Letter to the Editor

Semaglutide Awareness in Maxillofacial Surgery

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Dear Editor-in-Chief

Semaglutide, a once-weekly GLP-1 receptor agonist, has emerged as a promising therapeutic option for individuals struggling with obesity and type 2 diabetes mellitus (T2DM). Its ability to induce weight loss, reduce appetite, and improve glycemic control has led to its increasing utilization in clinical practice. Semaglutide works by mimicking the action of endogenous GLP-1, leading to enhanced insulin secretion, decreased glucagon secretion, and delayed gastric emptying. These pharmacological effects not only contribute to better glycemic control but also facilitate sustainable weight loss, making semaglutide an attractive option for patients with obesity and T2DM. Due to its high effectiveness, it is considered a blockbuster drug worth billions [1].

Despite the favorable metabolic effects of semaglutide, concerns have been raised regarding its safety in the perioperative setting, particularly in elective surgeries, notably involving the maxillofacial region. Orthognathic surgery, a common procedure for correcting skeletal discrepancies of the jaws, presents unique challenges in patients receiving semaglutide therapy. The potential risk stems from the drug's mechanism of action, which includes delaying gastric emptying and reducing food intake. These effects might interfere with perioperative fasting protocols and increase the risk of pulmonary aspiration of regurgitated gastric content during induction of anesthesia [2–4], particularly in procedures involving manipulation of the upper airway.

Current recommendations suggest discontinuing semaglutide before elective surgeries to mitigate the associated risks [3]. However, the optimal timing of drug cessation remains a subject of debate, as the duration of action of semaglutide may vary among individuals [5]. Moreover, abrupt discontinuation of GLP-1 receptor agonists can lead to gastrointestinal symptoms, further complicating perioperative management. Thus, a careful balance must be struck between the potential benefits of weight loss and glycemic control and the perioperative risks associated with semaglutide use. In urgent or emergency surgeries, it is imperative to prioritize endotracheal intubation, fast induction and the administration

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Table 1: Suggested minimum suspension period for the use of anti-obesity medications prior to elective procedures

Drug	Minimum suspension recommendation
Lixisenatide	1 day
Liraglutide	2 days
Dulaglutide	15 days
Tirzepatide	15 days
Semaglutide	21 days

of general anesthesia, which may mitigate but not entirely eliminate the associated risks in patients receiving semaglutide therapy [4]. A gastric ultrasound examination or a CT-scan could be very useful in identifying patients with gastric content despite appropriate fasting [4,6].

It appears that longer fasting periods have not been as effective in reducing risk in some patients [2]. For this reason, anesthetic and endocrinology societies worldwide [3,7,8] are attempting to create tables suggesting the suspension of certain medications (Table 1).

The addition of any GLP-1 receptor agonist intake and the duration of its use must be mandatorily included in the anamnesis of maxillofacial surgeons due to its widespread usage worldwide.

In addition to concerns regarding perioperative fasting and aspiration risk, there is also limited evidence regarding the effects of semaglutide on wound healing and postoperative recovery. GLP-1 receptors are expressed in various tissues, including the gastrointestinal tract and the cardiovascular system, raising concerns about the potential impact of semaglutide on tissue repair and cardiovascular function following surgery. Further research is warranted to elucidate the long-term effects of semaglutide on surgical outcomes and to develop evidence-based guidelines for its perioperative management.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests.

REFERENCES

1. Wang L, Wang N, Zhang W, Cheng X, Yan Z, Shao G, et al. Therapeutic peptides: current applications and future directions. *Signal Transd Target Ther* 2022;**7**:1–27.
2. Klein SR, Hobai IA. Semaglutide, delayed gastric emptying, and intraoperative pulmonary aspiration: a case report. *Can J Anaesth* 2023;**70**:1394–6.
3. Jones PM, Hobai IA, Murphy PM. Anesthesia and glucagon-like peptide-1 receptor agonists: proceed with caution! *Can J Anaesth* 2023;**70**:1281–6.
4. Avraham SA, Hossein J, Somri F, Hawash N, Hochman O. Pulmonary aspiration of gastric contents in two patients taking semaglutide for weight loss. *Anaesth Rep* 2024;**12**:12278.
5. Chan PYW, Mika AP, Martin JR, Wilson JM. Glucagon-like Peptide-1 Agonists: What the Orthopaedic Surgeon Needs to Know. *JBJS Rev* 2024;**12**.
6. Queiroz VNF, Falsarella PM, Chaves RC de F, Takaoka F, Socolowski LR, Garcia RG. Risk of pulmonary aspiration during semaglutide use and anesthesia in a fasting patient: a case report with tomographic evidence. *Einstein (Sao Paulo)* 2023;**21**:eRC0628.
7. Marino EC, Negretto L, Ribeiro RS, Momesso D, Feitosa ACR, Bertoluci M. [Rastreio e Controle da Hiperglicemia no Perioperatório]. *Braz Diabetes Soc* 2023.
8. American Society of Anesthesiologists. American Society of Anesthesiologists Consensus-Based Guidance on Preoperative Management of Patients (Adults and Children) on Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists | American Society of Anesthesiologists (ASA).

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