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Case Report

Dysphagia following total laryngectomy: a myth or a reality? How can we help

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ABSTRACT

Total laryngectomy leads to drastic anatomical changes in the swallowing and breathing mechanism. Reduced tongue base retraction, poor pharyngeal clearance, stricture and prominence in the posterior pharyngeal wall have been reported to cause swallowing difficulties in individuals with total laryngectomy. The present case study describes the swallowing characteristics in an individual with total laryngectomy and discusses efficacy of swallowing maneuvers in total laryngectomy. A 55 yr/male, operated case of total laryngectomy using TEP reported with complaint of food getting stuck in the throat and vomiting sensation. He was fed orally and could tolerate only thick liquids. Swallowing assessment was carried out by clinical and instrumental tools (modified barium swallow) which revealed cricopharyngeal prominence, poor pharyngeal clearance and significant post swallow residue. Effortful swallow was attempted to explore the change in swallowing mechanism. Relaxation of pharyngeal wall with better pharyngeal clearance was seen with the maneuver. Clinically, the case reported of ability to swallow semisolids and solids well with the maneuver. At 3 month follow up, the case reported no difficulty in swallowing semisolids and solids orally. The above case study highlights on radiological evidence of swallowing abnormalities following total laryngectomy and further on the efficacy of maneuver on mechanism of swallowing. Hence, it can be noted that swallowing intervention has strong implications in patients with total laryngectomy.

Keywords: Dysphagia, Total laryngectomy, Residue, Effortful swallow

INTRODUCTION

Swallowing is defined as the semiautomatic motor action of the muscles of the respiratory and gastrointestinal tracts that propels food from the oral cavity into the stomach.[1] Some conditions that are known to cause swallowing problems arise due to neurogenic (CVA, degenerative disease) and mechanical (head and neck cancers, corrosive poisoning) basis.

Total laryngectomy is an extensive surgery which leads to drastic anatomical changes in the swallowing and breathing mechanism. Total laryngectomy may be used as the primary treatment in cases of advanced laryngeal carcinoma. Dysphagia following total laryngectomy could be caused due to various physiological changes. Reduced tongue base retraction, poor pharyngeal clearance, stricture and prominence in the posterior pharyngeal wall have been reported to cause swallowing difficulties in individuals with total laryngectomy.[2] In the past, patients with total laryngectomy were not thought to have dysphagia owing to permanent division of the oesophagus from the trachea. However, review of literature clearly reports dysphagia following total laryngectomy.

Generally, aspiration is not a risk for those who have received a total laryngectomy unless there is leakage

around or though a tracheoesophageal fistula, either created for voice restoration or resulting from healing complications. Total laryngectomy patient may not be able to advance their diet beyond pureed consistencies if they are unable to produce sufficient bolus driving pressure. Patients who have received radiation to the head and neck often experience reduced tongue base retraction.

Effortful swallow technique was attributed by Logemann.[3] The effortful swallow is designed to increase tongue base retraction and pharyngeal pressure during the swallow in order to improve bolus during force clearance. The effortful swallow is believed to increase pharyngeal pressures, thus pushing the bolus through the pharynx and cricopharyngeous, leaving less residue in the pharynx after the swallow.[4]

The current case study describes swallowing skills and discusses management of dysphagia in a case with total laryngectomy.

CASE REPORT

Complaint and medical history

A 55 year old man reported to the department with complaint of difficulty in swallowing solids and semisolids. He complaint of food getting stuck after repeated swallow and vomiting sensation due to inability to swallow. Medical reports revealed squamous cell carcinoma of glottis. Case had undergone total laryngectomy and primary surgery for tracheoesophageal puncture with cricopharyngeal myotomy. He had undergone 33 cycles of radiation therapy following the surgery. Case is using provox tracheoesophageal prosthesis for communication. Case was on oral feed.

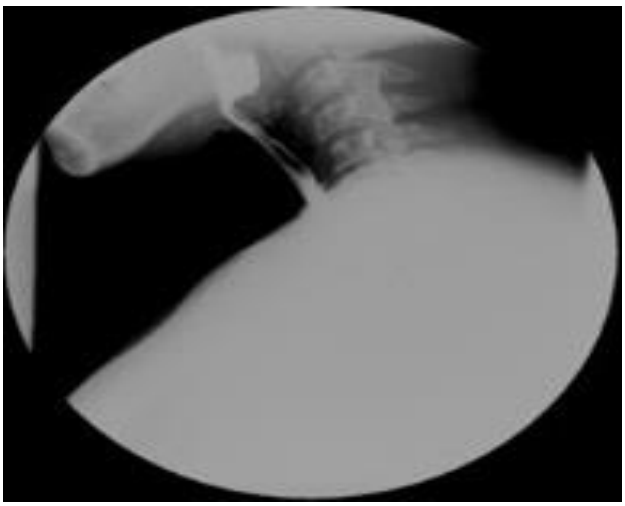

Figure 1: Post swallow residue without manoeuvre.

Swallowing assessment

Detailed swallowing assessment was done through clinical assessment and instrumental procedure (videofluoroscopy swallow study) which is described below.

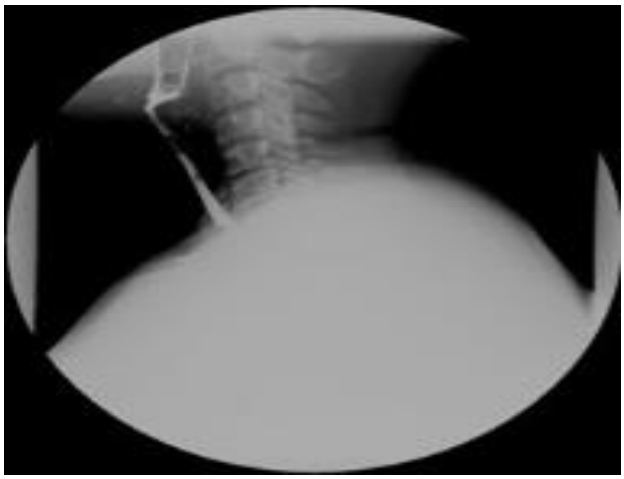

Figure 2: Post swallow residue with manoeuvre.

Clinical assessment

Clinical swallow evaluation was done using Dysphagia Screening checklist. The checklist was prepared based on the features described by.[3] The checklist is attached as Appendix A. Also assessment was done using four consistencies: water (thin liquid), soup (thick liquid), yogurt (semisolid) and chapati (solid). Clinical assessment of swallow revealed no difficulty in swallowing liquids. No leak for liquids was seen through the TEP. Case showed difficulty while swallowing semisolids and solids. He had to vomit out the chapati due to inability to swallow.

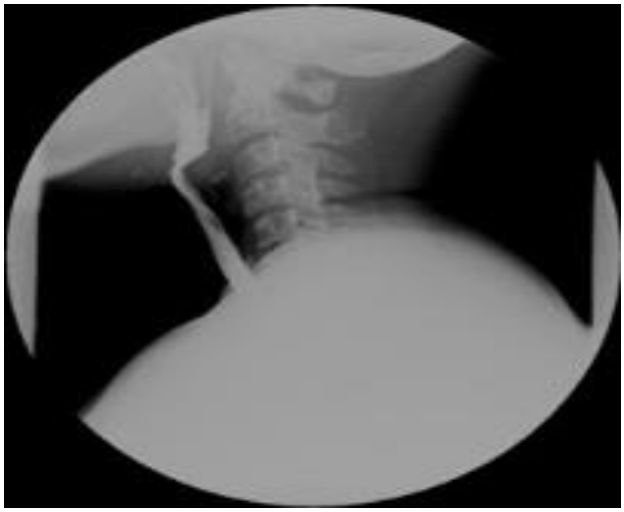

Figure 3: Prominence of cricopharyngeal muscle without manoeuvre.

Instrumental assessment

VFSS was came out with 20 traces per second with radiologist using thin barium, thick barium and cracker

coated barium. Study revealed prominence at the posterior pharyngeal wall (cricopharyngeal prominence and spasm). Poor pharyngeal clearance for thick and cracker consistency was observed. Case required multiple swallows to clear a single bolus.

Figure 4: Relaxation of cricopharyngeal muscle with manoeuvre.

Swallowing therapy

Effortful swallow technique was introduced to improve tongue base retraction to the posterior pharyngeal wall during swallow. Case was instructed to put effort while swallowing. First the technique was attempted on dry swallow followed by semi solid and solid. Relaxation of pharyngeal wall with better pharyngeal clearance was seen while using the manoeuvre on videofluoroscopy. Case symptomatically reported of ability to swallow semisolids and solids well with the manoeuvre. Case reported of no difficulty in swallowing semisolids and solids food orally at one month and 3 month follow up and reported to be benefitted while using effortful swallow during mealtimes.

Review of an ENT for medical management

Case preferred to use therapeutic management rather than surgical or medical management and he has already undergone a cricopharyngeal myotomy. Opinion from an ENT surgeon was taken regarding medical management of the cricopharyngeal prominence. However, as per the opinion given, the case had good PE segment vibration during speech, which would be altered with medical management making the PE segment very lax. Hence, he was asked to continue the swallowing manoeuvre in view of improved swallowing function with effortful swallow.

Table 1: Summary of clinical and imaging findings of the case with and without maneuvre.

Without manoeuvre	With manoeuvre
Vomiting sensation was observed due to inability to swallow	Normal swallow obtained after using the technique
Difficulty while swallowing semi-solids and solids	After using effortful swallow technique no difficulty was observed with both consistencies

DISCUSSION

Very few studies have reported dysphagia following total laryngectomy. Current case revealed cricopharyngeal prominence and spasm, poor pharyngeal clearance especially with semisolids and solids. Similar findings were reported [5]. Also, effortful swallow was seen to be effective in the present case. Better cricopharyngeal relaxation and better pharyngeal clearance was seen through videofluoroscopy. Use of effortful swallow in treated cases of head and neck cancers who presented with poor pharyngeal clearance and poor cricopharyngeal motility has been discussed in literature.[4] This case report highlights on the need for detailed swallowing assessment and intervention to achieve holistic management without compromising on the only available speech option following total laryngectomy.

CONCLUSION

Dysphagia following total laryngectomy does not typically lead to aspiration but causes discomfort in individuals owing to poor pharyngeal peristalsis. Radiological assessments play a vital role not only in understanding the mechanism of swallowing, but also in estimating efficacy of swallowing manoeuvres. Effortful swallow can help improve pharyngeal peristalsis and bolus clearance in cases with total laryngectomy, especially for highly viscous consistencies like semisolids and solids. This may also be a mode of intervention where medical and surgical management is contraindicated.

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REFERENCES

1. Miller AJ. Dysphagia. Neurological basis of swallowing. 1986;1:91-100.
2. Samlan RA, Webster KT. Swallowing and speech therapy after definitive treatment for laryngeal cancer. Otolaryngologic Clin North Am. 2002;35:1115–33.
3. Logemann J. Evaluation and Treatment of Swallowing Disorders. 2nd ed; 1989: 214-223.
4. Pauloski B. Rehabilitation of dysphagia following head and neck cancer. Physical Medicine and Rehabilitation Clin North Am. 2008;19(4):889-928.
5. Landera MA, Lundy D, Sullivan PA. Dysphagia following total laryngectomy. Perspectives in swallowing and swallowing disorders. Perspective in swallowing and swallowing disorders. 2010;19(2):39-44.

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