



Long-term survival of an unresectable upper thoracic esophageal squamous cell carcinoma with severe dysphagia following nasogastric tube feeding and camrelizumab-containing therapy: a case report

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Abstract: For upper thoracic esophageal cancer, surgery is difficult, and the clinical effects of chemoradiotherapy, radiotherapy, and chemotherapy are limited. Camrelizumab is a PD-1 (programmed cell death-1) antibody developed by China. There are few studies on camrelizumab in esophageal cancer. Here, a 66-year-old man was admitted to the hospital with severe dysphagia. He was diagnosed as upper thoracic esophageal squamous cell carcinoma (ESCC). The patient received nasogastric tube placement, chemotherapy with docetaxel and nedaplatin, monotherapy with camrelizumab, combination therapy with camrelizumab and docetaxel, maintenance therapy with docetaxel, successively. One year later, complete response was observed and the nasogastric tube was removed. The progression-free survival (PFS) exceeded 28 months. The patient is still being followed up. In this paper, temporary nasogastric tube feeding not only provided nutrients safely, but also won the time for immunotherapy to work. Camrelizumab-containing therapy achieved complete response with long-term survival in unresectable upper thoracic ESCC patients. Comprehensive therapy regimens involved with nasogastric tube feeding and camrelizumab-containing therapy are effective and safe in unresectable upper thoracic ESCC patients with severe dysphagia.

Keywords: Camrelizumab; enteral nutrition; esophageal squamous cell carcinoma (ESCC); case report

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Introduction

The incidence of esophageal cancer ranks seventh in the world (1). Esophageal squamous cell carcinoma is the predominant subtype in China (2). For upper thoracic ESCC, surgery is difficult and risky. Therefore, chemoradiotherapy, radiotherapy, and chemotherapy have been frequently performed in upper thoracic ESCC. However, the overall prognosis is poor (3,4). Therefore, exploring other effective and safe treatment is of great importance. Currently, the efficacy and safety of camrelizumab combined with chemotherapy or monotherapy with camrelizumab in ESCC are under

investigation. In this case, comprehensive therapy regimens involved with nasogastric tube feeding and camrelizumab-containing therapy are first reported in ESCC with dysphagia, and clinical effect is remarkable. We present the following case in accordance with the CARE Guideline.

Case presentation

In May 2017, a 66-year-old man was admitted to a local hospital with severe dysphagia. The patient had no family history of genetic disease and was not treated at other hospital. Physical examination showed the patient's

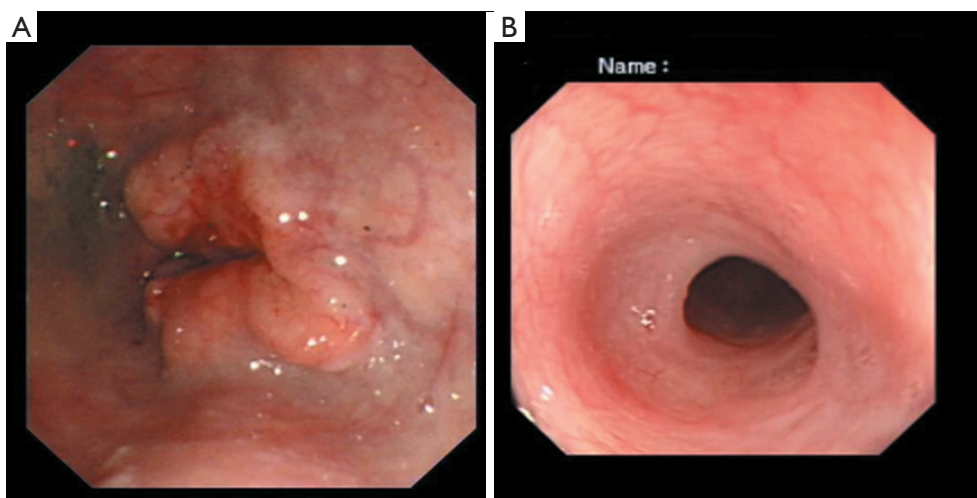


Figure 1 Gastroscopy examination. An irregular bulge lesion in the upper thoracic esophagus on June 21, 2017 (A). Smooth mucosa of the upper thoracic esophagus on November 14, 2019 (B).

Eastern Cooperative Oncology Group score was one. The dysphagia score was four. The gastroscopy examination revealed an irregular bulge lesion 22 cm away from the incisor (*Figure 1*). Biopsy showed esophageal squamous cell carcinoma. No metastases were found on the chest and abdomen computed tomography (CT). He was diagnosed as upper thoracic ESCC.

Considering the high risk of surgery, the patient received nasogastric tube placement and chemotherapy involving the administration of docetaxel (120 mg, day 1), nedaplatin (60 mg, days 2–3). After 3 cycles of chemotherapy, the lesion did not shrink obviously on chest enhanced CT (*Figure 2A*). In view of the good objective response rate (ORR) of camrelizumab in the phase 1 trial, the patient agreed to receive immunotherapy with camrelizumab. After 1 cycle of monotherapy with camrelizumab, the lesion shrank slightly based on chest CT (*Figure 2B*). Therefore, another 2 cycles of monotherapy with camrelizumab were administered. To further improve the efficacy, the patient received 8 cycles of combination therapy with camrelizumab (200 mg day 1) and docetaxel (120 mg day 2) from November 2017. In January 2018, the nasogastric tube was removed. The patient can take some semi-liquid food. Then, 6 cycles of monotherapy with docetaxel as maintenance therapy were administered. On August 17, 2018, there was no abnormal lesion found in the esophagus according to chest CT (*Figure 2C*). Dysphagia score improved to 1 score. On April 22, 2019, complete response was still observed on chest CT (*Figure 2D*). On November 14, 2019, the gastroscopy

examination indicated smooth mucosa of the esophagus (*Figure 1B*). Temporary grade II adverse event of reactive capillary hemangioma was observed during the treatment. By November 14, 2019, the PFS exceeded 28 months, and the patient is still being followed up. The treatment processes of the patient were shown in *Figure 3*.

Discussion

Camrelizumab is a PD-1 antibody developed by Jiangsu Hengrui Medicine Co. Ltd. It is approved in China for the treatment of recurrent or refractory classical Hodgkin's lymphoma. However, the anticancer activity of camrelizumab in esophageal cancer is under investigation. In the phase 1 clinical trial, 30 patients of advanced ESCC received monotherapy with camrelizumab. The ORR was 33.3%, and the median PFS was 3.6 months (5). In this case, camrelizumab-containing therapy achieved long-term PFS.

The incidence of reactive capillary hemangioma induced by camrelizumab is high. In the trials of ESCC and nasopharyngeal carcinoma, the incidence of reactive capillary hemangioma was 76.7% and 88%, respectively (5,6). However, the mechanism of this phenomenon is not clear. Some researchers found camrelizumab promotes hemangioma by activating vascular endothelial growth 2 (7). Based on the above research, camrelizumab combined with vascular endothelial growth 2 inhibitor may improve the phenomenon.

Dysphagia is the common symptom of advanced esophageal cancer and can result in malnutrition. Traditionally, the main

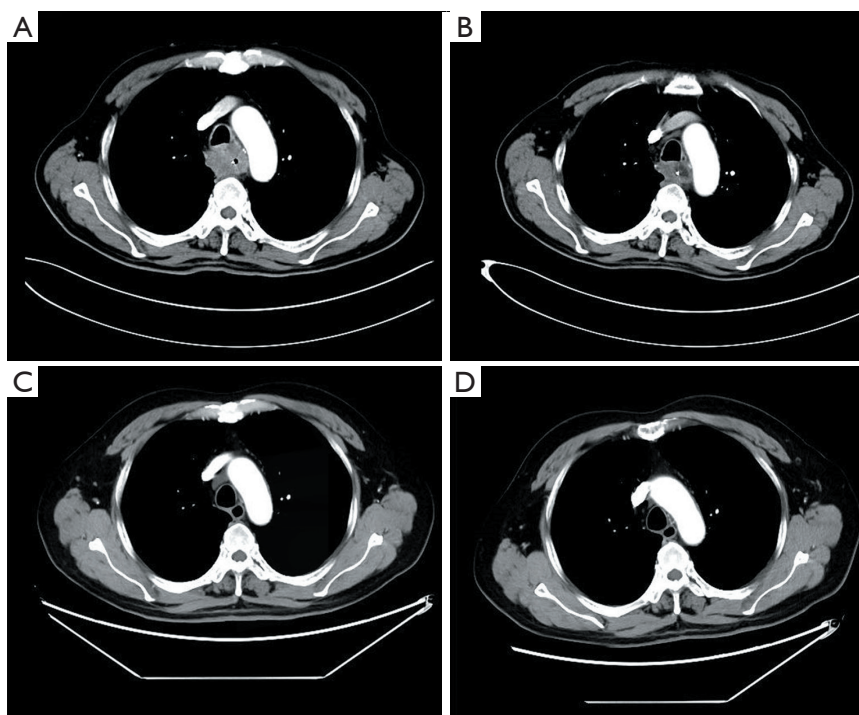


Figure 2 Chest computed tomography scan. The lesion in the upper esophagus on August 8, 2017 (A). The lesion shrank slightly on October 7, 2017 (B). There was no abnormal lesion on August 17, 2018 (C). complete response was still observed on April 22, 2019 (D).

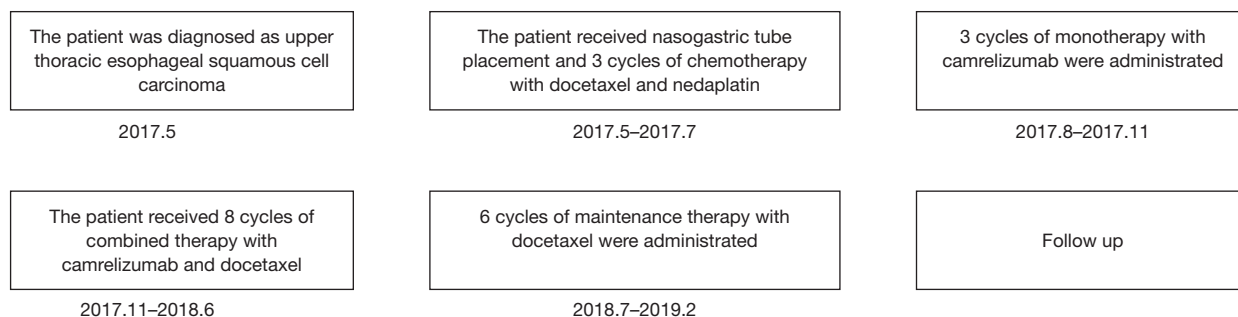


Figure 3 The treatment processes of the patient.

methods to treat dysphagia caused by esophageal cancer include stent placement, dilation, and gastrostomy. Stent placement can immediately relieve the symptom, but stent-related complications also affect the quality of life, including chest pain, migration, recurrent dysphagia, hemorrhage, perforation, pneumonia (8). Esophageal dilation can also alleviate dysphagia, but perforation caused by dilation is life-threatening (9). Percutaneous endoscopic gastrostomy is a choice to fulfill nutritional requirements in patients with esophageal cancer. However, gastrostomy has risks of site infection, tumor seeding, anastomotic stricture,

and anastomotic leak (10). Nasogastric tube feeding can also provide patient for essential nutrients. Importantly, nasogastric tube placement had fewer risks compared with stent placement, dilation, and gastrostomy.

In this paper, temporary nasogastric tube feeding provided the patient for essential nutrients and won the time for immunotherapy to work. Camrelizumab-containing therapy achieved complete response with long-term survival in upper thoracic ESCC patients. However, there are some limitations of this case. Firstly, the patient did not detect the expression of programmed cell death-ligand 1, which

is considered as potential predictors of immunotherapy. Secondly, the patient received monotherapy with camrelizumab and combination therapy with camrelizumab and docetaxel, successively. So it is difficult to compare the efficacy between monotherapy with combination therapy. We expect more clinical trials to explore the efficacy of camrelizumab in upper thoracic ESCC patients in the future.

Conclusion

Comprehensive therapy regimens involved with nasogastric tube feeding and camrelizumab-containing therapy are effective and safe in upper thoracic ESCC patients with severe dysphagia.

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Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/tcr.2020.03.13>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written informed consent was obtained from the patients for publication of this manuscript and any accompanying images.

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