

# A modified approach for tracheostomy suspension: A retrospective review of one Trusts Practice

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## Introduction:

In major head and neck cancer surgeries, tracheostomies provide a safe airway for both the intraoperative management of the patient and their postoperative recovery.

Although tracheostomies facilitate a safe airway, tube displacement or accidental de-cannulation can potentially be fatal. Bedside reinsertion of a tracheostomy can be extremely difficult in patients' post-radical ablative operations for head and neck cancer.

A modified approach of suspending the trachea has been utilised by the head and neck surgeons at Royal Blackburn Hospital. This technique involves creating a window in the trachea and stitching the inferior edge of the tracheal window to the skin, thus generating a rescue suture<sup>1</sup> (image 1). Having the trachea flush to the skin ensures easy access to the airway in case emergency re-cannulation is required.

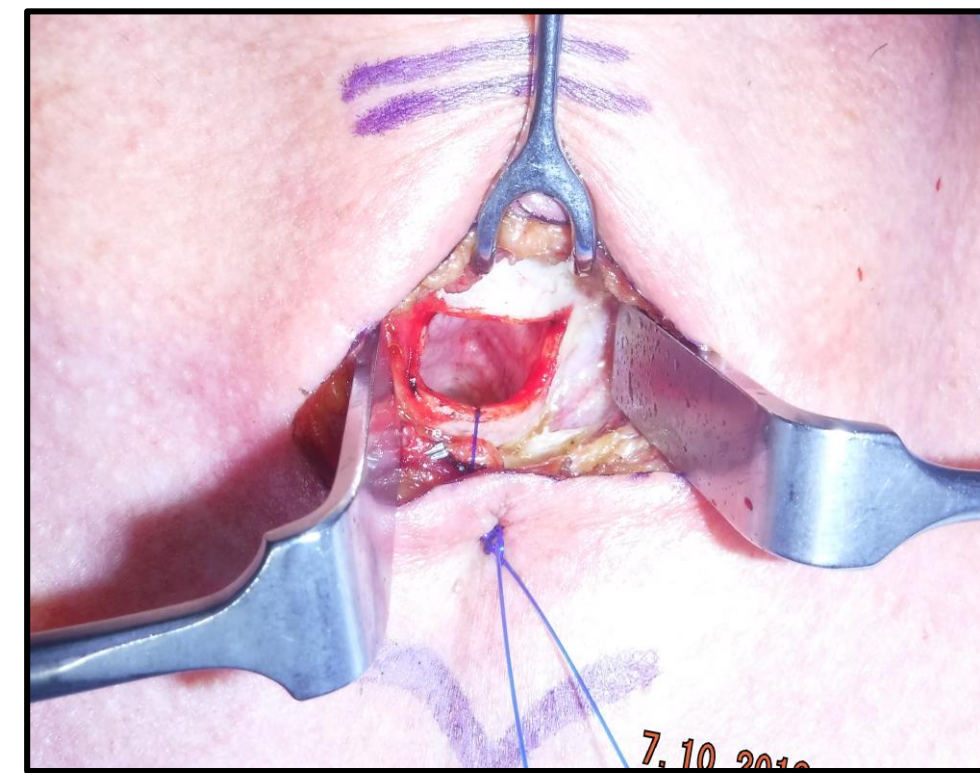
## Aim

The purpose of this audit is to assess tracheostomy related complications when executed with the new modified approach for securing a tracheostomy in major head and neck surgeries.

## Methods

We retrospectively reviewed the perioperative notes of patients undergoing an elective surgical tracheostomy for major head and neck surgery with the modified approach for tracheostomy suspension. End points included: Any tracheostomy related complications; subsequent management of any identified complications; Potential reasons for the complications including patients co-morbidities, BMI and post-operative comments.

Image 1: Tracheal Window with Rescue Suture



## Results

Complication Summary

■ No complications ■ 1 Complication ■ 2 Complications

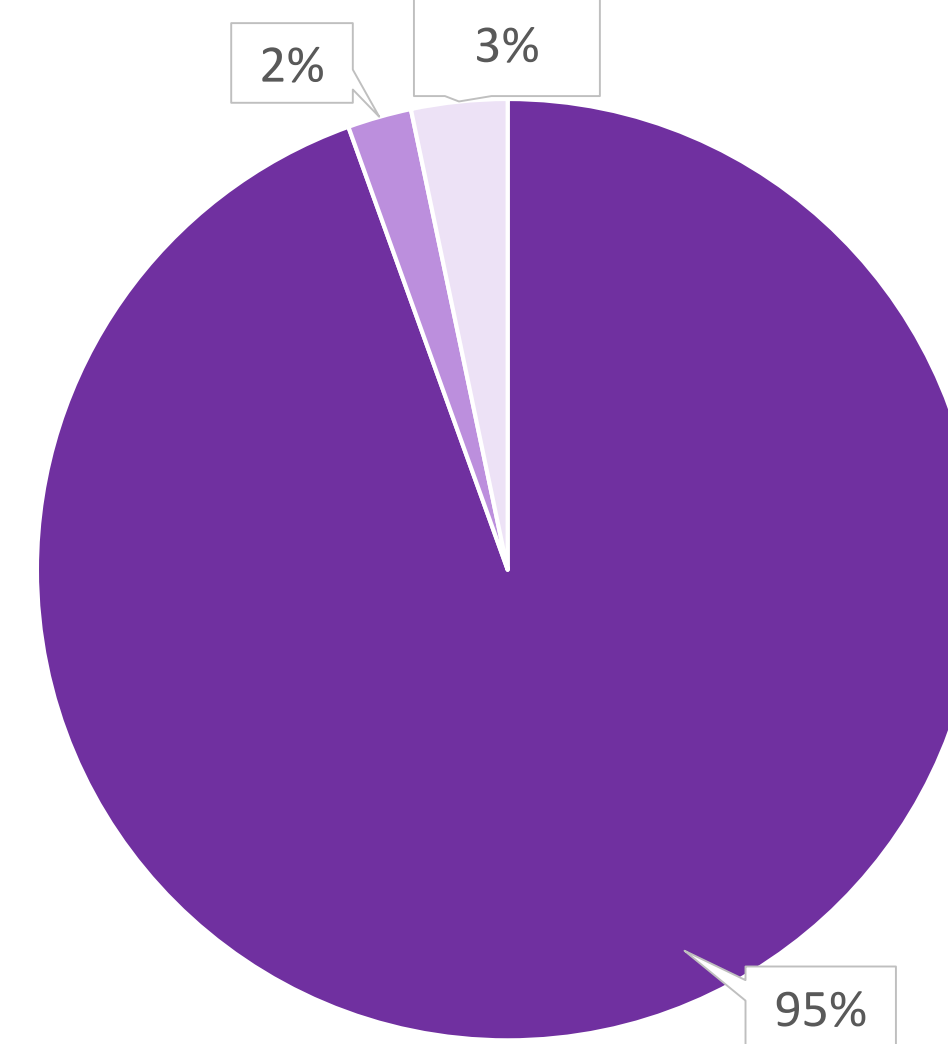


Table 1: Complication Specifics

| Patient: | Complication 1                                 | Complication 2   |
|----------|--|--|
| 1        | E. coli confirmed infection within the airways | Displacement of tracheostomy with re-cannulation                   |
| 2        | Mucous Plug                                    | Displacement of tracheostomy tube without re-cannulation           |
| 3        | Mucous plug leading to re-cannulation          | N/A  |
| 4        | Mucous plug                                    | E. coli and Candida albicans confirmed infection within the airway |
| 5        | Paratracheal arterial bleed                    | N/A  |

## References:

1. Ormandy et al. Tracheostomy Suspension: A modified approach for securing the airway. *British Journal of Oral and Maxillofacial surgery*, 58 (2020), 717-718.

## Discussion:

The first patient with a displaced tracheostomy tube had difficult neck anatomy due to a genetic condition. Several weeks after her surgery, three out of the four rescue sutures placed had snapped. The one suture that remained was used to successfully re-cannulate the tracheostomy tube. The second patient with a displacement was known to have a deep trachea and increased adipose tissue around the neck. Since this patient was in the process of de-cannulation, it was decided to proceed with decannulation rather than replacing the tracheostomy. The decannulation was uneventful. The patient with a large, thick mucous plug causing airway obstruction presented with dyspnoea and respiratory distress. Conservative methods did not resolve the obstruction. Therefore, the tracheostomy was removed completely and a new one was reinserted. With the use of the rescue sutures, this was performed succinctly and uneventfully, with the patient stabilising shortly after reinsertion.

The patients with the mucous plug and infection, and paratracheal bleed were managed appropriately and safely.

## Conclusion:

There were two occasions where re-cannulation of a displaced tube was necessary; both were uneventful and both patients stabilised shortly after re-insertion. The rescue sutures were pivotal in swift re-insertion according to the debrief given by the doctors attending the emergencies. Despite one patient only having one rescue suture left, it was enough to allow visualisation of the trachea and insertion of a new tracheostomy tube swiftly. No new additional complications, not already documented and recognised for any surgical tracheostomy, were encountered.