

IMPROVED SEDATION CAPNOGRAPHY AND ENHANCED PATIENT SAFETY FOR SEDATION ANESTHESIA

THE CASE FOR A UNIVERSAL CAPNOGRAPHY ADAPTER

Michael Jach, MD, Cardiac Anesthesiologist, Suburban Hospital, Division of Johns Hopkins HealthCare, Bethesda MD USA

ABSTRACT

Current state of monitoring in the USA: there is a widespread practice of improvisation due to lack of appropriate equipment for sedation capnography. It is estimated that in 30% of cases capnography is either absent or deficient.

Below are three case reports making the case for a universal capnography adapter to enable capnography off multiple commonly used airway products. Each case demonstrates that the application of a universal capnography adapter meets clinical monitoring standards in situations where specialty airways are not available. A universal capnography adapter advances diagnostic capnography for multiple airway products used for procedural sedation and directly impacts patient safety.

BACKGROUND

The American Society of Anesthesiologists has strict safety mandates for sedation capnography.

"During regional anesthesia (with no sedation) or local anesthesia (with no sedation), the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs. During moderate or deep sedation, the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide unless precluded or invalidated by the nature of the patient, procedure, or equipment."

ASA Mandate 3.2.4

LEARNING OBJECTIVES

1. Study the feasibility of a universal capnography adapter to advance diagnostic capnography for procedural sedation.
2. Establish a quick method of enabling capnography off pre-existing airway products

CASE STUDIES

Case (1): Natural airway with non-rebreather face mask

Case (2): Natural with nasal cannula

Case (3): Natural airway with protective bite block

CONCLUSIONS

A universal capnography adapter is a viable method to enable capnography off multiple commonly used airway products. It represents a significant diagnostic advance superseding the current practice of improvisation for procedural sedation. **A universal adapter can rapidly convert multiple airway products to capnography capable products for enhanced patient safety.**

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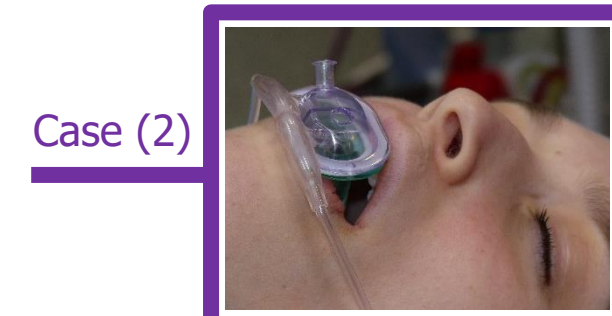


CURRENT STATE OF AFFAIRS

IMPROVISATION



CAPNOGRAPHY ADAPTER



Sedation Level	Airway Application	Capnography Options	O ₂ Supplementation Capability	Typical Propofol Infusion Rate (mcg/kg/min)	Typical BIS Score
Light	Nasal cannula	Nasal cannula sampling	Yes	0-25	>70
Moderate	Nasal cannula	Nasal cannula sampling	Yes	25-75	55-65
	Face mask	CarboTrack™ adapter			
	OPA	CarboTrack™ adapter			
Deep and general intravenous anesthesia	OPA	CarboTrack™ adapter	Yes	>75	35-55
	Face mask-regular	CarboTrack™ adapter			
	Face mask-nonrebreather	CarboTrack™ adapter			