

Intractable Epistaxis Post Nasopharyngeal Swab for COVID-19 Test: Case Report

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DOI: <https://doi.org/10.56293/IJASR.2024.6120>

IJASR 2024

VOLUME 7

ISSUE 5 SEPTEMBER - OCTOBER

ISSN: 2581-7876

Abstract: To highlight a novel complication of NPS and stress the importance of vigilance during its administration, particularly in patients with nasal anomalies. A 46-year-old male presented with severe epistaxis two days post-NPS. Despite initial packing, bleeding persisted, requiring surgical intervention. Intraoperatively, a deviated septum and left inferior turbinate injury were noted, with active bleeding from the sphenopalatine area. Sphenopalatine artery ligation was performed, successfully resolving the bleeding. Anesthesia management included rapid sequence induction and meticulous airway preparation due to continuous bleeding. Intubation was successful, though initial hypotension required intervention. Postoperatively, the patient recovered without complications. While NPS remains integral for COVID-19 diagnosis, meticulous technique and awareness of potential complications are paramount, especially in patients with nasal anomalies. Vigilance and proper patient education can mitigate risks associated with this procedure.

Keywords: Nasopharyngeal, Epistaxis, COVID-19, Sphenopalatine Artery, Complications

1. Introduction

The COVID-19 pandemic has caused up to 284 confirmed cases and 936,521 fatalities worldwide. In Qatar, over 700,000 individuals have undergone testing for the virus [1]. The primary diagnostic approach is polymerase chain reaction (PCR) testing of nasopharyngeal swab samples, which has high accuracy and superior detection rates compared to oropharyngeal swabs [2]. Despite attempts to assess viral levels in saliva, consistency is needed. The nasopharyngeal swab is the globally preferred technique. Epistaxis is a significant part of emergencies for otolaryngologists, and understanding nasal vascular anatomy is crucial for identifying bleeding sources and facilitating appropriate medical, conservative, or surgical interventions [3].

This report aims to represent a unique case of intractable sphenopalatine artery bleeding following nasopharyngeal swabbing, necessitating hospitalisation and surgical intervention. Given the absence of prior documentation in the literature, healthcare professionals should remain vigilant regarding this rare complication associated with nasal swabbing.

2. Case Presentation

A 46-year-old male with no comorbidities presented with severe intractable nasal bleeding following a screening COVID test. Despite initial packing, he continued to experience oozing and a drop in haemoglobin levels. He underwent surgical intervention to control the bleeding. Intraoperative examination revealed a deviated nasal septum, an injury along the left inferior turbinate, and a bleeding point at the insertion of the left middle turbinate. The surgical intervention included revision septoplasty, removal of the left septal spur, and left sphenopalatine artery ligation, successfully controlling the bleeding. The patient remained free of further bleeding and discharged safely.

As shown in **Figure 1**, intraoperative photos depict an injury along the inferior turbinate and a deviated nasal septum to the left with a spur. This highlights the anatomical abnormalities contributing to the patient's condition.

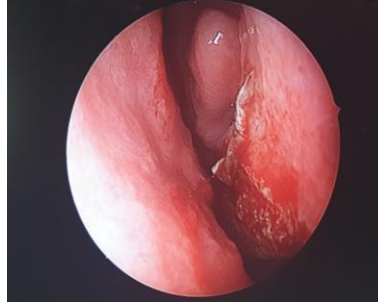
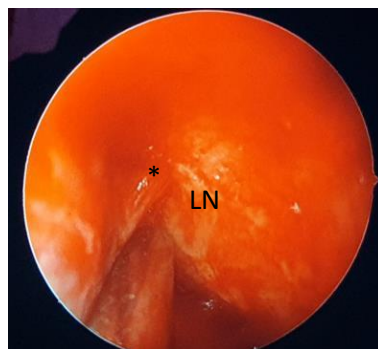


Figure 1. Intraoperative photo lift injury along the inferior turbinate, septal deviation to the left with spur

Figure 2 illustrates the intraoperative anatomy of the sphenopalatine artery, emphasising its significance in the case context. These visual aids provide valuable insight into the surgical findings and interventions to address the patient's intractable nasal bleeding.



***SPA**

LN: Lateral nasal wall

Figure 2. Intraoperative photo of sphenopalatine artery anatomy

Anesthetic Management

The patient underwent a thorough anaesthesia assessment due to their severe condition and continuous bleeding. High-risk consent was obtained, and the theatre was prepared with alternative airway tools and sugammadex. Rapid sequence induction was performed, and successful intubation was achieved using a video laryngoscope. Anesthesia maintenance was maintained with sevoflurane, dexamethasone, and ondansetron.

3. Discussion

The detection of SARS-CoV-2 nucleic acid in upper respiratory specimens is paramount for diagnosing, assessing transmission risk, and managing COVID-19. This pandemic has caused significant global morbidity and mortality. A nasopharyngeal swab (NPS) has emerged as the cornerstone method for obtaining these specimens, involving inserting a thin, flexible stick with cotton at the tip. However, despite its widespread use, complications related to NPS are relatively infrequent. This report presents a unique case of intractable epistaxis following NPS, shedding light on the importance of vigilance during its administration, particularly in patients with nasal anomalies [1].

NPS is typically performed by gently inserting the swab along the nasal floor and nasal septum until it contacts the posterior wall of the nasopharynx. Proper technique, clear communication, and explanation of the procedure to the patient are essential to minimise discomfort and potential complications. However, despite precautions, complications such as intractable epistaxis can occur, as demonstrated in our case [4].

The case of intractable epistaxis post-nasal puncture (NPS) is consistent with previous studies highlighting complications associated with this common diagnostic procedure. Alalami et al. (2008) highlighted the importance of recognizing anatomical variations and risk factors in patients undergoing NPS. Their case also highlighted the presence of anatomical variations, suggesting patients with such anomalies may be at increased risk for complications post-NPS. The findings emphasize the need for thorough patient evaluation and consideration of nasal anatomy to mitigate risks associated with NPS administration. [5].

The case of intractable epistaxis post-NPS highlights the potential complications associated with the diagnostic procedure. It emphasizes the need for healthcare providers to be aware of potential complications, especially in patients with underlying nasal anatomical abnormalities. The case underscores the importance of tailored patient assessment and careful technique during NPS administration to minimize adverse events. It also emphasizes the significance of prompt recognition and management of NPS-related complications, highlighting the need for interdisciplinary collaboration and a coordinated approach to manage these complications, optimising patient outcomes and minimizing morbidity. [6].

Intractable epistaxis is a life-threatening condition, emphasising the need for timely intervention to reduce mortality and morbidity (Saeed et al., 2024). Prevention strategies should focus on meticulous technique during NPS administration, thorough patient assessment, and awareness of potential complications, especially in patients with nasal anomalies [7].

Our case report adds to the existing body of literature by providing a unique perspective on the potential complications associated with nasopharyngeal swab (NPS) testing. While previous studies have primarily focused on the incidence and management of epistaxis post-NPS, our case underscores the importance of considering patient-specific factors, such as nasal anatomy and prior trauma, in assessing the risk of complications. By highlighting these factors, our case contributes to a more comprehensive understanding of the risks associated with NPS administration and emphasises the need for individualised patient care.

While NPS remains integral for COVID-19 diagnosis, healthcare professionals must be vigilant in its administration to prevent rare but potentially serious complications such as intractable epistaxis. This case highlights the importance of careful technique, patient education, and interdisciplinary collaboration in managing complications associated with NPS. Further research is warranted to understand better the risk factors and optimal management strategies for NPS-related complications.

Strengths and Limitations

Strengths of this case report include its detailed documentation of a rare complication post-NPS, highlighting the importance of vigilance and interdisciplinary collaboration in managing such cases. However, limitations include the need for a comparative analysis with similar cases and the absence of long-term follow-up data, warranting further research to better understand risk factors and optimal management strategies.

Conclusion

In conclusion, the case report highlights the risk of intractable epistaxis in nasopharyngeal swab (NPS) testing for COVID-19 diagnosis. Healthcare providers must be aware of potential risks, especially in patients with nasal anomalies, and use vigilance, meticulous technique, and thorough patient assessment to minimize complications. Further research is needed to understand risk factors and management strategies.

Acknowledgements

The author(s) thank the staff of Hamad Medical Corporation (HMC) in Doha, Qatar, for their support in this study.

References

1. Wang, H., et al., *Nasopharyngeal swabs are more sensitive than oropharyngeal swabs for COVID-19 diagnosis and monitoring the SARS-CoV-2 load*. *Frontiers in medicine*, 2020. 7: p. 334.

2. de Bonnecaze, G., et al., *Intractable epistaxis: which arteries are responsible? An angiographic study*. Surgical and Radiologic Anatomy, 2017. **39**: p. 1203-1207.
3. Fatakia, A., R. Winters, and R.G. Amedee, *Epistaxis: a common problem*. Ochsner Journal, 2010. **10**(3): p. 176-178.
4. Pondaven-Letourmy, S., et al., *How to perform a nasopharyngeal swab in adults and children in the COVID-19 era*. European annals of otorhinolaryngology, head and neck diseases, 2020. **137**(4): p. 325-327.
5. Alalami, A.A., C.M. Ayoub, and A.S. Baraka, *Laryngospasm: review of different prevention and treatment modalities*. Pediatric Anesthesia, 2008. **18**(4): p. 281-288.
6. Rudmik, L. and T.L. Smith, *Management of intractable spontaneous epistaxis*. American journal of rhinology & allergy, 2012. **26**(1): p. 55-60.
7. McDonald, R., A.P. Patel, and C. Horrocks, *A rare and life-threatening cause of epistaxis*. BMJ Case Rep, 2015. **2015**.