

Z-Plasty Method In Tracheostomal Stenosis Repair: A Case Report

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Abstract

Tracheostomal stenosis is a complication after laryngectomy. Predisposing factors such as circumflexial closure, radiotherapy, tracheal infection, female gender, and taut closure of the wound may be the cause. Various surgical methods have been applied to correct this condition. Here, we present a 41-year-old male patient treated with inferior-based Z plasty method.

Keywords: Tracheostomal stenosis, Laryngectomy, Z plasty.

INTRODUCTION

Tracheostomal stenosis is an undesirable complication that may occur after laryngectomy. Although this complication may occur immediately after the operation, it may be years after the operation. Several procedures have been applied to prevent stenosis. These methods include vertical incision of trachea rings, various local flap techniques and Z plasty (1). A 50% contraction of the trachea lumen causes stenosis in the cross-sectional area, which can cause respiratory problems. Many surgical techniques have been applied for stoma revision. These are superior base flaps, extrusion flaps, circular incisions, Z plasty and rotation flaps (2). In this case, we present a revision of Z-plasty in a patient who developed tracheostomal stenosis after total laryngectomy.

CASE REPORT

A 41-year-old male patient was diagnosed with laryngeal cancer 4 years ago. However, He had undergone total laryngectomy and voice prosthesis 2.5 years ago. The patient was admitted to our clinic because of tracheostomal fistula leakage and tracheostomal stenosis. The patient's examination revealed that the tracheostomal patency was severely narrowed, there was leakage from the

tracheacheefejeal fistula and the provox device was not functioning efficiently. The patient was excised for circumflex at the 5 and 7 hours postoperatively. Then the trachea was excised and a vertical stenting of the trachea was made and a new stoma was created. The old tracheo-oesophageal fistula was repaired (Figure 1,2).



Fig 1. Creation of inferior based flaps.

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Fig 2. The appearance of the stoma after completion of the Z plasty.

A new provox device was administered to the patient 2 months later. The patient did not have any additional complaints.

DISCUSSION

Tracheostomal stenosis occurs as a result of cicatricial changes around the stoma. Predisposing factors that may cause stenosis include circular closure, tissue loss which may prevent mucosal closure, excessive wound tension, fistula formation, tracheal infection and radiotherapy (3). Our patient also had a history of preoperative radiotherapy and tracheaoesophageal fistula leakage. Preoperative, operative and postoperative factors that may occur in the postoperative period and careful patient care are important to prevent the risk of this complication if the stenosis is obstructed or pre-formed.

For surgical repair of the stenosis, excision of scar tissue around the trachea, scar de-epithelization, muscular flaps can be achieved with local skin flaps

such as hypertrophic scar or keloid excision or Z plasty (4-6). In our patient, we initially excised scar tissue as circumflex. Afterwards, the lumen opening was increased by vertical excision of the trachea. After the inferior based flaps were prepared, a new stoma was created. The important point here is to prevent the formation of a tense area and to remove the previously formed skatrix. In addition, a tracheoesophageal fistula should be repaired and a second procedure for a voice prosthesis should be performed after appropriate recovery. In our case, we have achieved enough stoma width by using this method.

CONCLUSION

The occurrence of tracheostomal stenosis is a compelling complication after the operation. If such a complication develops, it is a safe and effective method to revise scarring and new stoma with Z plasty.

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