# Comparison of Superficial Cervical Plexus Block Versus Local Infiltration for Pain Relief During Internal Jugular Vein Cannulation

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**ABSTRACT**

**Introduction:** Cannulation of internal jugular vein is an indispensable requirement for patients undergoing cardiac surgeries. Generally it is done before induction by giving patients mild sedation and local infiltration of local anaesthetic agent over the neck. In spite of that, patients do complain of discomfort during the procedure which is then accompanied by haemodynamic changes, especially during subcutaneous tunneling and placement of sutures to secure the cannula. The superficial cervical plexus innervates the skin of the jaw, neck and the area close to the clavicle. Keeping this in mind, this study was designed to compare the analgesic effect of the superficial cervical plexus block with local infiltration, and assess the sympathetic response during internal jugular vein cannulation.

**Material and Methods:** An open labelled, prospective, randomized controlled trial was conducted to compare pain relief during internal jugular cannulation after local infiltration with that after superficial cervical plexus block. 200 ASA grade III & IV patients scheduled for various cardiac surgeries were recruited for this study. They were randomly assigned to receive either superficial cervical plexus block (Group I) or local infiltration (Group 2) for analgesia during the cannulation. Patients were monitored for changes in haemodynamic values and evaluated for pain during various stages of the cannulation procedure. Any side effects were also noted. Due to demographic profile of our patients and the ease of use, a simple verbal pain score was used to assess pain.

**Results:** There was statistically no difference in both the groups with respect to demographic profile like age and sex. The pain scores and values of haemodynamic parameters during the procedure of subcutaneous tunneling/dilatation were lower in Group I than in Group II. The difference was statistically significant. No complications were noted in any groups.

**Conclusion:** The study confirmed that superficial cervical plexus block is superior to local infiltration in terms of pain relief during internal jugular vein cannulation in awake patients. Patients in the superficial cervical plexus block group showed more stable haemodynamics throughout the procedure than those in the local infiltration group.

**Keywords:** Superficial Cervical Plexus Block, Local Anaesthetic Infiltration, Internal Jugular Venous Cannulation, Verbal Pain Rating Scale

## INTRODUCTION

Central venous access is an indispensable requirement for all patients undergoing cardiac surgery. In these patients, it is necessary to have central venous access before induction of anaesthesia. Internal jugular vein (IJV) cannulation is the most preferred route for this purpose. Two commonly used methods to reduce pain experienced by the patient while undergoing placement of the internal jugular vein access by local anesthetic (LA) infiltration and the superficial cervical plexus block have been described.[1]

With local infiltration, the major disadvantages are patient discomfort during insertion of dilator for tunneling and dilating the tract, and pain during suture placement. Superficial cervical plexus block produces a field of anaesthesia with the superior border running diagonally from the occiput through the lower ear to the tip of the chin. The inferior border of this area runs from the sternoclavicular joint along the inferior border of the clavicle and then down the lateral side of the shoulder, and also anesthetizes muscle in the subcutaneous plane. This allows the operator a large area of anaesthesia to locate the internal jugular vein using a high or low approach and then secure the cannula in place. Therefore, the whole procedure including tunneling, dilating and suturing is pain-free. If need of more than one puncture at different site arises, no additional infiltration is required. This is especially beneficial in a teaching institute where practical training may give rise to requirement of more than one puncture, and add to the discomfort of the patient. Effective control of pain remains one of the most important and pressing issue in the field of anaesthesia and surgery, with significant impact on health care systems as hundreds to millions of people worldwide who undergo operations each year experience pain of varying intensity.

Adverse effects caused by pain during IJV cannulation include (but are not limited to):

Cardiovascular system effects: Pain causes stimulation of sympathetic system leading to tachycardia, increased stroke volume, cardiac work and myocardial oxygen consumption. Thus, the risk of myocardial ischemia increases.

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**How to cite this article:** Harshwardhan A. Tikle, Bhaskar Murlidhar Patil. Comparison of Superficial Cervical Plexus Block Versus Local Infiltration For Pain Relief During Internal Jugular Vein Cannulation. International Journal of Contemporary Medical Research 2018;5(9):I6-I12.

**DOI:** http://dx.doi.org/10.21276/ijcmr.2018.5.9.11

Neuroendocrine and metabolic (stress response) effects: Suprasegmental reflex responses to pain result in increased sympathetic tone, hypothalamic stimulation, increased catecholamine and catabolic hormone secretion (cortisol, ACTH, ADH, GH, glucagon, aldosterone, renin, angiotensin II) and decreased secretion of the anabolic hormones insulin and testosterone.

From the knowledge of the above-mentioned biochemical, neurophysiologic and psychological aspects of acute pain, it can be inferred that pain along with its associated reflex responses may result in increased morbidity, and sometimes mortality, in patients with limited or abnormal cardiac function. Studies have so far been done for evaluation of superficial cervical plexus block for anaesthesia in healthy patients but not in critically ill ASA III and IV patients. As discussed earlier, considering the advantages of superficial cervical plexus block, we decided to compare the superficial cervical plexus block with local infiltration of local anaesthetic, to assess quality of analgesia with each technique during internal jugular venous cannulation for patients undergoing cardiac surgeries at our institute.

This study aimed to evaluate the efficacy and safety of superficial cervical plexus block versus local infiltration of local anaesthetic for pain control during internal jugular vein (IJV) cannulation.

**The primary objective was:**

1. To study pain relief caused by superficial cervical plexus block versus local infiltration of local anaesthetic during the procedure of cannulation of internal jugular vein in patients posted for cardiac surgeries.

**The secondary objectives were:**

1. To study haemodynamic changes
2. To study the complications related to the technique and drug
3. To recommend provision of the more effective technique, for providing analgesia for internal jugular vein cannulation, to all critically ill patients

**Assessment of pain**

Pain is a complex, subjective response with several quantifiable features including intensity, time, course, quality, impact and personal meaning. Comprehensive approach to postoperative pain assessment requires evaluation of:

1. Patient perception
2. Physiological responses
3. Behavioural responses
4. Cognitive attempts by the patients to manage pain

Self-report by patient is the single most reliable indicator of the existence, and the intensity of acute pain. Three common self-report measurement tools useful for the assessment of pain intensity and effective distress are:

1. Verbal Pain Rating Scale (VPS)[2]
2. Visual Analog Scale (VAS)[3]
3. Numerical Rating Scale (NRS)[3]

Due to the nature of our population we decided to use simple Verbal Pain Rating Scale instead of VAS or NRS.

**Pain intensity scales**

Verbal Pain Rating Scale[2]:

| Score | Intensity of Pain |
|---|---|
| 0 | No pain |
| 1 | Mild pain |
| 2 | Moderate pain |
| 3 | Severe pain |
| 4 | Very severe pain |
| 5 | Worst possible pain |

**Anatomy of the cervical plexus**

There are five main components of the cervical plexus[4]:

1. The lesser occipital, greater auricular, transverse cervical, and supraclavicular nerves supply skin over the outer ear, anterior neck, scalp posterosuperior to the auricle, and skin above and below the clavicle.
2. The ansa cervicalis, which innervates the infrahyoid and geniohyoid muscles
3. The phrenic nerve, which is the only motor nerve to innervate the diaphragm
4. Contributions to the accessory nerve (cranial nerve XI), which innervates the sternocleidomastoid and trapezius muscles
5. Direct muscular branches, which supply prevertebral muscles of the neck

**Indications of superficial cervical plexus block**

Carotid endarterectomy, tracheostomy, thyroidectomy, parathyroidectomy and superficial neck procedures like excision of neck lymph nodes, excision of thyoglossal and bronchial cysts, internal jugular vein cannulation and for post-operative analgesia in carotid endarterectomy and thyroid surgeries.

Landmarks:

1. Sternocleidomastoid muscle, posterior border of the clavicular head
2. Mastoid process
3. Transverse process of C6 vertebra.

**Distribution of anaesthesia**

Skin of the lower jaw, neck, the occiput, and areas of the chest and shoulder close to the clavicle are rendered anaesthetized by the superficial cervical plexus block.

**Technique of superficial cervical plexus block**

The classical technique of superficial cervical plexus block is as follows[4]:

The patient is positioned supine with the neck slightly turned, and the posterior border of the sternocleidomastoid muscle is identified. At the junction of the upper and middle thirds of the sternocleidomastoid, a skin wheal is raised with local anaesthetic injected to the skin. The needle is directed cephalad toward the mastoid along the posterior border of the sternocleidomastoid in a subcutaneous plane and 2–3 ml of local anesthetic is injected as the needle is withdrawn. Care is taken to avoid entering the external jugular vein. As the tip of the needle reaches the wheal, the needle is turned 180° and moved ahead in the subcutaneous plane directed caudad toward the clavicle along the posterior border of the

| Group | Number of patients | Age Mean ±SD | P Value | Male | Female | P Value |
|---|---|---|---|---|---|---|
| Group I (SCPB) | 100 | 44.23 ±11.63 | 0.13 | 70 | 30 | 0.234 |
| Group II (Local) | 100 | 41.39 ±14.60 | | 61 | 39 | |

**Table-1:** Comparision of demografic profile of patients

| Number of attempts | Group I | Group II |
|---|---|---|
| 1 | 77 | 81 |
| 2 | 19 | 16 |
| 3 | 04 | 03 |

**Table-2:** Number of attempts required for cannulation

| Group | Mean ±SD | P Value |
|---|---|---|
| Group I SCPB | 1.27/0.52 | 0.486 |
| Group II local | 1.22/0.48 | |

**Table-3:** Mean number of attemps for cannulation

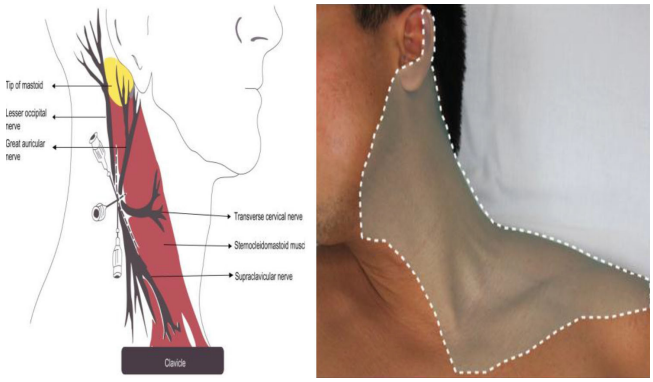


**Figure-1:** Site of injection of local anaesthetic drug and innervation done by superficial cervical plexus block and area covered by the SCPB.

sternocleidomastoid. A similar amount of local anesthetic is injected as the needle is withdrawn.

NYSORA Textbook of Regional Anaesthesia And Acute Pain Management[4] describes the fan technique as follows:

After skin cleansing with an antiseptic solution, a skin wheel is raised at the site of needle insertion using a 22-gauge needle. Next, using a "fan" technique with superior-inferior needle redirections, the local anesthetic is injected alongside the posterior border of the sternocleidomastoid muscle 2-3 cm below and above the needle insertion site. This injection technique should be adequate to achieve blockade of all four major branches of the superficial cervical plexus.

The goal of the injection is to infiltrate the local anesthetic subcutaneously and behind the sternocleidomastoid muscle. Attention should be paid to avoid deep needle insertion (restrict insertion to not more than 1-2 cm). A subcutaneous midline injection of the local anesthetic extending from the thyroid cartilage, to the suprasternal notch will block the branches crossing from the opposite side. This injection can be considered to render a "field" block. It is useful for preventing pain from surgical skin retractors on the medial aspect of the neck.

## MATERIAL AND METHODS

After approval from Ethics Committee, we studied 200 subjects undergoing elective cardiac surgeries with 100 subjects in each group. Patients were randomized and allotted to either of two groups by computer generated tables. Age, sex and weight of patients were noted. On the day of surgery, ECG, pulse oximeter, non-invasive blood pressure monitor were attached. Patients in both the groups received injection midazolam 0.05 to 0.1 mg/kg intravenously and injection fentanyl 2mcg/kg intravenously as premedication. Oxygen supplementation was given to all the patients with nasal prongs at 2-4 liters per minute. Patient was placed in the supine position with the head turned away from the side to be blocked or infiltrated and was given either of the following:

In group I: Sternocleidomastoid muscle was identified and superficial cervical plexus block was performed with a 22 gauge needle inserted at the midpoint of the posterior border of the Sternocleidomastoid muscle. After negative aspiration, 4-6 ml of 2% lignocaine was injected in both cranial and caudal directions along the posterior border of the muscle in the subcutaneous plane and 2-4 ml of 2% lignocaine was injected horizontally above the muscle. During injection, negative aspiration was performed every 2.5 to 3.0 ml to avoid inadvertent intravascular injection.

In group II: 6-10ml of 2% lignocaine infiltrated locally at the apex of the triangle formed by two heads of sternocleidomastoid muscle.

Emergency crash cart was kept ready. Pain was assessed with the Verbal Pain Rating Scale. Verbal contact with patient was maintained throughout the procedure. After placement of the internal jugular venous cannula and determination of the Verbal Pain Rating Scale, general anaesthesia was administered as per standard protocol.

**Parameters observed**

Heart rate, arterial blood pressure, arterial oxygen saturation by pulse oximetry, ECG, and the Verbal Pain Rating Scale was assessed:

1. At baseline
2. During administration of block
3. During needle puncture of internal jugular vein cannula
4. During subcutaneous tunneling
5. During insertion of internal jugular vein cannula
6. During securing and suturing of the cannula in place
7. Five minutes after completion of procedure

Possible complications: Accidental puncture of carotid artery, hematoma, intravascular injection of local anaesthetic drug and local anaesthetic toxicity.[5]

## RESULTS

All the 200 patients completed the study and there were no drop outs from study. Data obtained from all subjects was analysed statistically.

Table 1 compares the demographic profile of both the

| Haemodynamic Parameters | Superficial cervical plexus block group (n=100) Mean(±SD) | Local infiltration group (n=100) Mean(±SD) | P value |
|---|---|---|---|
| | Base line Pre-procedure | | |
| Heart Rate | 85.38 (11.87) | 84.97 (13.75) | 0.82 |
| Systolic BP | 140.36 (14.12) | 139.08 (16.27) | 0.55 |
| Diastolic BP | 84.74 (8.13) | 83.90 (8.69) | 0.48 |
| Mean Arterial BP | 108.09 (9.21) | 102.27 (10.68) | 0.56 |
| SpO2 | 99 (0.00) | 99 (0.00) | - |
| Complications | - | -- | - |
| | Needle Puncture | | |
| Heart Rate | 76.04 (11.30) | 78.11 (12.61) | 0.22 |
| Systolic BP | 133.88 (14.67 | 132.06 (13.79) | 0.68 |
| Diastolic BP | 81.94 (6.15) | 81.08 (7.24) | 0.37 |
| Mean Arterial BP | 99.18 (8.29) | 98.40 (8.07) | 0.50 |
| SpO2 | 99 (0.00) | 99 (0.00) | - |
| Complications | -- | - | - |
| | Tunnelling/Dilatation | | |
| Heart Rate | 80.99 (13.54) | 88.16 (16.90) | <0.001 |
| Systolic BP | 137.54 (16.16) | 140.48 (15.95) | 0.19 |
| Diastolic BP | 84.28 (5.65) | 84.82 (8.42) | 0.59 |
| Mean Arterial BP | 102.02 (8.51) | 103.02 (10.17) | 0.29 |
| SpO2 | 99 (0.00) | 99 (0.00) | - |
| Complications | - | - | - |
| | Catheter insertion | | |
| Heart Rate | 74.64 (11.43) | 78.17 (13.70) | 0.05 |
| Systolic BP | 131.94 (14.34) | 130.96 (13.04) | 0.61 |
| Diastolic BP | 80.36 (5.52) | 79.80 (6.82) | 0.18 |
| Mean Arterial BP | 97.63 (7.66) | 96.49 (8.33) | 0.31 |
| SpO2 | 99 (0.00) | 99 (0.00) | - |
| Complications | - | - | - |
| | Securing and Suturing Cannula | | |
| Heart Rate | 74.34 (12.91) | 86.48 (15.72) | <0.001 |
| Systolic BP | 130.30 (14.60) | 138.30 (13.55) | <0.001 |
| Diastolic BP | 79.22 (6.28) | 83.34 (6.99) | <0.001 |
| Mean Arterial BP | 96.21 (8.80) | 101.72 (8.64) | <0.001 |
| SpO2 | 99 (0.00) | 99(0.00) | - |
| Complications | - | - | - |
| Five minutes after the procedure | | | |
| Heart Rate | 80.99(13.54) | 88.16(16.9) | <0.001 |
| Mean Systolic BP | 124.32(12.05) | 134.46(14.05) | <0.001 |
| Mean Diastolic BP | 75.68(6.00) | 82.33(6.50) | <0.001 |
| Mean Arterial BP | 91.23(9.33) | 102.85(9.57) | <0.001 |
| SpO2 | 99.00 | 99.00 | - |
| Complications | - | - | - |

**Table-4:** Comparision of haemodynamic parameters during multiple points of i.j.v. cannulation procedure

| Time point | Superficial cervical plexus block group (n=100) Mean±SD | Local infiltration group (n=100) Mean±SD | P value |
|---|---|---|---|
| During procedure | 1.29±0.45 | 1.35±0.48 | 0.37 |
| Needle puncture | 1.13± 0.66 | 1.11±0.42 | 0.79 |
| Subcutaneous tunneling | 0.88±0.76 | 1.57±1.00 | <0.001 |
| Insertion of IJV cannula | 1.11±0.82 | 1.21± 0.92 | 0.42 |
| Securing and suturing | 0.86±0.86 | 2.76±1.20 | <0.001 |
| After five minutes | 0.25±1.03 | 0.54±0.81 | <0.001 |

**Table-5:** Comparison of pain score on verbal pain score (VPS) between two groups at multiple time points of procedures

groups. Both the groups matched each other in their mean age and sex distribution in both the groups. The mean age in group I was 44.23±11.63 years and in group II it was 41.39±14.60 years. There were 70% males and 30% females in group I and 61% males and 39% females in group II. Thus the mean age and sex were comparable in both the groups

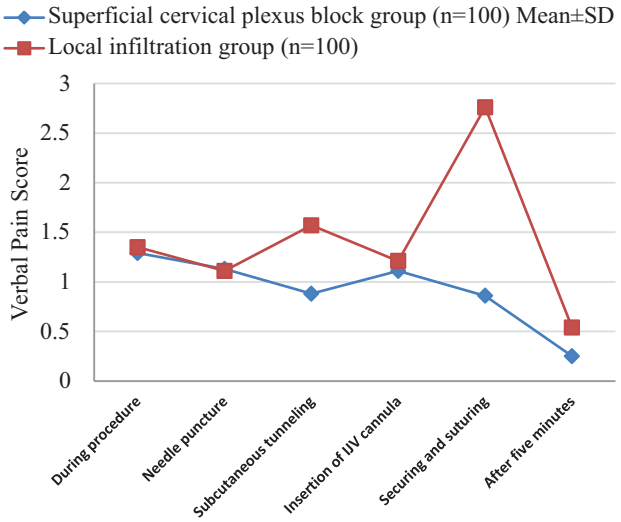


**Figure-2:** Comparison of pain score procedures on verbal pain score between two groups at multiple time points of procedure

and difference between groups was statistically insignificant ($P = 0.13$) for age and ($P = 0.23$) for sex, when analysed by Chi square test.

Table 2 depicts the number of attempts that were required for successful cannulation of the internal jugular vein. As the study population numbered 100 in each group, the number of attempts also represented the percentage of attempts required for successful cannulation. Both the groups were comparable in this respect too, with 77% and 81% patients in group I and II respectively having successful cannulation of the internal jugular vein in first attempt. 23% patients in group I and 19% patients in group II required more than one attempt for successful cannulation of the vein.

The mean number of attempts in both the groups were statistically comparable as determined by unpaired t test ($P = 0.48$). The mean number of attempts in group I was 1.27±0.52 and in Group II was 1.22±0.48.

Table 4 shows the values of haemodynamic parameters that were monitored and the incidence of complications during the study. Both the groups were almost comparable across all parameters except during the dilatation and subcutaneous tunneling where the mean heart rate in group I was less compared to group II: 80.99±13.54 versus 88.16±16.90 respectively. This difference was statistically very significant with $P < 0.001$ by unpaired t test. Also, during suturing all the parameters in group I were statistically very significantly low with $P < 0.001$ for mean heart rate, mean diastolic pressure, mean systolic pressure and mean arterial blood pressure, compared to those in group II. No oxygen desaturation or other complications were observed during the entire study period in all patients. Difference in haemodynamic parameters in both the groups five minutes after completion of the procedure was statistically significant with $P < 0.001$.

As seen from table 5 and figure 2, both the groups had comparable verbal pain score during the initial part of the cannulation and during the insertion of internal jugular cannula after tunnelling and dilatation. The mean pain scores were 1.29±0.45 and 1.35±0.48 during the process of giving the block in group I and group II respectively. Even during the needle puncture the score was 1.13±0.66 and 1.11±0.42 in group I and II respectively. During the insertion of the internal jugular cannula the pain score was 1.11±0.82 and 1.21±0.92 in group I and II respectively. The pain score was comparable at all these points when analyzed statistically and found insignificant ($P = 0.37$, $P = 0.79$ and $P = 0.42$) respectively.

Also, the verbal pain score was more in group II than in group I during subcutaneous tunneling and dilatation of tract, while securing the catheter by taking sutures, and at five minutes after the completion of the procedure. Statistically, the pain score was significantly low in group I as compared to group II. The pain score in group I was less (0.88±0.76) than in group II (1.57±1.00) with $P < 0.001$, which is highly significant when analyzed by unpaired t test. Similarly, while securing the catheter in group I verbal pain score was 0.86±0.86, and 2.76±1.20 in group II. The pain score at five minutes after completion of the procedure was 0.25±1.03 in group I and 0.54±0.81 in group II. In both the above instances the difference in verbal pain score was highly significant when statistically analyzed by unpaired t test ($P < 0.001$).

## DISCUSSION

This study was done in critically ill cardiac patients with ASA grading III and IV. 200 patients were chosen to undergo the study and all of them completed the study. There were no drop outs. As the main aim of the study was to compare the pain relief given by superficial cervical plexus block versus local infiltration of local anaesthetic during cannulation of internal jugular vein, we came to the conclusion that superficial cervical plexus block gives better results with respect to pain relief and haemodynamics throughout the procedure and till the induction of anaesthesia which is prime importance to anaesthesiologist working with cardiac patients. We did not find any study that compared the pain scores and haemodynamic parameters in cardiac patients posted for surgery on performing a search in Google Scholar and PubMed, but there are studies that indicated its usefulness in internal jugular cannulation in children[6] and in certain patients of oral submucous fibrosis posted for surgery.[7]

We have used Verbal Pain Rating Scale (VPS) in our study for assessing the effectiveness of superficial cervical plexus block and local infiltration during IJV cannulation. We used a verbal pain scale because previous work has suggested that this is suitable for immediate postoperative pain, whereas the visual analog pain score has been developed for chronic pain.[8]

The mean pain score during institution of block was 1.29±0.45 in group I and while local infiltration 1.35±0.48 in group II which was not statistically significant (unpaired t test, $P = 0.37$). The mean pain score during IJV needle puncture in group I was 1.13±0.66 and 1.11±0.42 in group II which was not statistically significant (unpaired t test, $P = 0.79$). The mean pain score during subcutaneous tunnelling in group I was 0.88±0.76 and 1.57±1.00 in group II which was statistically highly significant (unpaired t test, $P < 0.001$).

The mean pain score during insertion of IJV cannula was 1.11±0.82 in group I and 1.21± 0.92 in group II which was statistically not significant (unpaired t test, $P = 0.42$). The mean pain score during securing and suturing of IJV cannula was 0.86±0.86 in group I and 2.76±1.20 in group II which was statistically highly significant (unpaired t test, $P < 0.001$). The mean pain score at five minutes after cannulation in group I was 0.25±1.03 and 0.54±0.81 in group II which was statistically highly significant (unpaired t test, $P$ value <0.001).

Thus, patients in group I who received superficial cervical plexus block experienced significantly lower pain than patients in group II who received local infiltration during subcutaneous tunnelling, securing and suturing. Even at five minutes after cannulation, pain scores were significantly higher in group II compared to group I.

In 2007, M. Messner et al[9] conducted a prospective, randomised, double-blinded, placebo controlled trial in 46 patients undergoing unilateral carotid endarterectomy under general anaesthesia. Patients were randomized to either superficial cervical plexus block with ropivacaine (n=23) or placebo (n=23). A patient controlled analgesia (PCA) device delivering morphine was provided for all patients. Subjective pain levels (visual analog scale, VAS) were recorded. They found that ropivacaine group had a significant reduction in morphine consumption and lower maximal pain scores. No adverse effects of the superficial cervical plexus block were reported and patient satisfaction was substantially higher in the ropivacaine group. They concluded that superficial cervical plexus block provides effective pain relief for patients undergoing carotid endarterectomy. In our study also, the verbal pain score at different times of the procedure was less in superficial cervical plexus group than in local infiltration group except during the insertion of cannula after dilatation. This can be explained by the fact that once a track is created after dilatation, insertion of the catheter in itself does not cause as much pain.

In 2007, G. Andrieu et al[10] conducted a double-blind, randomized, controlled study to evaluate the analgesic efficacy of bilateral superficial cervical plexus block (BSCPB) performed under general anaesthesia in eighty seven patients undergoing total thyroidectomy. Bilateral superficial cervical plexus block (BSCPB) with saline was given in 29 patients (group P), BSCPB with ropivacaine 0.487% in 29 patients (group R) and BSCPB with ropivacaine 0.487% plus clonidine 5µg/ml another 29 patients (group RC). They found significant reduction in intraoperative opioid requirements in group R and group RC than in group P. They also noticed that pain scores were significantly reduced in groups R and RC than in group P with no complications. They concluded that BSCPB with ropivacaine and clonidine improved intraoperative analgesia. Also BSCPB with ropivacaine, or ropivacaine and clonidine was effective in reducing analgesic requirements after thyroid surgery. In our present study we also found that even at five minutes after the procedure, or till induction of general anaesthesia which took around 10-15 minutes from the placement of block to cannulation of the radial artery for invasive blood pressure monitoring, patients in group I had more stable haemodynamics than those in group II.

We looked out for complications like intravascular injection, systemic local anaesthetic toxicity, haematoma, nerve injury and phrenic nerve paralysis. None of these complications occurred in either group. In 2007, Pandit[11] et al conducted a systematic review of published papers to assess the complication rate associated with superficial (or intermediate) and deep (or combined deep plus superficial/ intermediate) cervical plexus block in patients undergoing carotid endarterectomy. They found that deep/combined block was associated with a higher serious complication rate related to the injecting needle, when compared with the superficial/intermediate block. The conversion rate to general anaesthesia was also higher with deep/combined block. They concluded that superficial/intermediate block is safer than any method that employs deep injection. In the present study we did not encounter any complications as combined block was not given, neither was bilateral block or large volume of injectate used.

## CONCLUSION

The results of the present study suggest that:

1. Superficial cervical plexus block is superior to local infiltration in terms of pain control during IJV cannulation in an awake patient.
2. Superficial cervical plexus block provides stable haemodynamics compared to local infiltration, which is especially important in patients posted for cardiac surgeries who cannot tolerate changes in haemodynamics during induction of anaesthesia.
3. Patient satisfaction was high in superficial cervical plexus bock group.
4. There were no complications in both groups.
5. It is a very simple procedure and does not require direct visual guidance.
6. In a teaching institute where multiple attempts at cannulation may be required, it keeps the patient comfortable and no extra skin punctures for infiltration are required.
7. Tunnelling and suturing becomes pain-free and the patient remains haemodynamically stable even during this time.

We therefore strongly recommend that superficial cervical plexus block should be used as frequently as possible during internal jugular cannulation, and not only as a technique to provide analgesia for surgical procedures. Our department has amended related policy, and all the patients now receive the block for internal jugular vein cannulation in all areas managed by anaesthesiologists including PACU, and Trauma and Emergency Care Unit.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 31-08-2018; **Accepted:** 09-09-2018; **Published:** 16-09-2018