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Acute Tumour Haemorrhage During Airway Instrumentation in a Patient With an Extensive Tongue Base and Oropharyngeal Tumour: A Case Report

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Abstract

A 57-year-old female with a history of moderately differentiated keratinising squamous cell carcinoma of the anal canal presented with weight loss, dysphagia, odynophagia, right-sided otalgia, and a gradually growing right-sided neck lump. Flexible nasendoscopy and clinical examination revealed anomalies related to the tonsillar fossa and base of the right tongue. A massive necrotic tumour that crossed the midline and was centred on the right oropharynx and tongue base was seen on contrast-enhanced computed tomography of the neck, along with bilateral cervical lymphadenopathy. In addition to bilateral necrotic cervical lymphadenopathy and right-sided perinodal spread, further magnetic resonance imaging revealed widespread local tumour involvement of the tongue, tongue base, tonsillar pillar, pre-epiglottic fat, prevertebral soft tissues, and pterygoid muscles. The disease was radiologically staged as T4 N3B with extranodal extension. During general anaesthesia for an examination under anaesthesia of the rectum, airway instrumentation resulted in significant bleeding from the previously identified oropharyngeal tumour, requiring urgent ENT intervention for haemostasis and tissue sampling. The patient was subsequently reviewed by the head and neck cancer multidisciplinary team. The combination of extensive upper aerodigestive tract disease, anticipated difficult airway, and tumour-related haemorrhage presented significant diagnostic and perioperative challenges. The patient's previous anal squamous cell carcinoma also created an important diagnostic consideration regarding the origin of the new malignancy. This case highlights the potential for extensive oropharyngeal tumours to cause significant haemorrhage during airway instrumentation and emphasises the importance of careful airway assessment, multidisciplinary communication, and prompt specialist intervention when managing patients with extensive head and neck malignancy.

Categories: Otolaryngology, Oncology, Anesthesiology
Keywords: airway management, anesthesiology, cervical lymphadenopathy, difficult airway, head and neck cancer, oropharyngeal tumour, squamous cell carcinoma, tongue base tumour, tumour bleeding, tumour haemorrhage

Introduction

Cervical lymphadenopathy, dysphagia, odynophagia, weight loss, and referred otalgia are among the symptoms of oropharyngeal and tongue base cancers. Airway management may also be severely hampered by large tumours of the tongue base and oropharynx, especially if there is upper aerodigestive tract deformity and limited mouth opening. Careful preoperative assessment is therefore essential when airway instrumentation is anticipated in patients with known or suspected head and neck malignancy [1,2].

Airway manipulation in the presence of a friable or highly vascular upper aerodigestive tract tumour carries a potential risk of trauma and haemorrhage [2]. Although bleeding is a recognised complication of procedures involving head and neck tumours, significant acute haemorrhage precipitated by airway instrumentation during general anaesthesia presents a particularly challenging situation [3]. Such bleeding can rapidly compromise the airway while simultaneously making visualisation and subsequent airway management more difficult [4].

This case describes a patient with an extensive tongue base and oropharyngeal tumour with bilateral cervical lymphadenopathy who underwent general anaesthesia for an examination under anaesthesia of the rectum for an unrelated indication. In patients with extensive upper aerodigestive tract malignancy, airway management may be complicated by anatomical distortion, airway narrowing, restricted mouth opening, and the potential for trauma to friable tumour tissue during airway instrumentation. Airway manipulation may therefore create an additional risk of significant tumour haemorrhage, which can further impair visualisation and complicate subsequent airway management. This case highlights the potential for acute tumour haemorrhage following airway instrumentation and emphasises the importance of careful preoperative airway assessment, anticipation of bleeding risk, multidisciplinary planning, and prompt specialist intervention.

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Case Presentation

A 57-year-old female with a previous history of moderately differentiated keratinising squamous cell carcinoma of the anal canal, diagnosed in 2021 and previously treated with radiotherapy and stoma formation, was under surveillance. A palpable nodule was found about 3-4 cm from the anal margin during colorectal follow-up. Proctoscopy and inspection under anaesthesia were advised for additional evaluation after magnetic resonance imaging of the pelvis performed in June 2026 revealed no signs of new disease or local recurrence. The anorectal lesion's subsequent biopsies revealed ulceration without dysplasia or cancer.

The patient's right-sided neck tumour was observed to have grown over the course of about a month in July 2026. The lump was firm and tender and was located at approximately level III. This was associated with weight loss, dysphagia, odynophagia, and right-sided otalgia. She had a history of approximately 17 pack-years of smoking and was a current smoker.

Initial head and neck assessment

During assessment by the ENT team, examination demonstrated an abnormal right tonsillar fossa with a white exudative coating and erythema. Flexible nasendoscopy demonstrated an irregular appearance of the right tongue base. Given the clinical findings and previous history of malignancy, cross-sectional imaging was arranged.

Contrast-enhanced CT of the neck performed in July 2026 demonstrated a large enhancing necrotic mass centred on the right oropharynx and tongue base, measuring approximately 3.4 × 5.4 × 5.3 cm. The lesion crossed the midline, involving both the tongue and posterior oropharyngeal wall and was inseparable from the right submandibular gland. Abnormal enhancement extended superiorly along the posterior oropharyngeal wall towards the soft palate and uvula. Multiple necrotic cervical lymph nodes were present, including right level II and III nodes and contralateral left level II nodes. The radiological impression on CT was of a primary oropharyngeal tumour, provisionally staged as T4 N2c, with extranodal extension reported as negative if p16 was negative. Contrast-enhanced CT demonstrated a large necrotic enhancing mass centred on the right oropharynx and tongue base, causing marked airway narrowing (Figure *1*).

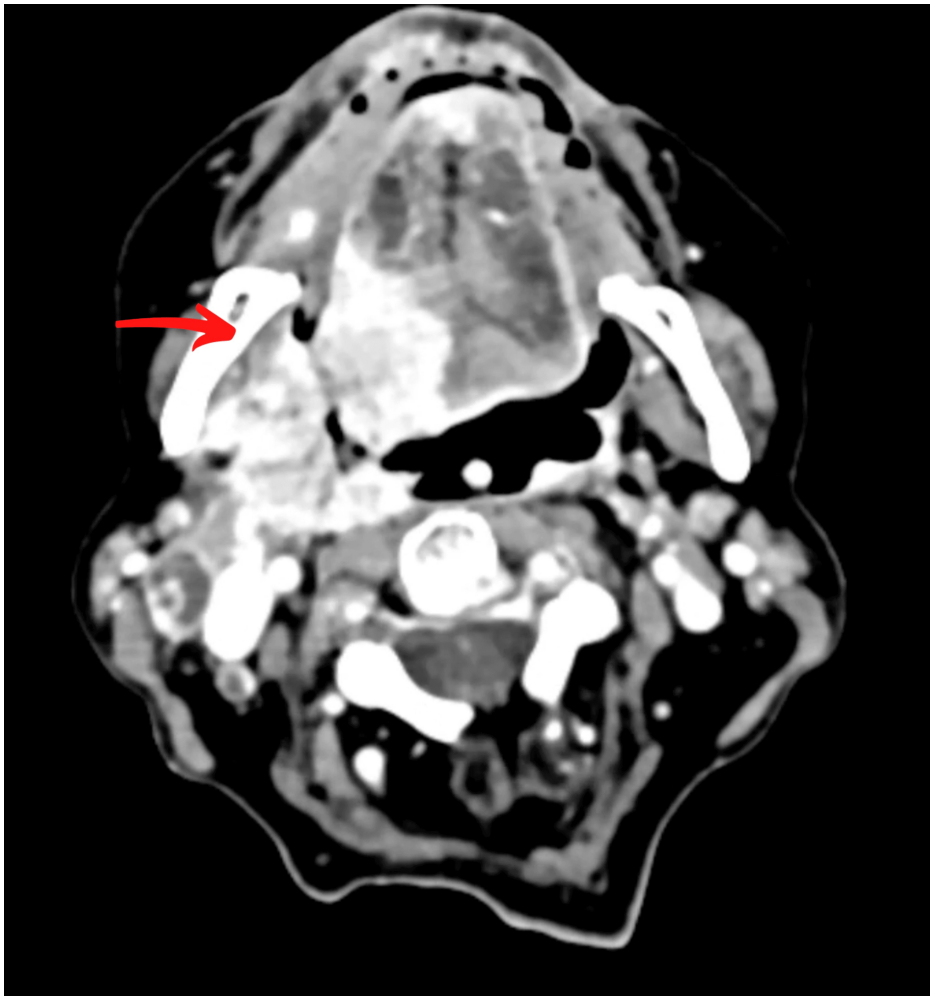


FIGURE 1: Axial contrast-enhanced computed tomography (CECT) of the neck showing the primary oropharyngeal mass.

Axial contrast-enhanced computed tomography (CECT) image demonstrating a large, heterogeneous, centrally necrotic, enhancing mass (red arrow) centred in the right tongue base and oropharynx. The mass crosses the midline and causes significant luminal narrowing of the oropharyngeal airway.

Further imaging and staging

MRI of the neck performed in August 2026 demonstrated an extensive tumour involving the right half of the tongue, crossing the midline and extending into the tongue base and preepiglottic fat. The tumour extended along the tonsillar pillar and involved the prevertebral soft tissues and fascia. Laterally, it invaded the pterygoid muscles and abutted the mandible without evidence of mandibular invasion. Inferiorly, the tumour involved the right vallecula, while superiorly it extended towards the level of the nasopharynx. Subsequent MRI confirmed extensive soft-tissue tumour involvement of the right tongue and tongue base with midline crossing (Figure *2*).

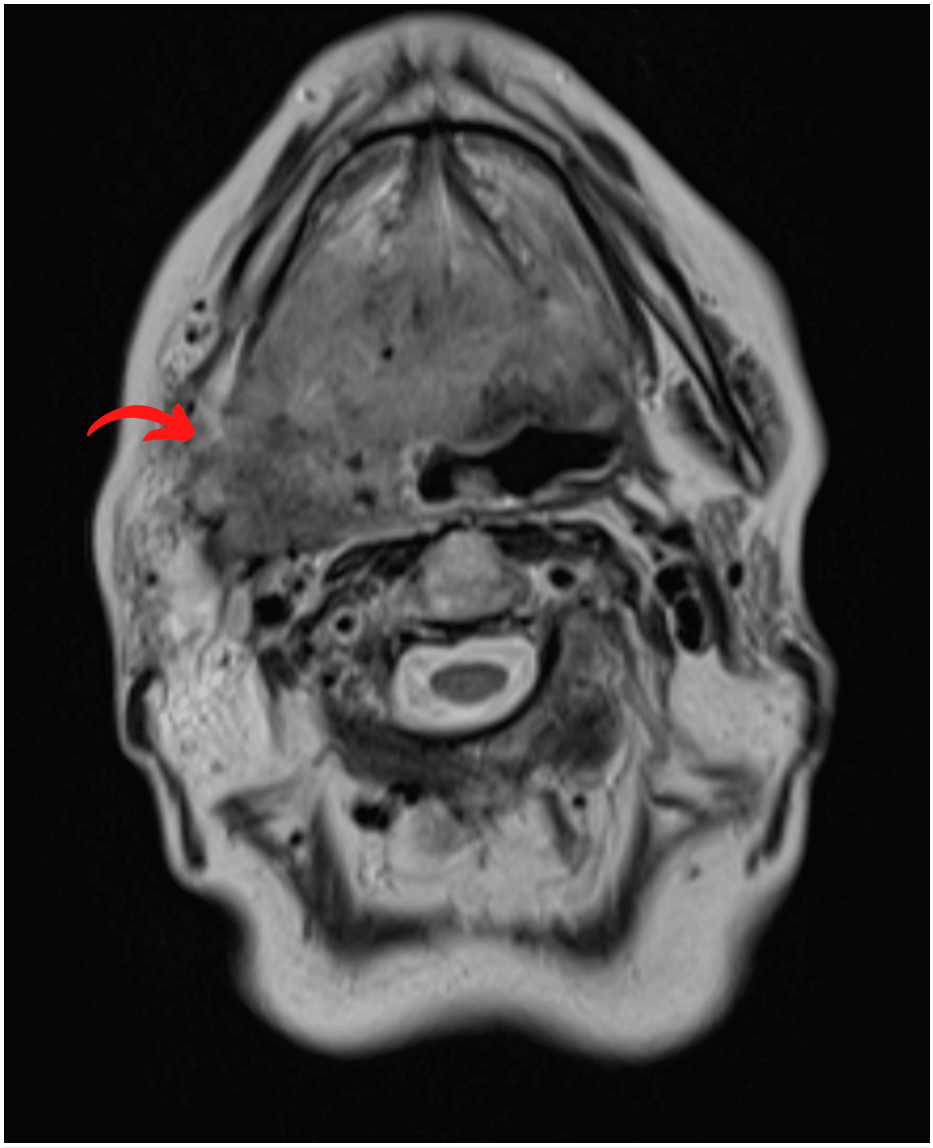


FIGURE 2: Axial T2-weighted magnetic resonance imaging (MRI) demonstrating the extent of tongue base tumour.

Axial T2-weighted magnetic resonance image showing a hyperintense, heterogeneous soft tissue tumour (red arrow) involving the right posterior tongue and tongue base, extending across the midline into the contralateral tongue musculature and obstructing the airway passage.

Multiple enlarged, necrotic bilateral level II and III cervical lymph nodes were identified, with right-sided perinodal spread. The nodes measured less than 6 cm. There was no reported abnormality within the mediastinum or visualised lung fields. The radiological staging was reported as T4 N3B with extranodal extension positive (ENE+).

The case was subsequently discussed at the head and neck cancer multidisciplinary team. Urgent tissue diagnosis was planned, including core biopsy and transoral biopsy, with PET imaging also planned for further staging and treatment planning.

Preoperative anaesthetic assessment

To look into the previously discovered anorectal irregularity, the patient later needed a quick inspection of the rectum under anaesthesia. During the preoperative anaesthetic assessment in September 2026, the patient's height was recorded as 155 cm and weight as 43.6 kg. She was classified as American Society of Anesthesiologists (ASA) Physical Status III. Relevant comorbidities included chronic obstructive pulmonary disease, alcoholic cirrhosis, and the known extensive oropharyngeal malignancy. She remained a current smoker.

Airway assessment identified significant potential difficulty, with a restricted mouth opening of approximately two finger breadths and a Mallampati grade IV airway. The anaesthetic team anticipated a difficult airway. Head and neck malignancy can present particular challenges for airway management because tumour size and anatomical location may distort or obstruct the upper airway, and airway instrumentation can cause trauma and bleeding when the tumour is friable or involves the tongue base [5,6].

The anticipated difficulty in securing the airway was discussed with the patient, including the possibility that the procedure might need to be abandoned and the patient woken if a safe airway could not be established. The patient declined spinal anaesthesia and chose to proceed with general anaesthesia. The available documentation does not establish whether caudal epidural anaesthesia was considered or why it was not selected.

Acute tumour haemorrhage during airway instrumentation

Following induction of general anaesthesia for the planned rectal examination under anaesthesia, an i-gel was initially inserted, but ventilation through the device was unsuccessful because tumour tissue was obstructing its opening. Face-mask ventilation was subsequently achieved easily, and the patient was intubated with a size 7 cuffed endotracheal tube using videolaryngoscopy in a single attempt, although the intubation was documented as difficult. During airway instrumentation, the extensive oropharyngeal and tongue-base tumour began to bleed briskly [7]. The intraoperative anaesthetic record showed no documented oxygen desaturation, with oxygen saturation remaining at approximately 100% during the recorded event. ENT was urgently contacted while the patient remained anaesthetised for assessment and haemostasis.

The ENT team was urgently called to assist with haemostasis. Examination under anaesthesia demonstrated an extensive erosive and endophytic tumour involving the right oropharynx, base of tongue, lateral oropharyngeal wall, soft palate and uvula, with extension towards the nasopharynx. The tumour was necrotic, with a pulsatile tumour bed and active brisk bleeding. Blood and clots were suctioned, and tumour tissue was obtained for urgent histological assessment. Haemostasis required multiple applications of bipolar cautery, topical adrenaline, and Floseal, following which the operative field was dry.

Subsequent management

Following control of the haemorrhage, the patient continued under the care of the ENT and head and neck cancer multidisciplinary team. The extensive local disease and bilateral cervical nodal involvement were considered in determining subsequent management. PET imaging and definitive histological assessment were planned as part of ongoing staging and treatment planning.

Acute haemorrhage associated with head and neck malignancy can represent a potentially life-threatening event and may require coordinated management involving anaesthesia, otolaryngology, surgery, and, where appropriate, interventional radiology [7,8]. In this case, prompt ENT involvement allowed direct assessment of the bleeding tumour, tissue sampling, and local haemostatic treatment.

Discussion

This case illustrates the challenges of managing an anticipated difficult airway in a patient with extensive tongue base and oropharyngeal malignancy who required general anaesthesia for an unrelated procedure. The principal complication was acute, significant tumour haemorrhage following airway instrumentation, which necessitated urgent ENT intervention and local haemostatic treatment. Published literature identifies head and neck malignancy as a particular challenge for airway management because tumour-related anatomical distortion, airway narrowing, and restricted mouth opening can complicate both intubation and subsequent airway rescue [1,5,9-11].

Airway assessment in extensive head and neck malignancy

Preoperative airway assessment is particularly important in patients with extensive head and neck tumours. The UK National Multidisciplinary Guidelines identify tongue-base tumours, obstructive lesions, restricted mouth opening, and a Mallampati grade III or IV airway as relevant predictors of difficult intubation. They also recommend collaborative assessment by anaesthetists and surgeons, ideally incorporating endoscopic examination and imaging where appropriate [11]. In the present case, the patient had a restricted mouth opening of approximately two finger breadths, a Mallampati grade IV airway, and radiological evidence of extensive tumour involvement of the tongue base and oropharynx.

The Difficult Airway Society guidelines recommend considering awake tracheal intubation when predictors of difficult airway management are present, including head and neck pathology, reduced mouth opening, and progressive airway compromise [10]. This recommendation is relevant to the preoperative considerations in this case. However, the choice of airway technique requires individual assessment of tumour location, airway patency, bleeding risk, the patient's clinical condition, and the expertise and resources available. Awake techniques should not be assumed to be appropriate in every patient with an

obstructing or friable tumour, particularly when airway bleeding itself may compromise visualisation.

The occurrence of haemorrhage in this patient also demonstrates that anticipated airway difficulty is not limited to the technical challenge of passing an endotracheal tube. Instrumentation may cause trauma to a tumour-bearing surface, potentially introducing an additional hazard during airway management. A systematic review of anticipated difficult airways in advanced head and neck cancer and published anaesthetic guidance provide a basis for careful preoperative planning, although the available literature does not allow the risk of instrumentation-related haemorrhage to be quantified for an individual patient [1,10,11].

Choice of anaesthetic technique

The choice of anaesthetic technique for anorectal procedures should consider the nature and duration of the procedure, patient comorbidities, patient preference, and the risks associated with airway management. General anaesthesia, spinal anaesthesia, caudal epidural anaesthesia, and local anaesthetic infiltration are among the techniques used for anorectal surgery [12-14]. A randomised controlled trial compared ultrasound-guided caudal epidural blocks with spinal anaesthesia, while another randomised trial compared caudal epidural block with local anaesthetic infiltration [12,14]. A prospective study of 973 adults undergoing anorectal surgery evaluated the effectiveness and complications of caudal block [13]. Caudal epidural anaesthesia may provide an alternative that avoids the need for airway instrumentation; however, its suitability must be assessed individually, and the available evidence does not establish that it would necessarily have been appropriate for this patient.

In the present case, the preoperative documentation records that the patient declined spinal anaesthesia and chose general anaesthesia following discussion of the anticipated difficulty in securing the airway. However, the available documentation does not establish whether caudal epidural anaesthesia was considered or why it was not selected. It is therefore not possible to reconstruct the complete rationale for the original anaesthetic decision from the available records. This case highlights the importance of explicitly considering and documenting regional anaesthetic alternatives when planning procedures in patients with extensive upper-airway malignancy and an anticipated difficult airway.

Tumour-related haemorrhage and airway management

The acute haemorrhage in this case occurred during airway instrumentation of an extensive oropharyngeal tumour. Bleeding in the upper airway can rapidly create a complex emergency because blood and clot may impair visualisation and interfere with conventional airway techniques. Kristensen and McGuire's narrative review of the bleeding upper airway describes the challenges of securing an airway when haemorrhage obscures the visual field and discusses the potential limitations of conventional techniques in this setting [9]. This literature supports the importance of anticipating the possibility of bleeding and having a clear escalation strategy when managing patients with significant upper airway pathology.

Published clinical experience also demonstrates that major haemorrhage associated with oropharyngeal squamous cell carcinoma can require urgent multidisciplinary intervention. In a retrospective case series of 11 patients with oropharyngeal squamous cell carcinoma who developed significant tumour haemorrhage during or following definitive chemoradiotherapy, airway intubation and embolisation were undertaken in 10 patients, and four patients died [15]. These findings illustrate the potential severity of major haemorrhage in oropharyngeal malignancy. However, the population in that study had predominantly treatment-associated bleeding, whereas the haemorrhage in the present case occurred during airway instrumentation before definitive oncological treatment. The clinical circumstances are therefore different, and the reported outcomes should not be directly extrapolated to this patient.

In the present case, urgent involvement of the ENT team enabled direct examination of the tumour, tissue sampling, and haemostasis using local adrenaline, bipolar cautery, and Floseal. The immediate response was important in addressing the bleeding source. However, this particular example cannot establish the relative efficacy of other haemostatic strategies or assess if the bleeding might have been avoided with a different airway strategy.

Multidisciplinary planning and procedural context

An important feature of this case was the requirement for general anaesthesia for a rectal examination under anaesthesia rather than for treatment of the head and neck malignancy. The patient therefore presented with an unrelated procedural indication alongside a known extensive oropharyngeal tumour that significantly affected airway management. This highlights the importance of considering the patient's overall clinical context and the potential implications of a separate procedure when planning anaesthesia.

The UK multidisciplinary guidance emphasises communication between the anaesthetic and surgical teams when assessing patients with head and neck cancer, including consideration of the tumour's anatomical extent and the potential need for specialist airway support [11]. The Difficult Airway Society guidelines similarly recommend structured preparation, appropriate equipment, and a defined strategy for anticipated

difficult airway management [10]. This planning should take into account the potential for tumour-related bleeding, the availability of ENT help, and the choices for emergency airway rescue in a patient with a big tumour and considerable airway restriction.

The necessity of immediate ENT care in this instance highlights the importance of prompt access to expert assistance when an airway issue arises. Although the event does not establish which alternative strategy would have been safest, it reinforces the need to consider the potential consequences of airway instrumentation and to ensure that the appropriate teams and resources are available before proceeding.

Diagnostic considerations

The patient's previous anal canal squamous cell carcinoma introduced an important diagnostic consideration when the new oropharyngeal lesion was identified. Although imaging suggested a primary oropharyngeal malignancy, the origin of the lesion could not be definitively established from the available radiological findings alone. Histopathological assessment and appropriate immunohistochemical investigations are required to distinguish a new primary malignancy from metastatic disease when clinically indicated. Definitive histology was not available at the time of this report, and therefore the relationship, if any, between the two malignancies remains uncertain.

Limitations

This report describes a single clinical event and cannot establish the incidence of tumour haemorrhage during airway instrumentation or determine the relative safety of alternative airway techniques. Furthermore, the definitive histological findings and final PET imaging results were not available when this report was prepared. These limitations restrict conclusions about the tumour's origin, final oncological stage, and the longer-term clinical outcome. The report should therefore be interpreted as an illustration of a potential airway complication in a patient with extensive oropharyngeal disease rather than evidence of the superiority of a particular management strategy.

Conclusions

Large tongue base and oropharyngeal tumours can make airway management extremely challenging, especially if a difficult intubation is expected. This example emphasises that even when general anaesthesia is used for an unrelated treatment, there is still a chance of acute tumour haemorrhage during airway instrumentation. Multidisciplinary planning, careful preoperative airway examination, and consideration of tumour-related bleeding risk are crucial. Urgent haemostasis and further tissue collection were made possible by the quick cooperation of anaesthetic and ENT teams.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Husain J. Ali

Acquisition, analysis, or interpretation of data: Husain J. Ali

Drafting of the manuscript: Husain J. Ali

Critical review of the manuscript for important intellectual content: Husain J. Ali

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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