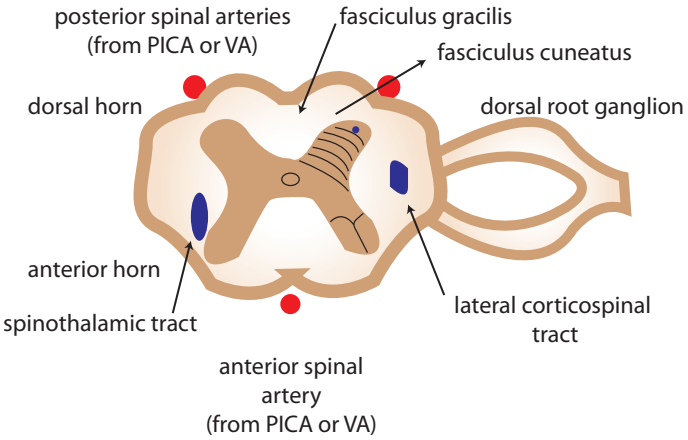
First 2010
VIVA 8

Draw a cross-sectional figure of the spinal cord, at the level of C3, and describe the functional anatomy and blood supply of the spinal cord at that level. Candidates were asked to draw a cross-sectional figure of the spinal cord, at the level of C3, and tested on their ability to describe the functional anatomy and blood supply of the spinal cord at that level. Candidates were also asked about local anaesthetic drugs, their mechanism of action, pain (and asked to define pain) and non-opioid analgesics, in particularly ketamine and the pharmacology of ketamine.



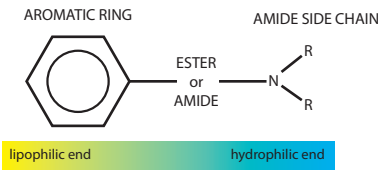
"Please give a definition of pain"

an unpleasent sensory or emotional experience associated with the actual or potential tissue damage or described in terms of such damage.

"Describe the pharmacology of ketamine"

is a phencyclidine derivative which has analgesic and anaesthetic properties
presented as a clear solution and is a racemic mixture with the left enantiomer x2-3 potency
its action is through non competitive antagonism of NMDA receptors and weak GABA action
effects: increases adren and norad leading to increased SNS activity which mask its mild cardio depressive qualities. the RR is often increased and it causes bronchodilation. CNS causes a dissociation between the limbic and thalamic regions. CBF and ICP are increased.
side effects: emergence delirium and dysphoria with concerns in head trauma patients and raised ICP
it has a rapid onset and a short duration of action, with low bioavailability if given orally
Vd is 3L/kg, minimally protien bound and high lipid solubility enabling it to quickly cross the BBB
metabolised hepatically by hydroxylation nd demethylation with an active metabolite norketamine
biphasic half life due to the active metabolite, with alpha half life 10-15 minutes and beta 2.5hrs
excretion is in the urine

"Please draw a local anaesthetic"



"What determines the relative potency, duration of action and onset of action with LAs?"

Potency - lipid solubility	bupivicaine is 8 times more potent then lignociane
Duration - protien binding	bupivicaine is 95% bound c/w lignocaine which is 75%
Onset of action - pKa	bupivicaine pKa is 8.1 (15% unionised) lignocaine pKa 7.9 (25%)