

# Deep Neck Space

Authors: Dr Markus Chan (GPST2)

Dr Melissa Nagar (FY1)

Ms. Lubna Hadoura (Consultant ENT Surgeon)

ENT Dept, Victoria Hospital, Kirkcaldy

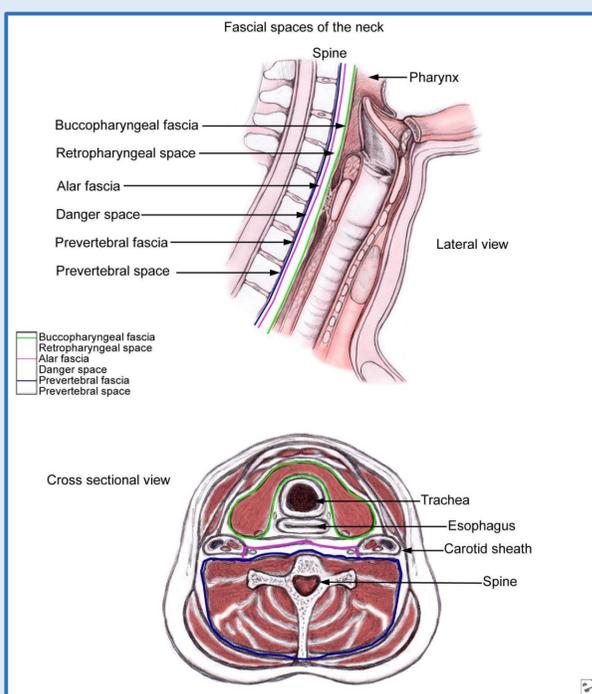
# Infection

## An interesting case

### Introduction

Tonsillitis is common, with an estimated 10% incident rate in primary care.<sup>i</sup> Most of these cases will be uncomplicated and respond to simple antibiotic therapy.

Abscesses are a common complication, with an estimated incidence of 1%.<sup>ii</sup> Rarely, these can involve the deeper fascial layers within the neck. These deep neck space abscesses are especially dangerous due to their proximity to the airway and aerodigestive tract and the anatomical "danger zone," through which infection can rapidly involve the thoracic cavity and mediastinum.



### Case History

Patient (AB) is a normally well 64 year old male with no past medical history. He presented initially to his GP with symptoms of tonsillitis and was commenced on a course of oral Phenoxyethylpenicillin. However, his symptoms worsened, and he presented to A+E.

At this time, he reported a sore throat, odynophagia, dysphagia with solids, and a fever. Examination revealed a swollen right tonsil without peritonsillar swelling and oropharyngeal thrush.

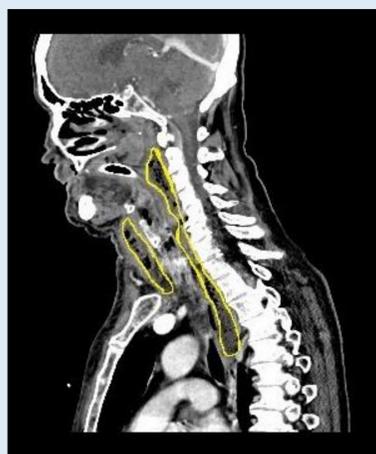
Initial bloodwork showed raised inflammatory markers (WCC 15, CRP 130). His symptoms improved following analgesia, and he was discharged home with a course of Fluconazole in addition to his antibiotics.

### Case History (2)

He re-presented acutely to A+E a few days later with new anterior neck swelling, complete aphagia, hoarseness, systemic upset, and confusion. Examination revealed diffuse, tender, bilateral neck swelling and early haemodynamic instability. Again, no peritonsillar pathology was found.

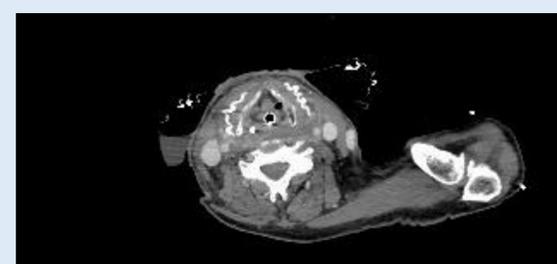
Repeat bloods showed a new leucocytopenia and increasing inflammatory markers (WCC 3, CRP 364).

Cross-sectional imaging revealed multiple deep neck space abscesses extending down to the carina, the largest of which extended over 21 cm in length. The report also suggested the source of infection was a perforated right tonsillar abscess, which reflected the initial assessment of the patient.



### Treatment

AB initially received IV Dexamethasone to reduce the inflammation around his throat and help stabilise him. An endotracheal tube was inserted to similarly secure his airway, and AB was admitted to ICU for stabilisation. The neck space abscesses were drained locally, and repeat imaging showed good drainage of the neck abscesses, but persistent thoracic abscess.



AB was then transferred to Cardiothoracics at RIE for a thoracotomy and further drainage of the thoracic part of the abscesses. When the collections were all satisfactorily drained, AB was transferred back to VHK for ongoing rehabilitation.

### Discussion

This case highlights the importance of recognising the red flags of impending airway obstruction (*airway disaster symptoms*) of aphagia/drooling, change in voice, stridor, and respiratory distress.<sup>iii</sup>

Acute management of this involves high-dose steroids, which reduce airway inflammation<sup>iv</sup> and protecting the airway using adjuncts as required.<sup>v</sup> In cases like AB's, where the abscess extends beyond the neck, involvement of Cardiothoracics for definitive drainage is essential.

This case also demonstrates the risk of tonsillar infection. Even in the absence of significant risk factors (e.g., immunosuppression, diabetes), infection can rapidly progress through the deep neck spaces into the thorax and mediastinum.