

Bjork flap

Abstract

Tracheostomy is routinely practiced in otorhinolaryngology. Post surgery tracheostomy tube care is essential with close watch for tube blockage by secretions or accidental decannulations. Bjork flap is one of the modification of incisional tracheostomy with lesser complication rate post surgery. This simple modification might be cornerstone in further management of patient and should be routinely practiced. Previous various studies and recent review favour this modifications, however, strong evidence is lacking.

Keywords: bjork flap, confounding factors, tracheostomy

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Introduction

Tracheostomy is one of life saving procedure in medical practice which should be learned by all in this field. However decannulation of tracheostomy tube is a common problem faced mostly by residents in the surgical ward. Management on an emergency basis is compulsory as it is vital for life. Previous various studies indicated modified tracheostomy procedure i.e, Bjork flap has less complication associated with it and recannulation with patent tracheostome is easy.

In 1952, Bjork created an inferior based tracheal flap through 2nd, 3rd and 4th tracheal ring which was later fixed to skin to secure the lumen of a tracheotomy tube.¹ Following this Bjork flap, many studies came which cited various complications or drawbacks for this flap. However, various studies have also reported no added risk and absence of complications associated with this. A recent good systemic review on bjork flap by Au et al.,² searched all MEDLINE data from database inception to march 2016 for contemporary reviews on this flap. This review compared all relevant studies related to Bjork flap like by Malata, Hammarfjord et al.,^{3,4} retrospective review by the Dukes as well as a prospective cohort study of Lulenski on Bjork flap. It suggests that Bjork flap tracheostomy can be performed with minimal complications, however, it also questions the strength of previous studies comparing Bjork with incisional or excisional window tracheostomies.

The fundamental point of all these studies revolve around two major points which was also discussed by Au et al.,² first, the safety of Bjork flap and second, comparison with normal incisional or excisional tracheostomy technique. While reviewing various articles, we found some confounding factors associated which, if considered may provide more strength to the study comparing advantages or complications associated with Bjork flap.

1. Elective tracheostomy – the safety of Bjork flap and its comparison can be studied in elective tracheostomy only. Emergency tracheostomy by simple incision or excision window take less time and mostly done by residents. Moreover, the rush of adrenaline and peak timing (reflexes dominates knowledge and common sense) give less chances to do successful Bjork flap even in experienced hands. One of the major studies like by Malata et al.,³ took only elective tracheostomy cases for study.
2. Prolonged intubations are an indication for elective tracheostomy, however, tracheal stenosis after Bjork flap in these cases (if

present) can be difficult to assess as prolong intubation itself known to cause tracheal stenosis.⁵

3. Laryngeal Malignancy: one of the most common cause of tracheostomy in malignancy is stridor. Then it becomes emergency tracheostomy, and if not in stridor in cases of laryngeal cancers, then it will not be wise to do Bjork flap in cases of transglottic cancers or subglottic cancers with involvement of tracheal wall.
4. Paediatric age tracheostomy- should not included in Bjork flap cases as these have a small tracheal luminal diameter with soft cartilages (more chances of injury to adjacent structures).
5. Previously irradiated neck should be excluded from study in view of thickened skin and subcutaneous tissue which may affect healing.
6. Obese patient and short neck have difficult tracheostomy as compared to others, so should be excluded.⁵
7. Chronic medical illness like uncontrolled diabetes or other which may affect wound healing.
8. Single surgeon should perform tracheostomy in all study cases.

When talking about postoperative follow up for tracheal stenosis, again many things should be considered related to cuffed tube:⁷

- i. Cuff pressure-pressure in endotracheal tube (ETT) before tracheostomy and in tracheostomy tube (cuffed) in the post surgery period has to be carefully monitored.
- ii. Duration of ETT and tracheostomy tube in patient should be less and
- iii. Post surgery, infection of tracheostome should be dealt carefully.

A study done by Malaya et al.,³ and others^{8,9} was very promising regarding Bjork flap with lesser complications than traditional excision window tracheostomy while considering most of the issues in their study.

Conclusion

Various reviews about Bjork flap plus good studies indicated their use routinely while performing tracheostomy. This, however, depend on surgeons preference, conditions as well indications of tracheostomy in required situations. More studies with considerations

of above discussed issues should be done for rigid support of routine Bjork flap use in clinical practice.

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Conflicts of interest

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