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QUALITY OF LIFE INDEX IN PATIENTS AFTER FEEDING JEJUNOSTOMY IN INOPERABLE ESOPHAGEAL CANCER: A PROSPECTIVE ANALYSIS

General Surgery

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ABSTRACT

Introduction: Esophageal cancer is a disease that continues to have poor prognosis despite advances in multimodality therapy. Most patients present late with advanced disease and therefore have a poor prognosis. Quality of life measurement tools can be helpful to make decision regarding management of patients with carcinoma esophagus.

Methods: Data of the cases were recorded in a prescribed proforma designed for the study purpose. Quality of life index was evaluated on the basis of the EORTC QLQ-C30 core questionnaire which incorporates five functional scales, a Global Health scale and three symptom scales, each containing between two and five items. A high score in functional, emotional and financial score is equivalent to poor outcome, where as in global health group a high score is equivalent to better global health status.

Results: In this study over the period of Jan 2018– Sep 2019, we included total 61 patients out which 5 (8.2%) patients were expired during study period, so we did not include these patients. We followed 56 patients who underwent feeding jejunostomy due to in-operable esophageal cancer with dysphagia. Out of 56 patients, 33.9% were female and 66.1% were male. Most common age group found to be involved was 51 to 60 years old which was 35.7 % of total patient and next age group was 61 to 70 which was 23.2%.

Conclusion: Purpose of this study was to found a better outcome in quality of life after palliative measure in in-operable esophageal cancer and improve nutritional support to improve the quality of life. As nutrition support remains a principal management in esophageal cancer patients.

KEYWORDS

Esophageal carcinoma, Feeding Jejunostomy, EORTC, Questionnaire, Palliation

INTRODUCTION

Esophageal cancer is a disease that continues to have poor prognosis despite advances in multimodality therapy [1]. It is the 8th most common malignancy worldwide and the sixth most common cause of cancer-related deaths.[2] Incidence of esophageal cancer is still increasing all over the world in spite of the treatment modalities currently available for the management of this disease. The incidence of esophageal cancer represents one of the widest variations between high and low-incidence regions.[3] Generally, esophageal cancer patients present late with advanced disease and therefore have a poor prognosis.[4]

Quality of life measurement tools can be helpful to make decision regarding management of patients with carcinoma esophagus. European Organization for Research and Treatment of Cancer (EORTC), developed quality of life (QOL) questionnaire, the QLQ-C30, to know the patient's overall status using questionnaire. EORTC has developed separate questionnaire for different cancers. Many studies conducted using these questionnaire shows the results in two clinically distinct groups of patients with esophageal cancer and also investigated the correlation between dysphagia grade and various scales of QOL.

They compared various domain of QOL like physical, emotional, cognitive, and global health scores in their study and concluded that patients who received palliative treatment had significantly appetite loss, fatigue, worse pain, constipation, and dysphagia. The relations between dysphagia grade and each of the QOL scales and items in both groups of patients were poor. This questionnaire differentiates clearly between the two clinically distinct groups of patients, but to be an entirely appropriate indicator of QOL in patients with esophageal cancer, an additional specific esophageal module including a dysphagia scale is required.[5]

MATERIAL & METHODS

Source Of Data:

Cases admitted and operated in surgery department at Dr. Sushila Tiwari Government Hospital, Haldwani with symptoms of dysphagia and where cases of histopathological examination proven carcinoma oesophagus were clinically evaluated.

Method Of Collection Of Data:

Data was collected from patient admitted between January 2018 to September 2019. Patients were considered from any socio-economic status, both male and females included and from any religion.

Inclusion Criteria:

All consent signed cases of esophageal cancer which were inoperable

Exclusion Criteria:

1. Patients who underwent esophagectomy.
2. Patients who were not willing to participate in the study.

Method Of Study:

- Informed and written consent was taken from all the patients.
- All patients had in-operable esophageal cancer disease and they underwent "Witzel feeding jejunostomy" as a palliative measure using 18Fr Ryle's tube.
- Complications were divided into major and minor complications. Major complications included leak into peritoneal cavity, tube dislodgement, jejunal perforation, entero-cutaneous fistula, abscess (intra-abdominal or abdominal wall) and small bowel gangrene. Minor complications included tube block, tube detachment, peritubal leak and diarrhoea.
- Data of the cases were recorded in a prescribed proforma designed for the study purpose.
- Quality of life index was evaluated on the basis of the EORTC QLQ-C30 core questionnaire which incorporates five functional scales, a Global Health scale and three symptom scales, each containing between two and five items. A high score in functional, emotional and financial score is equivalent to poor outcome, whereas in global health group a high score is equivalent to better global health status.

OBSERVATIONS AND RESULTS

Table 1: Age Group Distribution

Age Groups	Frequency	%
40 - 50 years	13	23.2%
51 - 60 years	20	35.7%
61 - 70 years	17	30.4%
>70 years	6	10.7%

Total	56	100%
Mean ± SD	58.77 ± 9.84	
Median	59	
Min – Max	40 – 81	

Table 2: Sex Distribution

Sex	Frequency	%
F	19	33.9%
M	37	66.1%
Total	56	100%

Table 3: Grading Of Dysphagia

Dysphagia grade	Frequency	%
2	5	8.9%
3	24	42.9%
4	27	48.2%
Total	56	100%

Table 4: Showing The Total Protein Level In The Respondent And The Mean Value Of The Total Protein In All These Patients.

Total Protein at the time of FJ (g/dL)	N	Mean ± SD	p value
At the time of FJ (g/dL)	56	5.30 ± 0.97	0.004
After 6 months	56	5.45 ± 0.88	
After 12 months	56	5.50 ± 0.87	
End of follow up	56	5.55 ± 0.86	

Table 5: Physical Functioning

Physical functioning (5-20)	At the time of FJ		At the end of follow up		p value
	Frequency	%	Frequency	%	
8	4	7.1%	4	7.1%	1.000
9	5	8.9%	5	8.9%	1.000
10	10	17.9%	11	19.6%	0.809
11	9	16.1%	10	17.9%	0.801
12	6	10.7%	7	12.5%	0.768
13	4	7.1%	6	10.7%	0.742
14	2	3.6%	2	3.6%	1.000
15	2	3.6%	2	3.6%	1.000
16	3	5.4%	3	5.4%	1.000
17	3	5.4%	3	5.4%	1.000
18	5	8.9%	2	3.6%	0.266
19	3	5.4%	1	1.8%	0.618
Total	56	100%	56	100%	

Table 6: Emotional Functioning

Emotional functioning (4-16)	At the time of FJ		At the end of follow up		p value
	Frequency	%	Frequency	%	
6	6	10.7%	4	7.1%	0.742
7	2	3.6%	2	3.6%	1.000
8	14	25.0%	10	17.9%	0.357
9	1	1.8%	2	3.6%	1.000
10	9	16.1%	12	21.4%	0.468
11	1	1.8%	3	5.4%	0.618
12	10	17.9%	10	17.9%	1.000
13	2	3.6%	2	3.6%	1.000
14	8	14.3%	8	14.3%	1.000
15	1	1.8%	1	1.8%	1.000
16	2	3.6%	2	3.6%	1.000
Total	56	100%	56	100%	

Table 7: Global Health Status

Global Health Status (2-14)	At the time of FJ		At the end of follow up		p value
	Frequency	%	Frequency	%	
3	2	3.6%	2	3.6%	1.000
4	5	8.9%	5	8.9%	1.000
5	1	1.8%	3	5.4%	0.618
6	17	30.4%	17	30.4%	1.000
7	11	19.6%	13	23.2%	0.645
8	14	25.0%	10	17.9%	0.357
9	2	3.6%	2	3.6%	1.000
10	4	7.1%	4	7.1%	1.000
Total	56	100%	56	100%	

Table 8: Financial Difficulties

Financial difficulties (1-4)	At the time of FJ		At the end of follow up		p value
	Frequency	%	Frequency	%	
3	36	64.3%	30	53.6%	0.337
4	20	35.7%	26	46.4%	
Total	56	100%	56	100%	

DISCUSSION

In this study over the period of Jan 2018– Sep 2019, we included total 61 patients out which 5 (8.2%) patients were expired during study period, so we did not include these patients. We followed 56 patients who underwent feeding jejunostomy due to in-operable esophageal cancer with dysphagia. Out of 56 patients, 33.9% were female and 66.1% were male. Most common age group found to be involved was 51 to 60 years old which was 35.7 % of total patient and next age group was 61 to 70 which was 23.2%.

All the operations were performed at Dr. Susheela Tiwari Government Hospital, Haldwani. The operation performed was Witzel feeding jejunostomy. The mean age of our patients was **58.77 9.84 years (ranging from 40-80years)**. The duration of follow up was up till the end of study period and no feeding jejunostomy related complications were noted. One patient remained hemodynamically unstable, and ended up with leak from jejunostomy site therefore the feeding was not initiated. The enteral feeding was started on postoperative days 2 in all cases except in 2 patients in whom there was a slight abdominal distension and no bowel sounds, therefore in these patients enteral feeding was initiated from postoperative day three. We started feeding with intrajejunal 5% glucose solution. The infusion was started at a flow rate of 15-30 ml/h. If the infusion was well tolerated, we administered the enteral feed at 500 ml of half strength feeds on day one and increased every day until the calculated target volume was reached (35 ml/kg body weight/day). Intravenous fluids were reduced proportionally as the enteral feeding was increased and discontinued once the target rate of enteral feeding was achieved. The further increase in flow rate depended on the patient's needs.

Most of the patients that presented to us with dysphagia were of grade 4 (n= 27; 48.2%) followed by grade 3 (n=24; 42.9%). Most of the patients presented to us were malnourished, emaciated and cachectic. We followed all the patients during study period mostly patients presented at the time of feeding jejunostomy with mean weight was 43.796.10 kg and at the end of follow up, we observed significant weight gain that was mean weight 44.59 7.09kg and p value was 0.023 which is significant. Therefore, it shows that after feeding jejunostomy weight of patients were improved. Total protein level was also observed on six monthly bases during follow up. We observed total protein level at the time of feeding jejunostomy, six-month, one year and at the end of follow up after feeding jejunostomy. Mean total protein level at the time of feeding jejunostomy was 5.3gm/dl and SD was +/-0.97, and during follow up, mean value of total protein level was 5.45gm/dl & SD was +/- 0.88, 5.50gm/dl & SD was +/- 0.87 and 5.55gm/dl & SD was +/- 0.86, after first six month, after one year and at the end of follow up respectively. And p value was 0.004 which shows significant improvement in total protein level after feeding jejunostomy.

During the whole study, we encountered few complications (n=21; 37.5%) associated with the feeding jejunostomy. One patient (1.8%) developed leakage of feeding jejunostomy for which we re-operated the patient and re-creation of the feeding jejunostomy done. In 10(17.9%) patients, we faced the issued where the feeding jejunostomy was blocked for which we flushed the FJ tube with normal saline. In 8(14.3%) patients the FJ tube was detached, for which we re-sutured and fixed the FJ to the skin. In 2(3.6%) patients, the FJ was dislodged.

All the 56 patients enrolled in the study were followed up according to EORTC QLQ C30 questionnaires. The preoperative and post feeding jejunostomy score of five functional scales, a Global Health scale, emotional functioning and financial difficulties score compared. Five functional scales minimum given score was 5 and maximum given score was 20, at the time of FJ mean score was 12.57 ± 3.36. Emotional functioning, minimum score given was 4 and maximum score was16 at the time of FJ mean emotional score was 10.30 ± 2.86.Financial difficulties scale minimum score was 1 and maximum score was 4, mean score at the time of feeding jejunostomy was3.36 ± 0.48, and a

Global Health scale minimum given score was 2 and maximum given score was 14, at the time of FJ mean score observed was 6.79± 1.67.A high score in functional, emotional and financial score is equivalent to poor outcome, where as in global health group a high score is equivalent to better global health status. At the end of follow up score of five functional scales was11.98±2.285. Score of emotional function was 10.61±2.661 and score of financial difficulties was 3.46± 0.503 and a Global Health scale score was6.64 ± 1.667.There is no statically significant improvement observed in any of the domain of QOL, but some improvement observed in five functional score (physical functioning) where some high score patients showed some improvement in their score and all other domains like emotional functioning, financial difficulties and a global health score there was no improvement were observed, and financial burden found to be increased.

CONCLUSION

Purpose of this study was to found a better outcome in quality of life after palliative measure in in-operable esophageal cancer and improve nutritional support to improve the quality of life. As nutrition support remains a principal management in esophageal cancer patients.

We found that feeding jejunostomy is safe and cost-effective modality that improves patient's physical health and increases total protein level and weight gain. Therefore, feeding jejunostomy is a good modality for palliative management of inoperable esophageal cancer.

We also concluded that QOL assessment tools have many advantages and are good for carcinoma esophagus patients. Quality of life has become an important factor to be consider in patients with limited life expectancy or cancer patients, and by providing better understanding about QOL questionnaires, a treating doctor can make better treatment decisions. Technologies can provide a highly efficient and accurate means of implementing QOL assessments so that they can help a wider range of in-operable esophageal cancer patients.

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