Unrecognized harm form ‘dry vaping’

Infected pharyngeal burns causing airway compromise

Zhang H[1], Baguley K[2]

1. Department of Otolaryngology, Head and Neck Surgery, Wellington Regional Hospital, Te Whatu Ora, Health New Zealand

2. FRACS Otorhinolaryngology Head and Neck Surgery, Department of Otolaryngology, Head and Neck Surgery, Wellington Regional Hospital, Te Whatu-Ora, Health New Zealand

Case report

- Fit and well 23 year old Maori male, presented with a rapidly progressive invasive group A strep supraglotitis
- No infective symptoms prior to presentation, but was noted to have extensively ‘dry vaped’ throughout the day, continuing to inhale on a burnt vape with subsequent development of a sore throat whilst vaping.
- The following morning the patient developed fevers, odynophagia, dysphagia and voice change and presented to the emergency department.
- Over a 4 hour period whilst in ED the patient rapidly became septic with evidence of airway compromise.

Outcome

- Blood cultures taken on admission subsequently grew GAS
- The patient was monitored intubated in ICU on high dose steroids and antibiotics.
- The patient was successfully extubated day 4 of admission and subsequently discharged without further complications

Figure 1. FNE in ED, atypical localized posterior left pharyngeal wall inflammation extending to epiglottis ?burn type injury

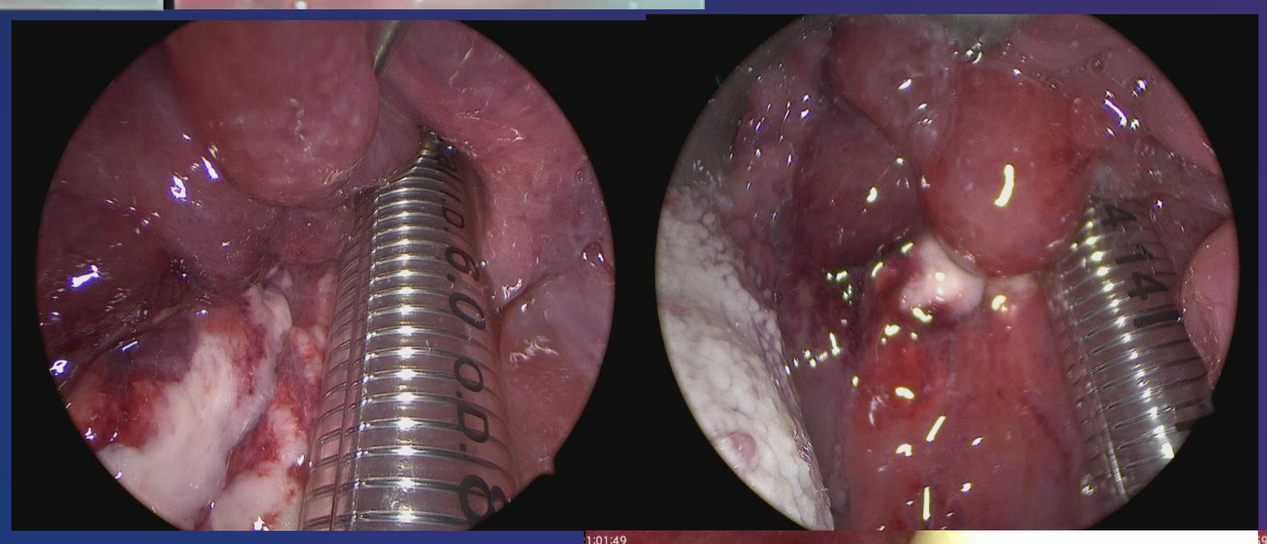

Figure 2. Intra-operative images following AFOI, significant progression of supraglottic and pharyngeal wall inflammation with sloughy hemorrhagic changes from inferior tonsil to pyriform fossa.

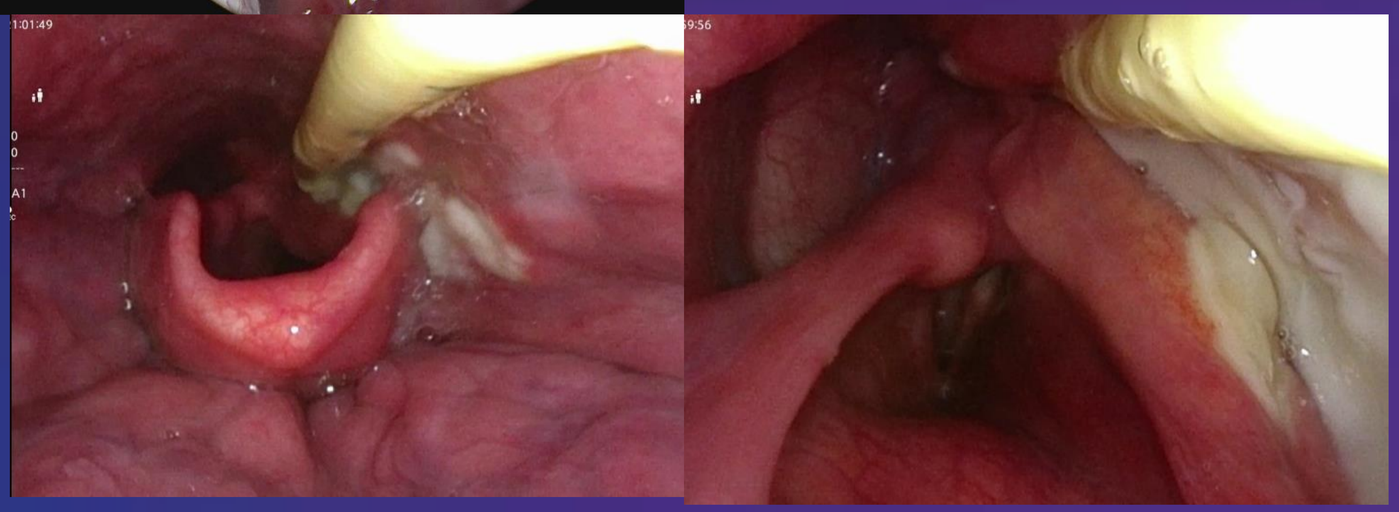

Figure 3. FNE day 9 of admission prior to discharge, resolution of supraglottic oedema, persistent slough in left posterior pharyngeal wall

‘Dry vaping’

Whilst there is extensive research and awareness of vape related lung injury or burn injuries resulting from vape explosions, there are only isolated reports of oropharyngeal or laryngeal burns associated with vaping.

In particular the practice of ‘dry vaping’ or inhaling from a vape that has no vape liquid in it, results in burning of the coil and has been shown to result in a much more severe inflammatory response in tissues. (1,2)

References

1. Trends in smoking and vaping: New Zealand Health Survey 2024/25 [Internet]. Ministry of Health. 2025 Nov 19 [Cited 2026 Jul 1]. Available from: https://www.health.govt.nz/monitoring-statistics/surveys/new-zealand-health-survey/publications/202425-survey-publications/trends-in-smoking-and-vaping
2. Shi J, Dai W, Chavez J, et al. One Acute Exposure to E-Cigarette Smoke Using Various Heating Elements and Power Levels Induces Pulmonary Inflammation. Cardiol Res. 2022;13(6):323-332

Discussion

Vaping is becoming increasingly prevalent in New Zealand with a particularly rapid increase in prevalence in the younger population.

This case highlights an unrecognized harm that can come from ‘dry vaping’, the absence of preceding infective symptoms, atypical appearances of the pharyngeal wall inflammation and rapid progression indicate that the patient sustained a burn type injury from dry vaping that allowed for a superimposed invasive GAS infection.

With the increasing prevalence of vaping particularly in the younger population, clinicians need to consider both upper airway burns from vaping as a possibility and as a risk factor for more severe or progressive presentations of upper airway infections.