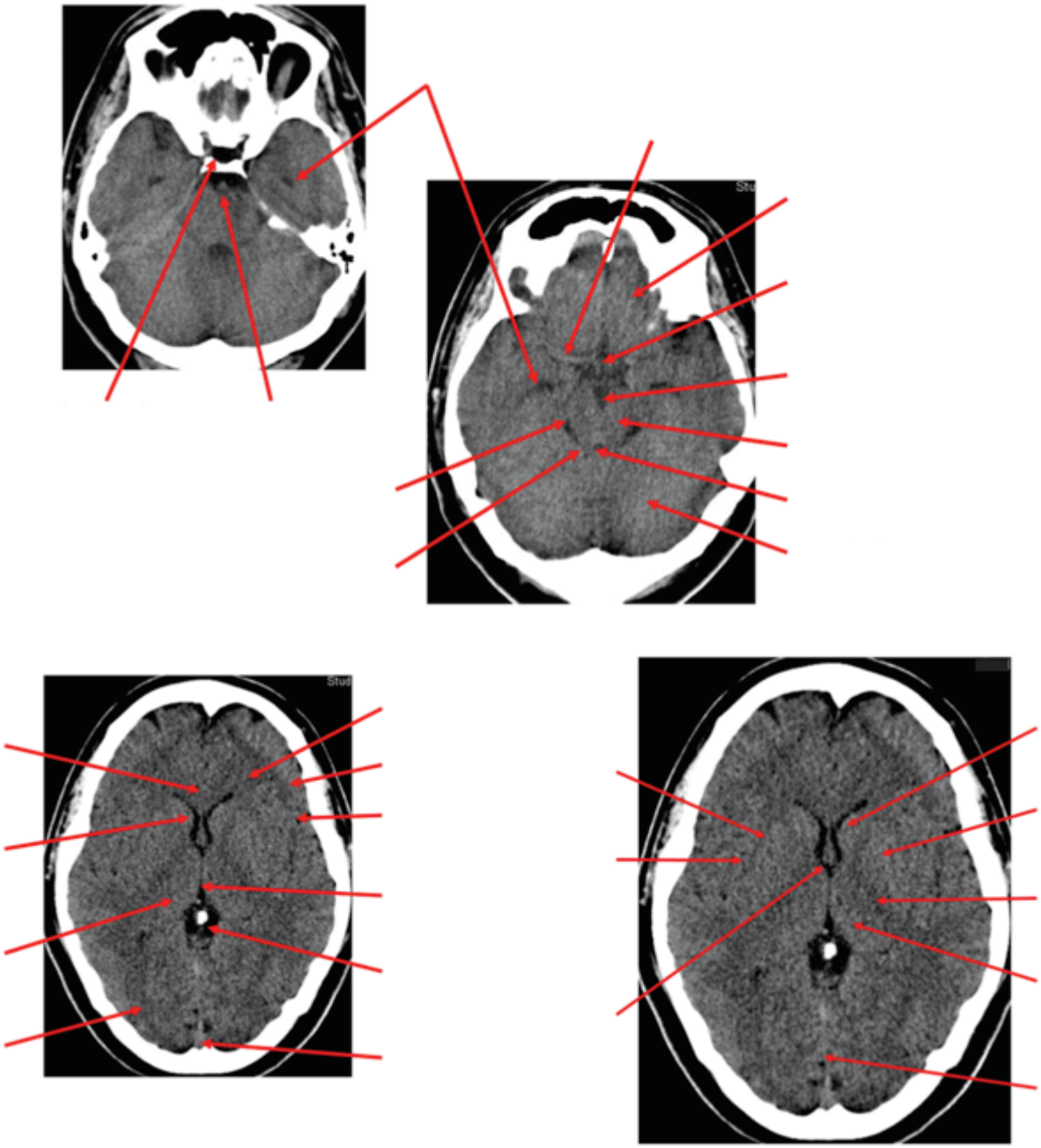
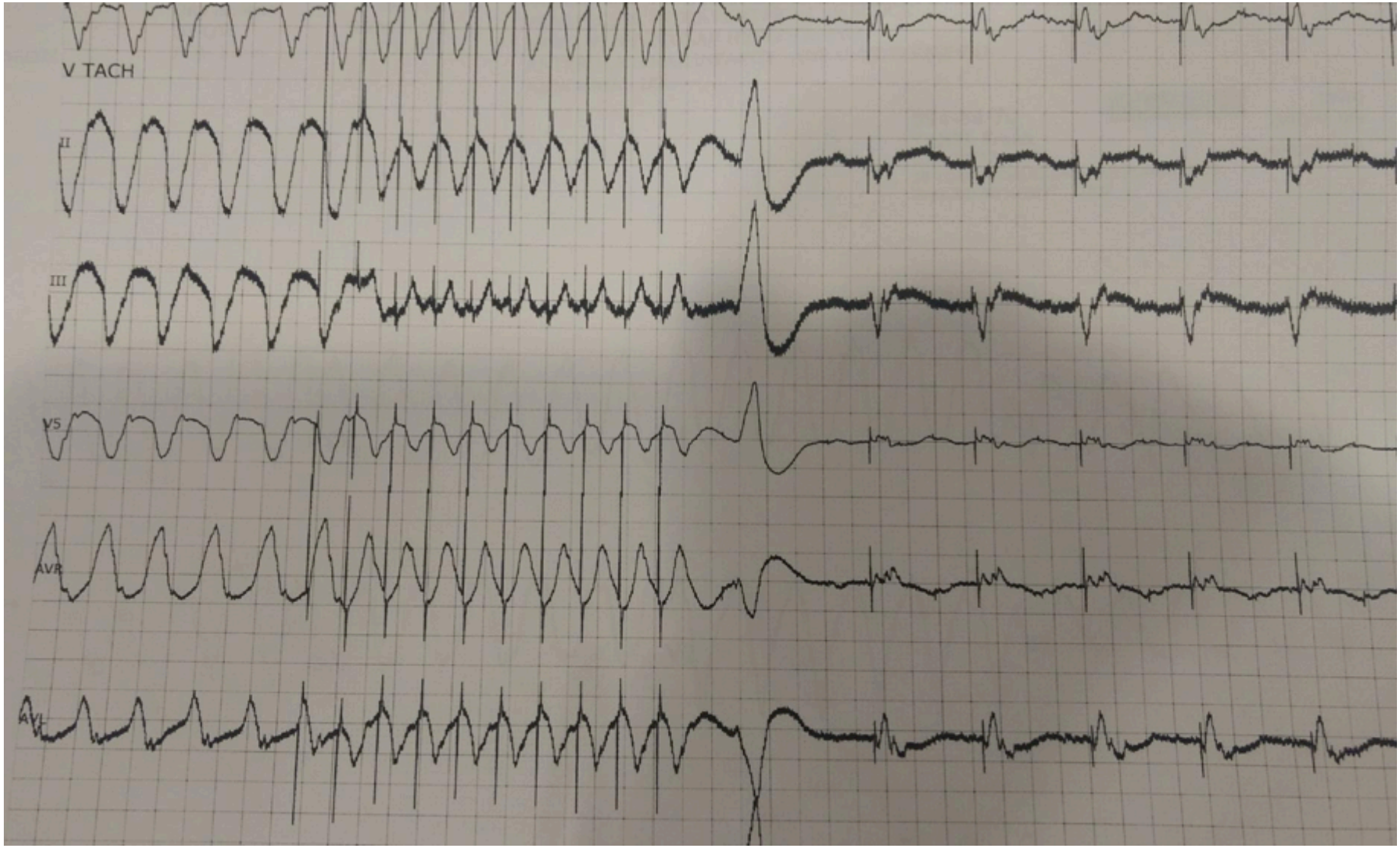
QUIZ 18th Oct 2017 (answers below)

1. **Label the following diagram.**

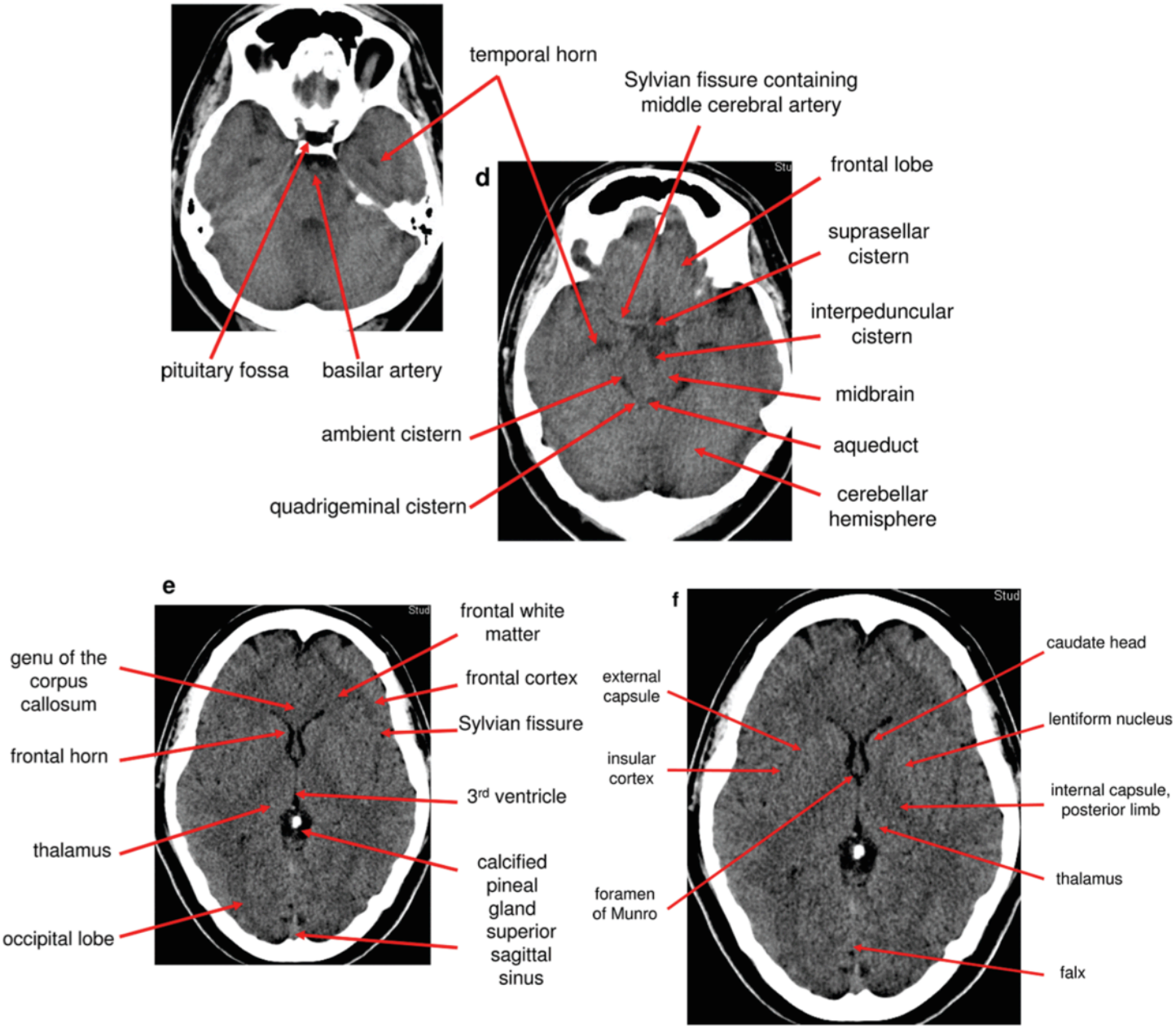


2. **Describe and interpret the following ECG.**


V TACH
II
III
V5
AVR
AVL

QUIZ answers 18th Oct 2017

1. **Label the following diagram.**



Renowden S Normal Anatomy of the Brain on CT and MRI with a few Normal Variants BMJ Journals Practical Neurology 20 12;12:225–233.

2. Describe and interpret the following ECG.

- *There are 5 beats of monomorphic ventricular tachycardia (VT) ~160/min.*
- *This is followed by a burst of 10 x pacing spikes ~215/min that are all electrically captured.*
- *There is then one ventricular ectopic beat followed by a pause.*
- *Atrial pacing 80/min with V sensing then commences for the remaining 5 beats.*

➔ *Successful anti tachycardia pacing (ATP) to revert VT*
With thanks to Andre Tay (SVH EPS CNC)

Many patients that require an Automatic Implantable Cardioverter-Defibrillator (AICD) have episodes VT, or have a period of VT preceding ventricular fibrillation (VF).

Even though it can be lifesaving, delivery of a shock via an AICD is painful and distressing for the patient. Delivery of multiple shocks is very traumatic, and if the person is conscious, or the shocks are inappropriate, the patient can develop a post-traumatic stress disorder and require significant psychological support.

Monomorphic VT due to prior myocardial infarction is due to a reentrant circuit. Viable myocardium is interlaced with non-viable myocardium and two circuits can form a loop with different rates of conduction so that one circuit can travel back up the other and arrive at the beginning just in time for the refractory period to be over again and so the excitable myocardium depolarises once more down the faster circuit.

Overdrive pacing depolarises the excitable myocardium before the current gets back to it – so it is at a faster rate than the VT – "overdrive pacing". This means that the excitable "bridge" is no longer there to continue the circuit, and it stops.

This is a simple 2 dimensional model of what is happening, whereas it is obviously 3D and a bit more complex. This is why it only works 80 – 90% of the time and there is a risk of actually accelerating the VT. If ATP doesn't work after a predetermined set of attempts, or the rate accelerates or goes into VF, the AICD will shock the rhythm.

ATP offers the potential for painless termination of VT, potential avoidance of VF and increases the life of the AICD. An AICD can now be thought of as an ATP device with defibrillation as back up. All AICDs also have bradycardia demand pacing potential in addition to anti tachycardia pacing.