CERVICAL ROOT BLOCKADE WITH ULTRA-LOW VOLUME OF LOCAL ANESTHESIA RELIEVES POSTOPERATIVE SEVERE REFERRED SHOULDER PAIN

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Postoperative referred shoulder pain after abdominal surgery is not uncommon. The incidence is reported about 35-80%. Pain fortunately resolved with basic interventions at most of the patients but within severe conditions it might be challenging. Pain last about 72 hours postoperatively in rare cases. The referred shoulder pain mechanism is mainly phrenic nerve irritation. The phrenic nerve arises cervical 3,4,5 spine roots. The diaphragm and shoulder share the same nerves, causing referred pain in the cervical 4 dermatome. We would like to share our experience of severe referred shoulder pain cases whom we performed cervical 5 root blockade.

At our institution we routinely use epidural analgesia for almost all major abdominal surgeries. At early postoperative phase patient's analgesia needs are usually none or less. To the patient who has severe referred shoulder pain we first re-evaluate non-opioid analgesic drugs (Non-steroid anti-inflammatory drugs, paracetamol) and administer small amounts of opioids (fentanyl, morphine). If these measures are not sufficient, we advise cervical root blockade to the patient. Brachial plexus examined with ultrasound and cervical roots 5,6,7 are identified. **5th cervical root** blocked with ultrasound guidance with in-plane technique. **2 ml** of local anesthesia (0,5% Bupivacaine) applied around the nerve sheath.

Figure: Interscalene region anatomy. Cervical nerve roots.

After the nerve block within 10 minutes patients pain scores are usually around 0/10. With the use of ultra-low volume local anesthesia side effects like Horner syndrome, diaphragm paralysis (at clinical level) usually not seen. The blockade resolves with 12 hours. If pain persists it usually can be controlled easily.

Cervical root blockade with ultra-low volume (2ml) of local anesthetic is an effective method for severe referred shoulder pain cases. Opioid consumption also reduced at early post-operative time. In carefully selected cases referred shoulder pain resolved quickly, effectively and with minimal side effects.