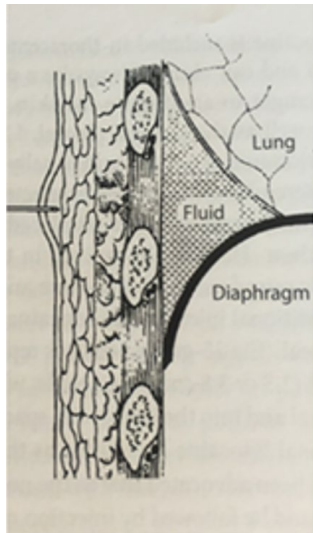


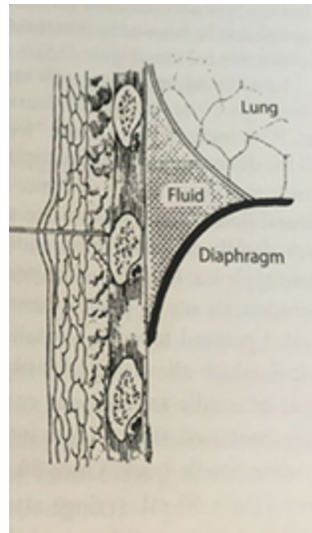
## Online Appendix 1 Local anaesthetic for pleural procedures

After injecting the skin and subcutaneous tissues, the needle is advanced to the periosteum and infiltrated with a small amount of 1% Lignocaine. The needle is advanced into the pleural space whilst injecting small amounts of local anaesthetic along the tract. Once the entry into the pleural space is confirmed by aspiration of air/fluid (or using ultrasound guidance), the needle is withdrawn slightly until the needle tip is sitting on the outside of parietal pleura. The remaining local anaesthetic is then deposited over the parietal pleura as this the most sensitive part of the needle track (Figure 1).

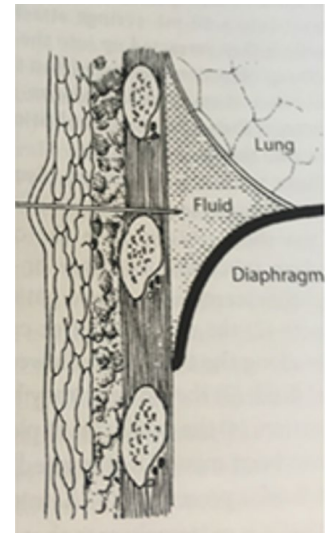
**Figure 1:** Methodology for injecting local anaesthesia for pleural procedures



(a) Skin injection



(b) Periosteal injection



(c) Entry into pleural space