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Case Report

Anaesthetic Risks in Obese Patients Undergoing Endoscopic Ultrasound Procedures at City Medical Centre

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Abstract

Upper & lower GI endoscopic procedures are becoming more performed as day care procedures in our settings; firstly, due to the growing concern for the increasing number of patients' population with cancer at one hand and on the other hand due to increased number of patients presenting for screening purposes seeking healthy lifestyle or as a pre-requisit mandatory pre-employment. Secondly, there are many advancements in technology, anaesthetic techniques and modalities for anaesthetising that had allowed most of these procedures to be performed as office-based and day-care procedures with minimal complications.

At City Medical Centre in Francistown - Botswana, we conducted a retrospective cross-sectional case series review from January 2022 to January 2023. A total number of 24 gastrointestinal endoscopic procedures were performed under the supervision of the anaesthetist. These procedures ranged from upper GIT Esophagogastroduodenoscopies to screening colonoscopies. Anaesthetic risks ranges from the usual complications of desaturation, airway obstruction, tachycardia, bradycardia, hypotension, hyper salivation & hypersecretion, bleeding with a consequence of airway obstruction leading to cardio-respiratory arrest and death in very rare cases.

Keywords: intravenous conscious sedation (iv csd); general endotracheal anaesthesia (geta); endoscopic ultrasound (eus); gastrointestinal (gi); esophagogastroduodenoscopy (egd); screening colonoscopy (sc)

Cases Description

Case No.1:

We present a 75-year-old male patient who was sent as a referral to our medical centre from another private hospital with a complaint of chronic and progressive dysphagia and hoarseness of voice, the patient presented emaciated with considerable loss of weight.

He was referred with a preliminary diagnosis of suspected gastritis, Ca Oesophagus.

The procedure was performed under IV conscious sedation (IV CSD) with Propofol only. The patient developed bradycardia and desaturation immediately following the procedure. Atropine 1 mg was given and oxygen flow via nasal cannula increased. The patient had profuse bleeding from the oropharynx, attempts to protect and secure the airway were not successful till the patient was intubated and referred to the hospital ICU where the patient was resuscitated for less than an hour and later declared dead. Samples were collected and sent to Q-LAB and revealed moderate chronic gastritis, H-Pylori was negative, no atrophy detected and no intestinal dysplasia.

Case No. 2

We describe a 38 years old female who presented with symptoms suggestive of gastritis, both upper GIT gastroscopy and screening colonoscopy were performed, the procedure was done under intravenous conscious sedation (IV CSD) with IV Propofol (Total dose was recorded to be 250 mg) and Fentanyl 50 mcg mainly for screening colonoscopy. His vitals were as follows: SPO_2 99% under less than 2/L of O_2, NIBP 122/83 mmHg, HR 83 bpm. During gastroscopy samples were collected and sent to LANCET Laboratories and revealed chronic follicular gastritis with severe H. Pylori infection, there was no intestinal metaplasia, no epithelial dysplasia and no invasive malignancy.

Discussion

The majority of patients seen were obese in more than 90 %, anaesthetic complications still remain the same ranging from desaturation due to partial airway obstruction, bradycardia, tachycardia, hypotension, hypertension, increased salivation & secretions, and to some extent pain during the procedure. Regurgitation due to bleeding is rare and we have encountered it in the aforementioned patient in case # 1 presentation.

For both upper & lower GIT endoscopy, anaesthesia was provided with the use of intravenous conscious sedation (IV CSD) with the sole administration of Propofol as a sole sedative anaesthetic agent. Adjunct anaesthetics such as Fentanyl, Midazolam and Ketamine were used as well. Strong opioids such as Morphine and Pethidine were avoided due to the added risk of respiratory depression, prolonged sedation, and hypotension. Thorough pre-anaesthetic clinical assessment, proper patient's selection, formulation of appropriate anaesthetic plans, and team communication are of paramount importance for at least 24 to 72 hours before the conduct of the procedure.

Obstructive sleep apnoea (OSA), Propofol induced hypotension and Propofol associated hypoventilation together with apnoea induced by the concomitant use of Propofol and opioids such as Fentanyl have also been observed in a number of patients presenting with morbid obesity.

None of the patients experienced post-operative nausea and vomiting (PONV) though it can be aggressively managed with anti-emetic medications.

The majority of patients received intravenous conscious sedation (IV CSD) in 95% of patients. General endotracheal anaesthesia (GETA) was attempted only in one patient who developed a complication of airway obstruction. None of the patients required monitored anaesthetic care (MAC).

Among patients reviewed, mortality was reported in less than 5% due to regurgitation from bleeding as mentioned earlier.

The overall safety measures for the conduct of sedation in office-based procedures was strictly followed. A recommendation was therefore made to establish guidelines for intravenous conscious sedation for the conduct of office-based endoscopic procedures in our settings, which included a prior pre-anaesthetic assessment/evaluation and formulation of an anaesthetic plan.

Conclusion

Endoscopic procedures are increasingly conducted as office-based, and or day care procedures in Botswana due to the co-incidental increase in the number of cancer patients at one hand and on the other hand due to increasing patients' population seeking screening and healthy lifestyle behaviours or as a pre-requisite for employment opportunities. This necessitates employment of standardized measures for provision of anaesthesia care plans & techniques to eliminate risks & complications, ensure safety and offer better procedural outcomes for patients and endoscopists. This case report has assisted in identifying the needs & risks to avoid in the near future.

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Conflict of interest: We declare no conflict of interest

Ethical considerations: written consent for the procedures were obtained from patients, while ethical approval from the institutional review board (IRB & ERB) has been obtained prior to the conduct of this report.

Author contributions: Collection of information, write-up, facilitation for editing & publishing, and coordination of communication among relevant disciplinary professions.

Data collection: Data collected from patients' filing records with permission.

Data analysis: Data were analysed statistically.

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1. B. Goudra and S. Monica. (2022). Anaesthesia for advanced endoscopic procedure. Clin Endoscopy.55: (1-7)