Introduction

Esophageal cancer is one of the most common malignant tumors in the world. China's esophageal cancer patients account for about 60% of the world's total, and most of them are in the advanced stage when diagnosed [1]. They lost their chance of surgery and could only be treated by non-operative treatment. Determining methods to evaluate the efficacy of non-operative treatment for patients with advanced esophageal cancer is particularly important. Although the guidelines of NCCN (National Comprehensive Cancer Network) were proposed in 2017, preoperative clinical (c) stages have been proposed in addition to pathological (p) stages to evaluate the prognosis of non-operative esophageal cancer patients [2]. However, preoperative clinical (c) stages and postoperative pathological (p) staging results are often fail to show consistency [3]. Therefore, the clinical prediction of the prognosis of non-operative esophageal cancer patients using the cTNM staging methods in the NCCN guidelines does not meet the clinical need. The development of a new assessment method to make up for the current deficiencies is particularly important. In this case, clinicians used the dynamic CTCs tests (the separation and enrichment process of CTCs is based on the immunomagnetic bead method combined with density gradient centrifugation on the CellRich™ CTCs detection platform of Ningbo M&J Medical Technologies Co, Ltd.) to evaluate the prognosis of patients with non-operative advanced esophageal cancer patients, showing good clinical results.

Case Presentation

An elderly Chinese male was referred to hospital with the chief complaint of right neck mass was found for 3 days on 2016.4.26. Cervical CT on 2016.4.29 shows: Space occupying appears in the right rear of the trachea (Figure 2a). Liver B-enhanced: 38 mm × 35 mm × 26 mm boundary clearance hypoechoic mass on the right anterior lobe of the liver, metastatic cancer. Systemic B-ultrasound detection suggests multiple metastatic lymph nodes on the left clavicle, the neck and the retroperitoneal. B-ultrasound positioning needle biopsy at the right neck lesions on 2016.5.31: poorly differentiated squamous cell carcinoma (Figure 1a,1b). Gastroscope on 2016.5.9 shows: esophageal cancer, pathological examination reports poorly differentiated squamous cell carcinoma (Figure 1c,1d). The first time cTNM evaluation is cT4N2M1.

Treatment: The patient was advanced in clinical stage, there was no indication for surgery; clinician gave palliative chemotherapy 2 course: TP regimen (Paclitaxel+Cisplatin). Cervical CT review after chemotherapy on 2016.6.20: Space occupying appears in the right rear of the trachea (Figure 2b). The first time CTC detection on 2016.8.30: 4 CTCs were detected. Liver B-enhanced: 38 mm × 35 mm × 26 mm boundary clearance hypoechoic mass is on the right anterior lobe of the liver. Systemic B-ultrasound review: multiple metastatic...
lymph nodes on the left clavicle, the neck and the retroperitoneal. The second time cTNM evaluation is cT 4N2M1. Treatment: In order to treat hepatic metastases, clinician did liver radiofrequency ablation treatment for the patient. The second time CTC detection on 2016.12.30: 2 CTCs was detected. Liver B-enhanced: 36 mm × 31 mm × 20 mm boundary clearance hypoechoic mass on the right anterior lobe of the liver. Systemic B-ultrasound review: multiple metastatic lymph nodes on the left clavicle, the neck and the retroperitoneal. The third time cTNM evaluation is cT4N2M1. Treatment: The patient refused any of anti-tumor therapy. The third time CTC detection on 2017.10.10: 0 CTCs was detected. Liver B-enhanced: 32 mm × 27 mm × 19 mm boundary clearance hypoechoic mass on the right anterior lobe of the liver. Systemic B-ultrasound review: multiple metastatic lymph nodes on the left clavicle, the neck and the retroperitoneal. The fourth time cTNM evaluation still is cT4N2M1. Treatment: The patient refused any of anti-tumor therapy. Finally, according to the follow-up results, the patient survived for 2 years 3 months.

Discussion

CTCs are tumor cells that enter the blood circulation from the primary tumor or metastases of the tumor. Nowadays, studies have shown that it has very important value in the diagnosis, treatment, and prognosis evaluation of malignant tumors [4]. There are many reports suggesting that CTCs are correlated with prognosis of patients with esophageal cancer, which seems to have been validated in this study [5,6]. However, whether the number of CTCs is related to the TNM staging of esophageal cancer is still debatable [7,8]. In this case, the CTCs count of patients under dynamic monitoring showed a significant downward trend during non-operative treatment, but the corresponding clinical stage (cTNM) showed no downward trend at all (Figure 3). It was demonstrated by follow-up that this patient’s overall survival is 2 years 3 months, significantly longer than expected. In this case, CTCs count dynamic testing appears to show better prognostic value than cTNM staging. The reason may be that CTCs reflect the patient’s therapeutic efficacy sooner than imaging [9]. Therefore, the number of CTCs may change before the patient’s imaging-based cTNM changes. Moreover, the prognosis of cancer patients is closely related to tumor burden, and the tumor burden includes many factors such as tumor volume and tumor cell activity. Therefore, the evaluation of the therapeutic effect by cTNM may not fully reflect the change of tumor burden. CTCs have been reported to be closely related to tumor burden, which may better suggest the prognosis of patients with malignant tumors [10].

Conclusion

Nowadays, we need more accurate means to evaluate the prognosis of cancer patients for precision medicine. Especially in the case of non-operative cancer patients, the evaluation effect of cTNM staging is not ideal. Therefore, using CTCs count tests to evaluate the prognosis of non-operative cancer patients may have significant value.

References


