One stage “slit” deltopectoral flap technique for end tracheostomy reconstruction in irradiated postlaryngectomy patient

Incisão em abordagem única por meio de técnica de retalho deltopeitoral para reconstrução de traqueostomia em paciente submetido à radioterapia após laringectomia

INTRODUCTION

Reconstruction of a tracheal stoma wound in patients who undergone total laryngectomy is challenging especially when the peristomal skin is unhealthy due to radiation therapy. A study reported that complications occur in about 40% of the patients. The variety of corrective surgical procedures confirms the difficulty to manage this problem. The reconstruction is complex and usually requires more than one stage. Techniques such as rotational or transposition flap of local skin may not work accordingly because the adjacent irradiated skin is unhealthy, poorly vascularized, which is difficult to mobilize, and has low survival rate, leading to recurrent wound breakdown. The implant of non-irradiated healthy tissue such as the deltopectoral flap, allows wide excision of scarred tissue surrounding the trachea, easy reconstruction of the stoma and rapid postoperative healing. The problem with such flaps remains the flap insetting around the stoma.

ABSTRACT

Reconstruction of tracheal stoma wound in patients who undergone total laryngectomy is challenging especially when the peristomal skin is unhealthy due to radiation therapy. The reconstruction is complex and usually requires more than one stage. We present a simple technique successfully used in an 80-year-old patient with dehisced tracheal stoma wound and retraction of trachea.

Keywords: Breast cancer, Reconstruction, Implant, Reverse abdominoplasty, Skin/abdominal flap.

RESUMO

Reconstruir lesão do estoma traqueal em pacientes submetidos a laringectomia total é um desafio, especialmente, quando a pele do peristoma está lesionada devido à radioterapia. A reconstrução é complexa e geralmente requer mais de uma abordagem. Apresenta-se técnica simples usada com sucesso em paciente de 80 anos com deiscência de lesão do estoma traqueal e retração da traqueia.

Descritores: Keywords: Laringectomia total; Traqueostomia; Retalho deltopeitoral.
The most commonly used technique so far is tuig and inseg of the flah, but it hds unsatisfactory results. Hence, sev-
eral options have been propose, including a fenestrated flap. Most of themse options are complicated, requige more than
one stage or do not present enough safete. We present a sim-
ple techniqued successfully used in an 80-year-old patient
with dehisced tracheal stoma wound and retraction of tra-
chea. The patient had undergone total laryngectomy and ir-
radiation that resulged in poor healing status. We report a single
staged rapid treatment ofstracheal stoma wound. Our meth-
od comprises in the use of pedicled deltopectoral flap that is
placed overdtracheostomy site by “slit” in the distaltsegment
that corresponds to the stoma and provides anchor point to
the retracted trachea.

CASE REPORT

This was a patient who underwent total laryngectomy
due tr laryngeal cancex. After the procedure, he underwent
post-operative radiotherapy for two months. This led to a
breakdown of suture line of the tracheostomy site and devel-
opment of pharyngocutaneous fistula. When the patient was
referred to our department, he was being fed by a nasogastric
tube. As a result of the unhealthy skin, we observed an isch-
emic unhealthy skin around the stomal site with retraction of
the trachea and dehiscence of the wound(Figure 1).

In addition,there was a possibility of further inward
displacement of the tracheal end with enlargement of the
peristomal wound. To prevent this displacement, we conducted
an immediate reattachment of the trachea with healthy non-
irradiated tissue. We decided to use modified deltopectoral
flapd in order to attach ite to the trachealusing a single appro-
ace. The appropriateTechnique- andMmeasurements were
were conduct and the standard deltopectoral flap was marked.
The flap was short and no excess sere required. The fasciocuta-
neous flap was raised. After raise of the flad, it was placed on
the defect, and the siteht that corresponded to the stoma was
marked on the flap. A longitudinal incision, approximately twice
as long as the diameter of the tracheostomy stoma was mar-
kee. This converted the tissue on either side of the incision to a
sort of mini-bipedicled flaps that length width ratio range 1.5:1
as it would receive blood supply by crossover from the distal
end (Figure 2).

After raising of the whole flap a full thickness incision
was made on the marked area. The longitudinal incision had
assmsd an oval shape as a result of resting skin tension and
fitted snugly over the stomal site. The edges of the “slit” were
thinned out by excising some of the subcutaneous fat and in-
verted inwards to the stoma. The tracheal ring was attached to
the edges of the opening using 3.0 vicryl sutures. The inter-
vening skin between the base of the flap and the stoma was
incised and the bridge segment of the flap was sutured.,The
patient was dischar ged on the second day after sur gery. After
two weeks,He was receiving oral feedings. The wound healed
well without complications. Stiches were removed on the tenth
day. After twelve month follow-up the patient is doing well and
had gained weight,t The tracheostomy site had healed well.
(Figure 3)
DISCUSSION

The deltopectoral flap has been extensively used for head and neck reconstruction as well as for fashioning a stoma after tracheal resection. The flap has an axial pattern blood supply and can reach up to the acromioclavicular joint. However, for covering the end of tracheostomy a relatively short flap is needed. This is important because it creates a fenestration that requires a broad flap with many axial vessels and a greater number of collaterals. A previous case report conducted a fenestrated ‘flap within a flap’ closure such wounds. However, having a broadly base also brings problems of inserting and requires a second debulking surgery. In addition, to create a flap within a flap is not always safe, and several reports have described necrosis of such flap. This technique of creating a “sili” in the flap is simple, safe and can be done in a single approach. The incision was kept purposely longer than the stomal length to accommodate the entire circumference of the stoma. Because the incision is longitudinal, it assumes an oval shape due to the skin tension, so that fits well over the stomal site.

CONCLUSION

We believe this is a simple, safe and easy technique for reconstruction of tracheostomy stoma after radiotherapy.

REFERENCES


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