Sept 2011
QUESTION 08

Explain the physiological factors that prevent gastro-oesophageal reflux

Gastro oesophageal reflux (GOR)
- characerised by a backflow of gastric contents into the oesophagus
- the gut pH is 1.5-3.0 therefore damage may occur to the lower oesophagus
- chronically leads to metaplasia (barrett's) and malignancy
- caused by incompetence of the barriers at the gastro-oesophageal junction
- occurs when the pressure gradient between the lower oesphageal sphincter and the stomach is lost

Gastro oesophageal junction
- antireflux mechanisms
  - lower oesophageal sphincter
    - usually tonically contracted by myogenic and neurogenic mechanisms
    - tone is increased by gastrin, motilin and alpha adrengeric stimulation
    - tone is decreased by secretin, glucagon, VIP and GIP
    - normal pressure gradient is 30mmHg above that of the stomach
  - valve like closure at the end of the oesophagus which collapses with increased gut pressures
  - crural diaphram provides a physiological sphincter
  - the anatomical location of the junction below the diaphramatic hiatus also prevents GOR