

ORIGINAL ARTICLE

Efficacy of the Myofascial Pectoralis Major Flap in the Reduction of Salivary Fistulas After Salvage Total Laryngectomy[☆]



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KEYWORDS

Laryngectomy;
Salvage;
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Abstract

Introduction: Pharyngocutaneous fistula is the most frequent complication after total laryngectomy. Its incidence varies between 9%–25% in post primary total laryngectomy patients, to 14%–57% in salvage laryngectomy post radiotherapy or post chemotherapy+radiotherapy. The pectoralis major myofascial flap (PMMF) is postulated as a useful tool to decrease the incidence of this complication.

Materials and method: Retrospective analysis of a group of patients treated by salvage laryngectomy, associated or not with pharyngeal closure reinforcement with PMMF.

Results: Twenty patients were included, 18 males (90%) and 2 females (10%), in 10 of whom the PMMF was used. The average age was 66.65 years. Seventeen (85%) had a laryngeal tumour and 3 (15%) had a hypopharyngeal tumour. Eight (80%) patients in the non-PMMF group had postoperative fistula, whereas only 2 (20%) patients in the PMMF group had a fistula during the postoperative period ($P=.005$). The mean time for fistula closure was significantly shorter in the cases where PMMF flap was used (16 ± 11 days vs. 76.8 ± 67 days, $P=.001$), as was hospital stay (19.6 ± 18 days vs. 83.9 ± 77 days, $P=.001$).

Conclusion: The use of PMMF in our series is associated with a lower rate of post salvage laryngectomy fistulas in patients treated primarily by organ preservation protocol for laryngeal/hypopharyngeal cancer. In turn, it promotes local healing by decreasing the mean duration of fistula closure and the mean hospital stay.

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PALABRAS CLAVE

Laringectomía;
Rescate;
Colgajo;
Pectoral

Efectividad del colgajo de músculo pectoral mayor miofascial en la reducción de fístulas salivares tras laringectomía total de rescate

Resumen

Introducción: La fístula faringocutánea es la más frecuente de las complicaciones poslaringectomía total. Su incidencia varía entre un 9-25% en pacientes poslaringectomía total primaria, hasta un 14-57% en laringectomía de rescate posradioterapia o posquimioterapia + radioterapia. El colgajo de músculo pectoral mayor miofascial (PMMF) se postula como una herramienta útil para disminuir la incidencia de esta complicación.

Material y método: Análisis retrospectivo de pacientes tratados mediante laringectomía total de rescate, asociada o no a refuerzo de sutura faríngea con colgajo de PMMF.

Resultados: Veinte pacientes fueron incluidos, 18 hombres (90%) y 2 mujeres (10%), en 10 de los cuales se utilizó colgajo de PMMF. La edad promedio fue de 66,65 años. Diecisiete (85%) presentaron un tumor laríngeo y 3 (15%) un tumor de hipofaringe. Ocho (80%) pacientes del grupo sin PMMF presentaron fístula en el postoperatorio, mientras que tan solo 2 (20%) pacientes del grupo de PMMF presentaron fístula durante el postoperatorio ($p=0,005$). El tiempo promedio para el cierre de la fístula fue significativamente menor en los casos en que se empleó el PMMF (16 ± 11 vs $76,8 \pm 67$ días, $p=0,001$), así como la estancia hospitalaria ($19,6 \pm 18$ vs $83,9 \pm 77$ días, $p=0,001$).

Conclusión: El uso del PMMF se asocia a una menor tasa de fístulas poslaringectomía total de rescate en pacientes tratados de forma primaria mediante protocolo de conservación de órgano por cáncer de laringe/hipofaringe, y favorece la cicatrización local disminuyendo el tiempo promedio de cierre de fístulas y la estancia media hospitalaria.

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Introduction

Pharyngocutaneous fistula is the most common complication after total laryngectomy (TL), its postoperative onset is associated with greater morbidity, longer hospital stay, higher healthcare costs and delayed complementary treatment.¹ Its incidence ranges from 9% to 25% in patients post primary TL, to 14% to 57% in salvage laryngectomy post radiotherapy (RT) or post chemotherapy+radiotherapy (CT/RT).²⁻⁷ In turn, the surge in non-surgical organ preservation protocols (RT or CT/RT) for advanced carcinomas of the larynx and hypopharynx is resulting in a real need for salvage TL (S-TL).

In this context, an accepted strategy to reduce the risk of post-S-TL fistulas has been to reinforce pharyngeal suturing with a pectoralis myofascial major flap (PMMF), enabling the inclusion of non-irradiated vascularised tissue in the surgical field.⁸ For this reason, in our department's head and neck surgery unit, since April 2015 we have prophylactically reinforced the pharyngeal closure with PMMF in all patients who undergo S-TL post RT or CT/RT.

Along these lines, the objective of this study was to compare the incidence of pharyngocutaneous fistula in 2 groups of patients treated with S-TL, and to determine the effectiveness of PMMF.

Materials and Methods

This was a retrospective study, approved by our hospital's ethics committee, of patients diagnosed with squamous cell cancer of the larynx and hypopharynx for all stages

according to the criteria of the Union Internationale Contre le Cancer (UICC) and the American Joint Committee on Cancer (AJCC-7th edition), previously treated by RT or CT/RT, who were considered candidates for salvage TL due to tumour recurrence, persistence or due to laryngeal dysfunction after treatment, according to our centre's clinical treatment guidelines. The patients received standard RT as organ preservation treatment at doses of 2 Gy daily, for a total dose of between 64–70 Gy. The patients who required CT were given a regimen of cisplatin (100 mg/m^2) every 3 weeks.

The patients were divided into 2 chronological groups: one between March 2013 and March 2015 who underwent S-TL with primary pharyngeal closure, and the other between April 2015 and April 2017 who underwent S-TL with primary pharyngeal closure reinforcement+PMMF over the pharyngeal suture. The study included a total of 20 patients treated with S-TL, 10 who underwent PMMF to reinforce the pharyngeal suture and 10 who did not. The cases were identified from a review of the department's databases using the International Classification of Diseases (ICD-9).

The surgical technique used was a standard S-TL, with primary pharyngeal closure, as we mentioned earlier, using a Vicryl® 3-0 suture in T or the pattern that offered the best tension, accompanied by the respective neck dissections. We performed prophylactic pharyngeal closure reinforcement with PMMF on the patients who had undergone S-TL in our centre from April 2015, which was cut without a skin paddle respecting the fascia over the muscle. We then created a subfascial tunnel over the pectoral muscle, respecting the fasciocutaneous deltopectoral flap, and we placed the flap with its fascial side over the pharyngeal closure, protecting

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