

PHARYNGOCUTANEOUS FISTULA; ITS CAUSES AND MANAGEMENT

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Objective: To study the various causes and management of Pharyngocutaneous fistula in total laryngectomy .

Material and Methods: 40 patients underwent total laryngectomy in service hospital Lahore From May 2003 to December 2014. The patients were prospectively studied regarding formation of Pharyngocutaneous fistula in the following aspects age, tumor site, stage of disease, primary repair, infection and recurrence of tumor.

Results: Pharyngocutaneous fistula was diagnosed in 9 patients (22%) out of 40. Fistula developed in 2 patients (22%) on 3rd day due to rent in repair. 5 patients (55%) had fistulae due to infection on 8th day and 2 patients (23%) due to presence of residual tumor on 15th day. Pharyngocutaneous fistula is common complication which occurs after total laryngectomy. Three patients previously submitted to tracheostomy had fistula out of 5 patients 60 % (higher incidence) as compared to the 6 patients out of 35 (17%) without tracheostomy. The reported incidence of pharyngocutaneous fistula is extremely variable in literature ranging from 13% to 25% and in our series it is about 22 %.

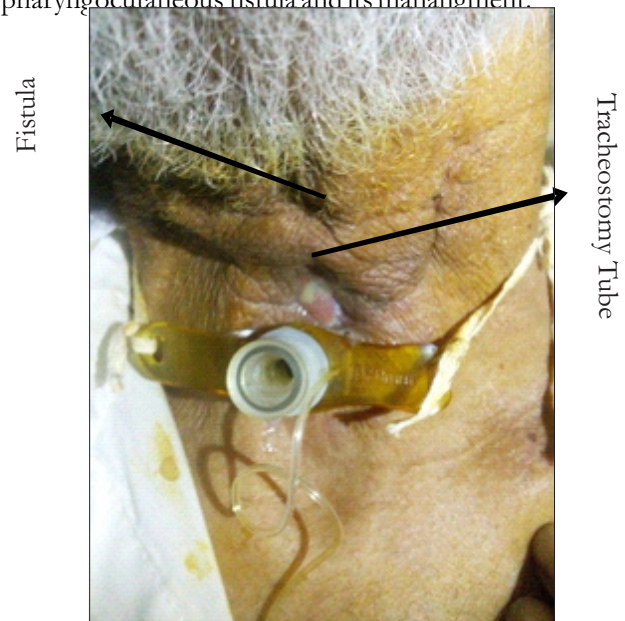
Conclusions: Spontaneous closure is possible with proper wound care, good nutrition and antibiotics. 7 cases out of 9 in our series healed with conservative treatment. Incidence of Pharyngocutaneous fistula formation is more in supraglottic, previously tracheostomised patients and also in advanced stage. In some patients surgical intervention is needed to close the fistula by flap. We used deltopectoral flap in two patients.

Keywords: Pharyngocutaneous fistula, causes, outcome, total laryngectomy

Introduction

Pharyngocutaneous fistula is the most common complication following total laryngectomy and can occur immediate post-operative phase¹. It creates a communication between pharynx and cervical skin around the surgical incision or less frequently the stoma of the tracheostomy. Pharyngocutaneous fistula after laryngectomy occurs when there is a failure in the pharyngeal repair resulting in a salivary leak². Pharyngeal contents usually saliva flow through the fistula emerging from the cutaneous orifice³ (Fig-1). This is the demoralizing complication not only for the surgeon but also for the patient and his family. Its occurrence leads to increased morbidity, delay in adjuvant therapy, prolonged hospitalization and increased treatment cost⁴. The reported incidence of pharyngocutaneous fistula is extremely variable in literature ranging from 13% to 25% and only few reports had a rate of less than 10%⁵. Many factors related to the incidence of Pharyngocutaneous fistula such as age, smoking, liver function, anemia, previous radiotherapy, previous tracheostomy, comorbidities (diabetes, malnutrition, chronic bronchitis) and even post-

operative vomiting have been the topic of controversy. The factors known to be associated with increased incidence are inadequate surgery, hematoma of the surgical wound, infection and recurrence of tumor⁶. The purpose of study is to establish the various causes responsible for pharyngocutaneous fistula and its management.



Material and Methods

From May 2003 to December 2014, 40 patients underwent total laryngectomy in service hospital Lahore. The patients were prospectively studied regarding formation of Pharyngocutaneous fistula. Squamous cell carcinoma was the histopathologic diagnosis in all cases. The following aspects were considered age, tumor site primary stage, primary repair, infection and recurrence of tumor. Post-operatively we used in these patients intravenous ceftriaxone. 1 gram bd and injection augmentin 1.2 gram I/V BD for 10 days immediately after. All pharyngeal closure was primary without flap rotation. In the cases of pharyngocutaneous fistula we took into consideration the post-operative day on which it was diagnosed, its duration, period of hospitalization, therapeutic approach and outcome. All patients received oral intake after 10th postoperative day if the fistula is not formed. After oral intake no patient developed pharyngocutaneous fistula.

Results

All patients were male and age range from 40-70 (mean 55). 35 patients had glottis carcinoma (87.5% percent) and 5 patients had supraglottic carcinoma (12.5% percent). Mainly the patients were in stage-T-3 32 (80% percent) and stage T-4 8 patients (20% percent). Pre-operative tracheostomy was performed in 5 patients (12.5%) due to stridor and respiratory distress. Pharyngocutaneous fistula was diagnosed in 9 patients (22.5%) out of 40. Five patients previously submitted to tracheostomy had fistula in 3 patients 60% (higher incidence) as compared to the 6 patients out of 35 (17%) without tracheostomy (table-2). Fistula developed in 2 patients (22.2%) on 3rd day due to rent in repair. 5 patients (55.6%) had fistulae due to infection on 8th day and 2 patients (23.3%) due to presence of residual tumor on 15th day (fig-2). Patients with supraglottic growth had fistula in 3 patients out of 5 patients as compared to glottic growth 6 patients out of 35 because involvement of pharynx. There was also difference in fistula formation due to stage of disease. Three patients out of 8 patients had fistula formation in stage-4 (37.5%) as compared to 6 patients out of 32 in stage-3 (18.75%). Hospital time varied from 6-8 weeks for closure of fistula. In 5 patients fistula was closed with conservative measure like injectable antibiotic, nutritional support and wound care within 6 weeks. In 2 patients we used the delto-pectoralis

myocutaneous flap to repair the fistula, and in 2 patients fistula was not closed due to residual tumor.

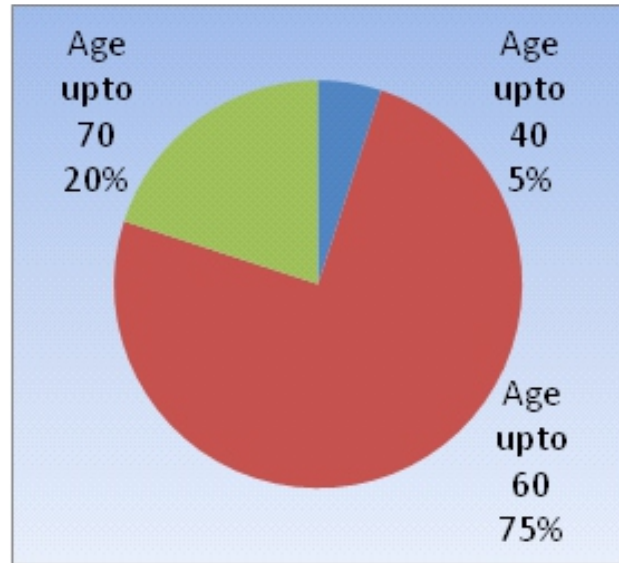


Fig-1: Sex (N 40)

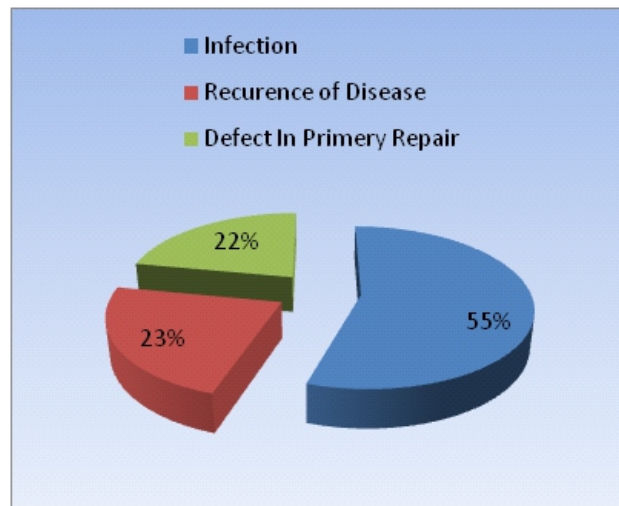


Fig-2: Sex (N 40)

Table-1: Effects of variable.

Tumor Site	Patients	Fistula Formation	%
Glottic growth	32	06	19%
Supra glottic growth	08	03	37%
Tracheostomy			
Tracheostomy	05	03	60%
Without Tracheostomy	35	06	17%
Patient stage			
Stage - T3	32	06	19%
Stage - T4	08	03	37%

Pharyngocutaneous fistula is a complication that usually occurs shortly after total laryngectomy. Inadequate repair, haematoma formation, infection, residual disease, tracheostomized patients and previously irradiated patients are major aetiological factors leading to fistula formation. In our patients pharyngocutaneous fistula had developed from 3-15 days after surgery. Mean length of hospitalization was 4 weeks against 10 days for non pharyngocutaneous fistula. The rate of fistula formation in our study is 22% (9 out of 40). This rate is in agreement with the data presented in international literature over the past decade according to which rate varies from 8.7% to 22%⁷. Primary repair is very important as if the repair is not done properly fistula occurs earlier than infection 3 days Vs 8 days in infectious cases in our study (Fig-20). Supraglottic tumours were at high risk for Pharyngocutaneous fistula because in these cases subject may be submitted to the large resection of pharyngeal mucosa. Patients with supraglottic growth had fistula 3 out of 5 because involvement of pharynx 37% as compared to glottic growth 19%. In another series as supraglottic tumours require resection of large amounts of pharyngeal mucosa leading to closure under tension, were considered as a risk factor for fistula formation⁸. In our series it was also observed that patients having previous tracheostomy had higher incidence 60% 3/5 as compared to the 17% 4/35 without tracheostomy. The possible explanation

for this finding is more advanced disease, fibrosis and local contamination by tracheal secretion. Tracheotomy, as a predisposing factor for fistula is frequently performed for more advanced tumors, sometimes in emergency situations. These reasons may possibly contribute to an increase in the rate of fistula formation⁹. However in an Iranian study by Nader Saki did not show any reason in favour of such postulation¹⁰. Blood transfusion were not considered in the assessment of fistula formation in our study because these patients were rarely offered blood transfusion during surgery. In another study higher incidence rate of Pharyngocutaneous fistula in 28% in patients giving blood products transfusion against 7% for patients not receiving blood transfusion¹¹, other authors failed to find such correlation.¹²

Conclusion

There are multiple causes for Pharyngocutaneous fistula formation like inadequate repair by junior surgeon, infection and residual disease. Most of the fistulae close spontaneously by proper wound care and conservative management. Rarely surgical intervention is needed to close the fistulae. Proper assessment of patients is necessary to prevent the fistula formation.

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