



## Gastric Tumor Perforation Repair with Falciform Ligament

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### Case report

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### Abstract

The rate of perforation in gastric tumors has been reported to be between 0.5 and 3.9%. Because the tumor is not diagnosed at the moment, or the tumor's stage is unknown, repairing the perforation site is recommended rather than resection. The first thing that comes to mind as a repair method is omentoplasty, but other alternatives can be applied in cases where this is not possible. In our case report, we aimed to present gastric tumor perforation repair with a falciform ligament in a case of linitis plastica under chemotherapy accompanied by peritoneal carcinomatosis.

**Keywords:** Gastric Tumor; Ligament; Carcinomatosis

### Introduction

Gastric linitis plastica is typically caused by infiltration of diffuse-type gastric adenocarcinoma into the submucosa and muscularis propria. The rate of metastasis and the possibility of causing carcinomatosis are higher than other gastric tumors [1]. When the diagnosis is made, appropriate oncological treatment is started in patients who are not suitable for surgery, and in the presence of regression as a result of this treatment, radical surgery may be on the agenda again. In such patients receiving chemotherapy, the possibility of perforation increases even more. The rate of perforation in gastric tumors has been reported to be between 0.5 and 3.9% [2]. Omentoplasty is still accepted as the most reliable and straightforward surgical technique in benign or malignant stomach perforations [3]. Finding the omentum with an intact vascular pedicle and pulling it into the perforation area is essential for this technique. The technical difficulty of applying the omental plug, especially in patients with previous omentum resection or carcinomatosis, has led to a falciform ligament for the PUP. Some studies have reported that PUP is used may even be a more helpful technique than omentopexy. In the case we

will talk about, due to the omentum not being suitable as a result of extensive carcinomatosis, repair with the falciform ligament (falciformepexy) was performed.

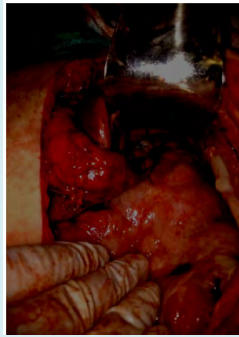
### Case Report

A 71-year-old female patient, who was receiving chemotherapy (DCF (Docetaxel-Cisplatin- 5FU)) with the diagnosis of advanced gastric tumor, applied to the emergency outpatient clinic with the complaint of increased abdominal pain about three days and increased for one day. Computerized tomography was planned for the patient, who had diffuse tenderness and defense in physical examination, due to the detection of free air under the diaphragm in the direct radiographs. Abdominal tomography was taken to evaluate tumor perforation, and the patient was operated on under emergency conditions. At the exploration, a perforation area of approximately 2 cm was observed at the anterior part of the stomach, close to the lesser curvature. Figure 1 since the omentum and small intestine loops could not be released due to extensive carcinomatosis, it was planned to use the falciform ligament by releasing it for repair. Falciformepexy was performed with a method similar

to the omentoplasty technique. Figure 2 the operation was terminated after abdominal washing and drainage. After three days of intensive care unit follow-up, the patient was taken to the service, and a leakage test was performed with orally taken methylene blue. Oral food was given to the patient due to the absence of methylene blue in the drainage bag. After a total of 7 days of hospitalization, the patient was discharged to continue his oncological treatment.



**Figure 1:** Perforation area observed at the anterior part of the stomach.



**Figure 2:** After performing falciformepexy.

## Discussion

Omental patch repair of perforated gastric ulcers was first described by Graham in 1937 when he reported a case series of 51 patients successfully managed with the help of his novel technique. Graham's omentopexy technique is still the mainstay of emergency surgical repair of perforated

gastric or duodenal ulcers [4]. In the literature, the use of the falciform ligament in ulcer perforation was first described in a case by Fry in 1978. Since then, it has been reported in many articles that it is a safe alternative to omentoplasty. We think that the features of the falciform ligament, such as its smooth structure, easy release, and safe pulling over the edematous perforation area, allow it to be used as an alternative to omentoplasty in ulcer or tumor perforations in cases where the omentum is absent or weak. The technical difficulty of applying the omental plug, especially in patients with previous omentum resection, has led to the use of falciform ligament for the PUP, and some studies have reported that PUP may even be a more practical technique than omentopexy [5].

## Conclusion

Falciformopexy is an alternative technique that can be used in situations where it is not possible to use the omentum. Large-scale studies are needed to examine whether falciformopexy is superior to omentopexy in PUP patients.

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