True resistance to local anaesthesia has been poorly reported in the literature. Failure to achieve anaesthesia following infiltration of local anaesthetics has been more commonly attributed to other causes such as technical failure, infection and defective medication\textsuperscript{1}. We present a case of true local anaesthetic resistance despite adequate technical administration. A 22-year-old man, attended the regional plastic unit in Northern Ireland following a crush injury to his non-dominant left index and middle finger. The injury resulted in amputation of his index finger distal phalanx requiring terminalisation and extensor tendon damage to the middle finger. He had a background history of Cohn’s disease, managed with mesalamine, azathioprine and infliximab injections. The patient gave a clear history of local anaesthetic resistance following previous visits to the dentist, experiencing painful procedures that had to be aborted. However, this was underestimated at initial assessment and the patient was scheduled for terminalisation and wound exploration under local anaesthetics (ring block). He received a total of 15 ml of one percent lidocaine and 5 ml of 0.5% levobupivacaine with no effect. A further attempt to block the median nerve and superficial radial nerve with 10 ml of one percent lidocaine failed. The procedure was abandoned due to extreme pain and rescheduled under general anaesthetic.

Amino-amides are class of local anaesthetics commonly used in practice due to their nerve blocking properties. They inhibits transmission of pain signals by inactivating sodium channels\textsuperscript{2}. Frequently used medications include lidocaine, bupivacaine and levobupivacaine. Causes for failure to achieve anaesthesia following injection of local anaesthetics include technical failure, infection, defective medication and also following scorpion bite. True resistant to local anaesthetic has commonly been contested amongst physicians. The pathophysiology for complete failure of local anaesthetics maybe attributed to mutation in sodium channels through which these medications exerts their action\textsuperscript{3}.

Few case studies reported complete failure to achieve skin anaesthesia after injection of lidocaine. In our case, the patient reported clear history of failure to prior local anaesthetic procedure. He had no infection and the drug was obtained from different vials, no similar incidents were reported with the same batch of medications. Ring block was performed by two different surgeons which excludes technical failure as an aetiology. More commonly, patients report variable level of success following local anaesthetic rather than complete failure. A study by Trescot examined 250 patients who attended the pain clinic and reported failure of local anaesthetics. The test included injection of small amount of local anaesthetic subcutaneously. Forty-three patients were hypaesthesic to lidocaine. However, the author did not specify rate of complete failure, number of previous injections of local anaesthetics that
may cause tolerance and the indication to attend the pain clinic. Unrecognised patients can lead to unpleasant clinical experience undergoing minor operations and unnecessary interventional risk. It may also potentially lead to toxicity from administration of large doses if the condition is not recognised. This is especially true for epidural and spinal analgesia where invasive procedures are undertaken to deliver local anaesthetics.

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References