

(CASE REPORT)



## A 33 year old with 21 years psychological dependence on tracheostomy who was successfully decannulated with a simple method: A case report

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### Abstract

**Background:** Psychological dependence on tracheostomy is ubiquitous among children and very young.

**Case:** We report a case of a 33year old who had tracheostomy for recurrent respiratory papillomatosis 21years ago, Efforts at decannulation through simple and surgical methods failed leaving her on a permanent tracheostomy and psychological dependency for over 2 decades

The patient presented to our clinic and following evaluation, it was realize that apprehension and loss of self confidence was a major factor. she was engaged in medical,social and psychological counseling prior to this 4th trial at decannulation,when it was realized she was stable enough and psychologically ready. A simple decannulation method focusing mainly on close monitoring of vital signs, especially oxygen saturation rather than somatization features of patients due to exaggerated anxiety and fear which appears to be largely a factor in the previous failed attempt at decanulation. interestingly, the patient tolerated the decanulation trial and final decannulation. she has been stable and off tracheostomy for the past 6months

**Keywords:** Psychological dependence; Oxygen saturation; Tracheostomy stoma: Oyygen monitor device

### 1. Introduction

Tracheostomy is the surgical opening made on the anterior wall of the trachea which is maintained with a tube aimed at relieving upper airway obstruction in critically ill patient with other indications. Tracheostomy is one of the oldest surgical procedure on records, dating back as far back as 3600 BC in Egypt.[ 1][2]There are several indications for tracheostomy,, however with associated risks or complications.[ 3] These risk and complications associated with prolonged Tracheostomy include dependency, trachea stenosis, tracheocutaneous fistula, dysphagia, aspiration, stoma infection, tube obstruction, pulmonary complication, accidental decannulation etc . [4][5]To avoid these complications, decannulation must be performed, this process follows when the indication for tube placement has resolved . [6][7]

Difficult decannulation due to dependency results when a patient is apparently stable and physiologically capable of giving up his artificial airway but unable to do so. [8] However,when the cannula is removed the patient becomes breathless,cyanotic, and in some cases may lose consciousness.[ 8]

Infants are obligate nasal breathers, with relatively smaller airway diameter and nasal airway resistance of about 50% of their total airways resistance,[9][10]

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Tracheostomy reduces dead space, airway resistance and work of breathing to meet metabolic demands [ 11 ]this however makes children more comfortable and easily becomes psychological dependent o tracheostomy . with long standing tracheostomy they however are prone to loosing memeory of mouth and nose breathing.[12] invariably the new sensation after decanulation becomes distressing and intolerable due to significant changes in the upper airway that has occurred.[12] there are reported cases of prolonged tracheostomy for as long as two decades or more [5]

## 2. Case report

We report a case of a thirty-three year old lady who presented to us in 2022 with long standing difficulties in closing the tracheostomy stoma for 21years due to psychological dependence.



**Figure 1** Neck Ct-scan showing tracheostomy stoma before closure



**Figure 2** Two-week post tracheostomy closure scar

She had emergency tracheostomy in 2004 on account of 3year history of noisy and laboured breathing, while under general anaesthesia,she had examination, and excisional biopsy to relieve the upper airway obstruction, histology report of excised tissue turned out to be recurrent respiratory papillomatosis. Attempts at decannulation on three occasions were unsuccessful, last successful attempt was 10years ago but not without leaving a tracheostomy stoma which over time became contracted.

Examination at presentation in our clinic reveals a young woman, she was calm, not in any obvious respiratory distress, vital signs were stable, oxygen saturation was 98%, she had a midline, contracted (8mm), anterior neck tracheostomy stoma, patent, air flow demonstrable, nasal cavity was also patent with good air flow. Computer tomography scan of the neck reveals a patents trachea except for area of defect on the anterior wall (figure1) She was counseled of the findings, reassured, her anxiety was allayed and was booked for surgical closure of tracheostomy stoma.

She first of all had a temporary closure with gauze and plaster, she was apprehensive and resisted as she expresses fear of breathlessness .it was noted that her complaints and expressions does not correspond with her vital signs on the monitor which was our guide.. Her vital signs were stable, oxygen saturation was between 98% - 100% room air. she was re-assured and, engaged in a conversation with the aim to distract and allay her anxiety. this we continue all

through the period and each time she try to resist the process.we were scientifically guided. constant monitoring of patient and vital signs, re-assurance and engagement in conversations was what we did until the point when she became calm,relaxed, and cooperative as she then exclaimed she could breath fine. We then proceeded for surgical closure under local anaesthesia. and we successfully decannulated. her. She was returned to the ward after 3 hours of monitoring in the theatre. We maintained close monitoring of vital signs and oxygen saturation for 24 hours on admission and there was no problem with her saturation.the Spo2 on the average was 98%. she was discharge home after 1 day. and seen at follow up visit. The tracheostomy stoma closure healed well (figure2) she was then booked for cosmetic repairs of the scar by the plastic surgeons.

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### 3. Discussion

The stepwise process of weaning from tracheostomy to maintain spontaneous respiration and /or airway protection is termed decannulation. Apparently this simple process however requires an intact sensorium, invariably a near perfect coordination of brain, respiration, phonation, swallowing and coughing reflexes.[13] Aberration in this interplay will results in failure of the process[14]There are various decannulation techniques, which are described in the literatures,capping,downsizing and abrupt removal of tracheostomy tube.[15][6][7] We were able to achieve successful decannulation in this lady by laying more emphases on objective signs and less on subjective complaints under close monitoring but focused on scientific parameters and monitoring of vital signs especially oxygen saturation.We noticed that fear and anxiety was the underlying factors. We finally discovered that her complained of breathlessness during previous attempt at decannulation, in a supposedly good oxygen saturation and clear airway (figure1) was merely a psychological feelings.

Anxiety is one of the most commonly reported and most distressing symptoms associated with patients on tracheostomy who are unable to speak with tracheostomy tube insitu, so also is depression.[16] in Anxiety,there is a perceived mismatch and resultant feeling of dread or impending doom this however leads to hyperawareness and resultant physiologic responses.[16][17] psychological responses associated with anxiety include fear,anger,fraustration and withdrwal. [18]prolonged anxiety can predisposes a patient to difficult decannulation [19] Anxiety can be managed non pharmacologically by removing or modifying the offending stimuli [18]Cognitive distraction is a common strategy amongst others used to disengage negative thoughts that contributed to fear and anxiety.this can be achieved by engaging the patient in a simple conversation. Also is verbal strategies which is done by re assurance, encouragement and coaching [18]. All of these were employed in our decannulation process

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### 4. Conclusion

Psychological dependent on tracheostomy can be overcome by reassurance, focused counselling, close monitoring of patient and his/her vital signs and oxygen saturation. This becomes pertinent when its established that the primary indication for trachesotomy has been obviated.

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### Compliance with ethical standards

#### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

#### *Statement of ethical approval*

Patient gave verbal consent which was also recorded, sent to me via audio recording and is kept save in my archive

#### *Statement of informed consent*

All participant and co-authors gave their consent for this publication and they eagerly look forward for the publication

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