**SUMMARY**

CPB is a widely used anesthesia technique for head and neck surgeries . **(2)** Depending on the type of surgery, the plexus can be blocked either at a superficial or a deep level. The superficial branches of the plexus innervate the skin and superficial structures of the head, neck and shoulder. The deep branches innervate the muscles of the deep anterior neck and the diaphragm. The deep CPB is used for deeper surgeries of the neck, such as carotid artery or thyroid surgery, and the superficial CPB is used for superficial cutaneous surgeries of the head and neck. **(31)**

Carotid endarterectomy surgery is commonly performed under CPB . **(38 , 111)** .This is presumed to offer advantages over GA in terms of monitoring neurological function during cross-clamping of the carotid artery since, in conscious patients, speech, cerebration, and motor power provide early measures of inadequate cerebral perfusion. Some studies also claim lower shunting requirements, lower cardiovascular morbidity, and shorter hospital stay. **(6)** Traditionally, the common methods of CPB are termed ‘deep’ or ‘superficial’. The deep block, as described by Moore **(68)** or Winnie and colleagues , **(25)** consists of identifying the transverse processes of upper cervical vertebrae C2–4 and injecting LA directly into the deep ( prevertebral) cervical space. This may be achieved either as three separate injections or as a single injection. The superficial block incorporates a variety of procedures. The simplest is a subcutaneous infiltration of LA along the posterior border of SCM muscle by either the surgeon or the anaesthetist. An ‘intermediate’ block is one where the injecting needle pierces the investing fascia of the neck, deep to the subcutaneous layer, but superficial to the deep cervical (prevertebral) fascia . **(6)** It is also possible to use a ‘combined block’, consisting of a deep injection and a superficial or intermediate injection . Practitioners may prefer one block to another, but no consensus exists on the efficacy of one block when compared with another. However, it has been suggested that complications of the technique are related to the deep injection and not the superficial (or intermediate) injection. **(111)** These complications include intrathecal or intravascular injection, respiratory problems related to phrenic nerve paralysis, or local anaesthetic toxicity.

Nerve blocks generally requires safe and accurate localization of nerves. The block needle must be placed in close proximity to the nerve without injury to the nerve or adjacent structures **(9)** . Ultrasonography allows close examination of the anatomical structures for successful nerve block . The use of ultrasound, with appropriate experience and training, enables the regional anesthesiologist to identify the target injection site for LA and its adjacent structures along with all structures in the potential path of the needle from skin to target. Real time imaging during injection of the LA allows the operator to assess its spread and adjust the position of the needle tip as necessary to ensure placement of LA solution around all the appropriate nerves. **(24)** Ultrasound guidance has advantages over the traditional nerve localization techniques of landmarks and nerve stimulation. These include higher success rates, shorter onset times and a decrease in LA needs and complications. **(11)**

The aim of this study was to assess the feasibility ,efficacy , safety and patient satisfaction of ultrasound-guided unilateral combined superficial & deep cervical plexus block as a sole anesthetic technique in neck cancer surgery .

Forty patients ,ASA 1,2 , between the ages of 18 and 65 years, both genders , body mass index (BMI): between twenty and forty undergoing elective neck cancer related surgeries were included in the study . All patients received unilateral sonar-guided combined superficial & deep cervical plexus block using levobupivacaine as a sole anesthetic technique . The onset and effectiveness of the block were assessed and recorded . Intraoperatively , LA supplementation with lidocaine 2% in 1 ml increments was given by the surgeon if required . A block was considered unsuccessful if infiltration of more than 5 ml of lidocaine was used intraoperatively.

Intraoperatively, hemodynamics : heart rate , mean blood pressure , SPO2 readings were recorded just preanesthesia , after surgical incision and at 15min intervals throughout surgery and then at 1,3,6 hours postoperatively .

During the procedure , all patients were monitored for the potential CPB-related complications , such as phrenic nerve blockade manifested by dyspnea &heavy chest sensation , LA toxicity , subarachnoid and epidural injection ,Horner's syndrome , hoarseness, dysphagia and hematoma .

After the end of the operation , the patients were transferred to the recovery room and pain scores were recorded at hourly time intervals for 6 hours using visual analogue pain score (VAS). Patients’ satisfaction with the block was recorded .

Rescue analgesia was given for VAS >4 using non-steroidal anti-inflammatory analgesic (ketorolac 30 mg IV slowly) and VAS >6 using opioid (3mg morphine) . Time of analgesic administration and the postoperative analgesic duration were recorded .

The postoperative analgesic efficacy of CPB was assessed according to VAS scores, 1st time analgesic requested , total patient's narcotic and non-narcotic analgesic requirements within 6 h after injection.

The sonar-guided superficial and deep CPB proved successful in all studied patients (sensation test = 2 and no patient required infiltration of lidocaine intra-operatively). During surgery, conversion to GA was not necessary in any case. None of the patients requested analgesics within 6h after CPB. One case of Horner’s syndrome ,and another case of hoarseness of voice were recorded . However, no further CPB-related complications occurred during the hospital stay.

The study provides new evidence that in neck surgical procedures RA consisting of an ultrasound-guided combined superficial ( subcutaneous and intermediate) and deep CBP may be a suitable alternative whenever GA is not indispensable or when patients are at high medical risk or unfit for GA.