

### III: Regional Anaesthesia I

#### 09. Double and single edge sign hydrodissection: An experimental study

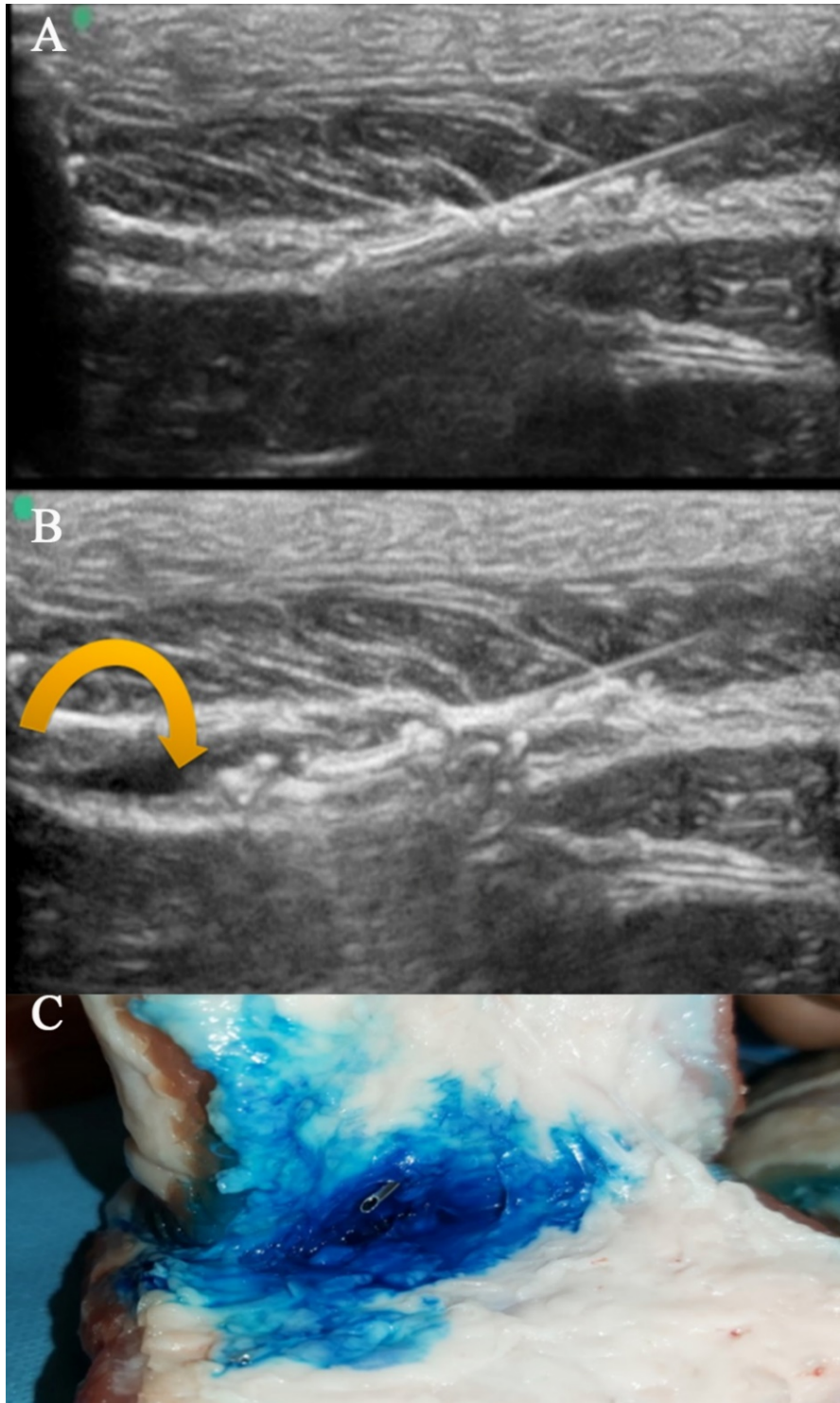
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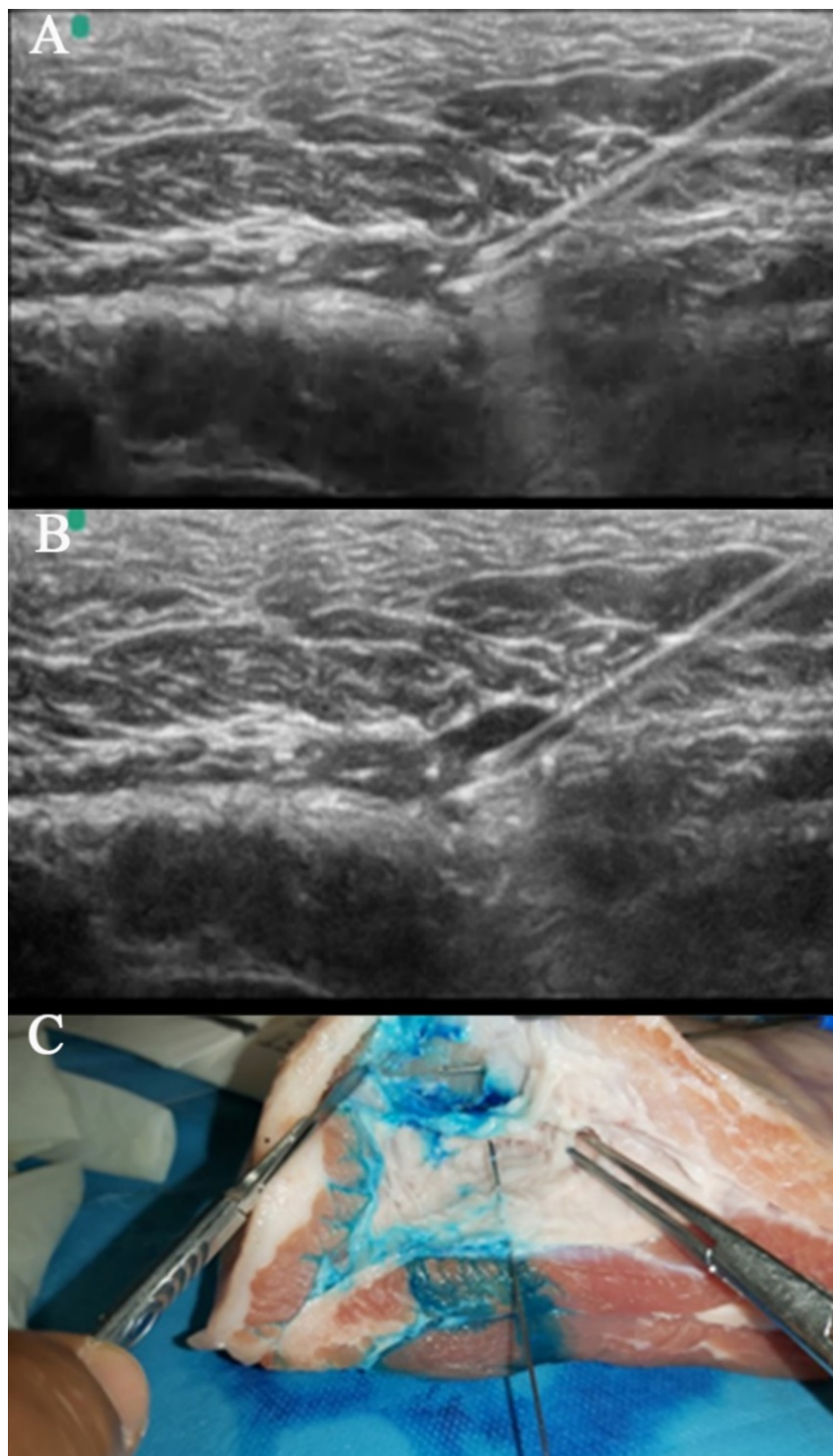
**Introduction:** Achieving correct hydrodissection in fascia plane blocks increases their success rate. With the use of ultrasound, it exceeds 80%, which is still far from 100%. This experimental study addresses the causes that lead to an approximate 20% failure probably due to the injection of the local anaesthetic between epimysium and fascia and not between fascia and fascia, as it should be. This leads to the corresponding ultrasound images: double-edge (correct sign) and single-edge (wrong sign).

**Method:** The experiments were conducted with abdominal aponeurosis of dead pigs with the use of ultrasound and ejection with the use of epidural needles. First, the analogue sonographic images were generated and then, the surgical exposure of the tip of the needles and the distribution of the local anaesthetic was performed.

**Results:** When the Fig. 1a,b were captured showing the right placement of the needle and the correct hydrodissection (double-edge) that was obtained, the Fig. 1c was acquired by carrying out the surgical exposure of the tip of the needle between the fascia.



When by mistake the Fig. 2a was considered to be correct and the hydrodissection was executed, the Fig. 2b (single-edge) was generated with the local anaesthetic between epimysium and fascia like it is revealed in the Fig. 2c of the surgical exposure of the tip of the needle.



**Conclusions:** The picture of double-edge is important for the successful injection of the local anaesthetic. In the contrary, the picture of the single-edge leads to the accumulation of the local anaesthetic between epimysium and fascia and the potential failure of the block.