EVLA(endovenous laser ablation) using Nalbuphine/propofol based conscious sedation with Tumescant anaesthesia in day-care facility: pain-free for patients and stress-free for surgeon – A South- Asian perspective

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Background and Aims

- Majority of South-Asian patients (varicose veins): category C3 (CEAP classification) and beyond
- EVLA requires multiple needle punctures along the dilated veins to administer tumescent anaesthesia : painful and uncomfortable
- A safe anaesthetic technique is needed to ensure:
 - Adequate analgesia and sedation in a responsive patient in the intraoperative period
 - Early post-operative mobilisation and discharge in day-care facility

Material and methods

- Number of patients: 60
- Inclusion criteria: ASA I/II , Age (18-65), BMI<30kg/m²
- Exclusion criteria: History of allergy to narcotics/ local anaesthetics, suspected/ confirmed difficult airway
- In the Operative Room
 - Standard non-invasive monitoring , oxygen 6L/min by ventimask 0.5 FiO₂
 - Premedication – glycopyrrolate 0.2mg, midazolam 20µg/kg, paracetamol 1gm, nalbuphine 50µg/kg i.v.
 - Bolus of propofol i.v. 0.75mg/kg followed by infusion at 0.015mg/kg/min (titrated to achieve target level of sedation) to a maximum of 0.020mg/kg/min
 - Tumescant anaesthetic solution injected along dilated veins by the surgeon intraoperatively
 - Sedation monitored: Modified Ramsay Sedation Score (target 2 to 4)

Score	Criteria
1	Anxious and agitated or restless or both
2	Cooperative, oriented, tranquil
3	Response to commands only
4	Brisk response to a light glabellar tap or loud auditory stimulus
5	Sluggish response to light glabellar tap or loud auditory stimulus
6	No response to light glabellar tap or loud auditory stimulus

- Intensity of Pain monitored : Behavioural Pain scale for non-intubated patients (BPS-NI) , optimal (BPS-NI<5)

Item	Description	Score
Facial Expression	Relaxed	1
	Partially tightened (brow lowering)	2
	Fully tightened (eyelid closing)	3
	Grimacing (folded cheek)	4
Upper or lower limbs	No movement	1
	Partially bent upper or lower limbs	2
	Fully bent with finger flexion	3
	Permanently retracted, affecting inspection	4
Vocalization	No pain vocalization	1
	Moaning not frequent (≤3/min) or prolonged (≤3s)	2
	Moaning frequent (>3/min) and prolonged (>3s)	3
	Howling or verbal complaint including “ow, ouch”	4

Material and methods (cont...)

- Intra-operative complications – bradycardia, hypotension, respiratory depression monitored and managed
- Post-operative period
 - Patient satisfaction and Surgeon satisfaction: Likert verbal rating scale (optimal satisfaction >5)
 - Time to mobilisation, post-operative pain-relief and complications, time to discharge recorded.

Results

- Modified Ramsay Sedation Score (MRSS) - Target sedation (MRSS: 2-4) achieved in all

- Behavioural Pain Score (BPS) – Non Intubated
 - 58/60 patients achieved optimal pain relief
 - 2 patients: BPS>5, rescue analgesia (fentanyl 0.5µg/kg)

- Likert Verbal Rating Scale:

Patient Satisfaction	Surgeon’s Satisfaction
<ul style="list-style-type: none">Extremely satisfied – 58/60Satisfied – 2/60Not Satisfied - Nil	<ul style="list-style-type: none">Extremely satisfied – 60/60Satisfied – NilNot Satisfied - Nil

- Mean time to mobilisation: 31+/- 1.2 mins
- Mean time to discharge: 5.2+/- 0.2 hrs
- Intra/postoperative complications: 2 patients had intra-operative bradycardia managed with 0.5mg atropine.

Conclusion

- Nalbuphine/ propofol based conscious sedation: safe, efficient and cost- effective technique in terms of intraoperative requirements and post-operative outcome for EVLA
- Large scale studies needed including studies comparing various anaesthesia techniques used for EVLA