Case Report

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Transradial Artery Approach for Esophageal Artery Chemoembolization in Esophageal Cancer: A Case Report

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ABSTRACT

Objective: To explore the clinical feasibility, safety and short-term efficacy of esophageal artery chemoembolization via transradial artery approach for esophageal cancer.

Methods: The clinical data of one patient with recurrent advanced upper esophageal squamous cell carcinoma were retrospectively analyzed. The patient had a history of radiotherapy and chemotherapy for 2 years, with progressive aggravation of dysphagia and no indication for surgical resection. With the guidance of digital subtraction angiography (DSA), esophageal artery chemoembolization was performed via the right transradial artery approach. The surgical procedure, perioperative complications and postoperative symptomatic improvement were observed.

Results: The operation was successfully completed without intraoperative complications such as vascular injury or contrast medium allergy. No bleeding or hematoma was found at the puncture site, and prolonged bed rest was not required. Three days after operation, dysphagia was significantly relieved, and the patient could take semi-liquid diet with satisfactory short-term efficacy.

Conclusion: Transradial artery approach for esophageal artery chemoembolization is characterized by minimal trauma, high safety and favorable patient comfort. It can effectively relieve dysphagia caused by advanced recurrent esophageal cancer, providing a novel alternative approach for minimally invasive interventional treatment of esophageal cancer, which is worthy of further clinical promotion.

Keywords: Transradial Approach; Esophageal Cancer; Recurrent Tumor; Esophageal Artery; Chemoembolization; Minimally Invasive Intervention

Introduction

Esophageal cancer is a common malignant tumor of the digestive tract. Most patients are diagnosed at advanced stages and lose the opportunity of radical surgical resection. For patients with recurrent esophageal cancer after chemoradiotherapy who cannot tolerate systemic treatment, palliative local treatment is essential to relieve symptoms and improve quality of life. Esophageal arterial chemoembolization delivers high-concentration chemotherapeutic agents to tumor feeding arteries regionally and blocks tumor blood supply simultaneously, exerting dual anti-tumor effects of local chemotherapy and arterial embolization. This technique can effectively inhibit tumor progression and alleviate esophageal obstruction. Traditional interventional procedures mainly adopt the transfemoral artery approach, which is associated with prolonged postoperative bed rest, high incidence of puncture-related complications and poor tolerance in elderly patients. In recent years, the transradial artery approach has been widely applied in cardiovascular and abdominal tumor intervention due to its advantages of minor trauma, convenient hemostasis, few complications and rapid postoperative recovery. However, its application in interventional therapy for recurrent esophageal cancer has been rarely reported. This article reported one clinical case to summarize the application experience of transradial esophageal artery chemoembolization, so as to provide reference for clinical minimally invasive treatment of esophageal cancer [1-4].

Clinical Data

General Information

A 65-year-old male patient was admitted with the chief complaint of "a 2-year history of esophageal malignant tumor and aggravated dysphagia for 4 months". The patient was diagnosed with esophageal squamous cell carcinoma in 2023. He received 2 cycles of combined therapy with albumin-bound paclitaxel, cisplatin and camrelizumab, followed by 28 fractions of radiotherapy and another 3 cycles of chemoimmunotherapy. His swallowing symptoms were significantly improved after systematic treatment.

Four months before admission, the tumor relapsed with progressive dysphagia. Obvious obstruction occurred even when taking liquid food and drinking water, without choking, hematemesis or melena. The patient had no history of hypertension, diabetes, coronary heart disease, surgery, trauma, or allergy to contrast agents and drugs.

Auxiliary Examination

Physical examination: clear consciousness, poor mental status, emaciation, no enlargement of superficial lymph nodes, normal cardiopulmonary auscultation, mild retrosternal tenderness. Laboratory examinations: routine blood test, liver and renal function, electrolytes, coagulation function and tumor markers were all within normal ranges; infectious disease screening was negative. Imaging examinations: Esophageal barium meal examination demonstrated stenosis, stiff wall and mucosal destruction in the upper esophagus. Enhanced chest CT revealed space-occupying lesion in the upper esophagus with enlarged periesophageal lymph nodes suggestive of metastatic lesions, without distant organ metastasis. Gastroscopy showed cauliflower-like mass in the upper esophagus with severe luminal stenosis, through which the endoscope failed to pass. Pathological diagnosis: moderately differentiated squamous cell carcinoma of the upper esophagus.

Condition Evaluation

The patient was diagnosed with stage upper esophageal moderately differentiated squamous cell carcinoma (cT3N1M0) with post-chemoradiotherapy recurrence. Considering advanced age, poor physical condition and refusal of surgery and systemic chemotherapy by the family, multidisciplinary team (MDT) consultation was conducted. After exclusion of interventional contraindications, transradial esophageal artery chemoembolization was scheduled.

Treatment Methods

Preoperative Preparation

Routine preoperative examinations were completed to rule out surgical contraindications. Allen test was performed to evaluate collateral circulation of the hand. The patient was fasted for 6 hours before operation. Iodine allergy test was negative. The surgical risks and benefits were fully informed, and informed consent was signed. Interventional instruments and drugs, including radial artery puncture set, catheters, microcatheters, guide wires, contrast agents, chemotherapeutic drugs and embolic agents, were prepared adequately.

Surgical Procedure

The patient was placed in the supine position. The right wrist was disinfected and draped routinely, and local infiltration anesthesia was performed with 1% lidocaine. The right radial artery was punctured via the Seldinger technique, and a 5F arterial sheath was inserted. Heparinized saline was injected through the sheath to prevent thrombosis. Under DSA fluoroscopy, the catheter was delivered through the radial artery, brachial artery, axillary artery and subclavian artery to the aortic arch. Selective angiography was performed in the thoracic aorta to identify the origin, course and tumor staining of tumor-feeding arteries. A microcatheter was super-selectively inserted into the target esophageal artery. Locoregional arterial perfusion was performed with albumin-bound paclitaxel 200 mg plus cisplatin Subsequently, 1 mL temperature-sensitive liquid embolic agent and an appropriate amount of 300–500 μm embolic microspheres were injected slowly until complete occlusion of the tumor feeding artery and disappearance of tumor staining on repeat angiography. After operation, the catheter and arterial sheath were removed. The radial artery puncture site was compressed for 10 minutes and fixed with sterile gauze compression bandaging.

Postoperative Management

Early ambulation was allowed without mandatory bed rest. Vital signs, right radial artery pulsation, hand blood circulation and puncture site conditions were closely monitored. Symptomatic supportive treatments including acid suppression, gastroprotection, fluid replacement and anti-infection were administered. The diet was gradually transitioned from liquid to semi-liquid food. Routine reexamination of blood routine, liver and renal function was conducted to monitor adverse reactions and therapeutic effect.

Results

Intraoperative Condition

The operation lasted for approximately 30 minutes with smooth vascular intubation and accurate super-selection of target vessels. No intraoperative adverse events such as vascular dissection, rupture, contrast allergy or ectopic embolism occurred. The vital signs remained stable throughout the procedure.

Postoperative Recovery

The patient returned to the ward on foot without lumbago, abdominal distension, puncture site hematoma or hand ischemia and numbness. Liquid diet was tolerated 6 hours after operation. On the 3rd postoperative day, retrosternal pain disappeared, dysphagia was significantly relieved, and semi-liquid diet was well tolerated with improved appetite and general condition.

Follow-up Reexamination

One week after operation, no obvious myelosuppression or hepatorenal dysfunction was observed. One month later, reexamination of chest CT and esophageal barium meal showed alleviated esophageal stenosis, reduced tumor volume and occluded tumor blood supply. The obstructive symptoms were continuously improved with significantly enhanced quality of life.

Discussion

For patients with recurrent advanced esophageal cancer, the core therapeutic goals are to relieve obstruction, control tumor progression and improve quality of life. Esophageal arterial chemoembolization increases local drug concentration and blocks tumor blood perfusion, which achieves reliable anti-tumor efficacy with fewer systemic side effects compared with intravenous chemotherapy. Compared with the traditional transfemoral approach, the transradial approach has prominent clinical advantages: first, the radial artery is superficial with convenient compression hemostasis, which reduces the risk of bleeding and hematoma; second, early ambulation avoids bedridden complications such as deep venous thrombosis and urinary retention; third, the anatomical characteristics of the radial artery ensure high operational safety and low vascular injury risk, which is especially suitable for elderly and debilitated patients. Several key points should be emphasized in transradial interventional therapy for esophageal cancer: preoperative Allen test is necessary to ensure sufficient hand collateral circulation; intraoperative manipulation should be gentle to avoid intimal injury; embolic agents should be dosed precisely to prevent reflux and ectopic embolism; postoperative circulation of the affected limb and puncture site need close observation.

Conclusion

Transradial artery approach for esophageal artery chemoembolization is a safe, effective and minimally invasive therapeutic strategy for recurrent advanced esophageal cancer. It possesses superiorities of slight trauma, few complications, rapid recovery and good patient compliance. This technique can effectively alleviate malignant dysphagia and improve life quality, which provides a new optimal access for interventional treatment of esophageal cancer and deserves wide clinical application.

References

1. (2022) Chinese Society of Esophageal Cancer. Chinese Guidelines for the Diagnosis and Treatment of Esophageal Cancer (2022 Edition). Chinese Journal of Oncology 44(6): 478-510.
2. Teng GJ (2020) Interventional Radiology[M]. Beijing: People's Medical Publishing House.
3. Zhang HJ, Liu W (2021) Application progress of transradial approach in thoracic tumor intervention[J]. Electronic Journal of Interventional Radiology 9(2): 112-115.
4. Li CQ, Wang H (2020) Clinical efficacy of arterial infusion chemoembolization in the treatment of advanced esophageal cancer[J]. Practical Journal of Cancer 35(8): 1337-1340.

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