

# Hartman Procedure

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**Abstract:** *Hartmann procedure defines closure of the rectal stump and construction of the colostomy following resection of the segment of colon with malignancy, which is preferred in emergent cases with complete blockage of the colonic passage.*

**Keywords:** rectal, colon

## 1. Introduction

The Hartmann procedure was first introduced by Henri Hartmann in 1921. Originally, the recipe was made for rectosigmoid cancers and the technique was described as closure of the rectum stump and performing end-colostomy following tumor resection (1). However, this method has gained popularity after many years. Boyden et al. Applied this method to patients with acute diverticulitis (2). In fact, these two indications are pathologies in which the Hartman procedure is performed. Other indications include sigmoid volvulus, traumatic colon perforations, radiation damage, and anastomosis dissociation after anterior resection (3-7).

At the beginning of this century, three-stage surgery was used as the standard method in emergency surgery of descending colon (8,9). Loop colostomy was first performed in this method, then the lesion was resected and colostomy was closed. When the overall morbidity and mortality are evaluated, the first opened loop colostomy does not provide an additional survival advantage and there are disadvantages such as increasing the length of hospital stay and the number of operations applied to patients (10). This method is currently only used in patients with unstable hemodynamics (11).

The Hartmann procedure has the advantages of immediate resection of the diseased colon, eliminating the possibility of leakage due to the lack of anastomosis, and shorter hospital stay. Postoperative closure rates of colostomy by various sources have been reported in around 60% (12). Since the Hartmann procedure was first described, certain progress was shown in antibiotic therapy, intensive care conditions and anesthesia. In addition, in some cases, intraoperative non-decompressed intestines can be anastomosed by intraoperative lavage. Thus, the approach to possible complications of previous anastomosis has also begun to change (13-19). After the positive results obtained with intraoperative decompression, the surgeons have turned to the decompression of the colon prior to the operation. For this, endoscopic stent has become more and more widely used (20-24). Pre-operative decompression has the advantage of correcting physiological changes that occur with obstruction. Thus, emergency surgery is made elective and less morbidity and mortality can be achieved with one operation.

One important point to note is that the described Hartmann procedure is generally applied for lesions above the peritoneal reflection. In our two-year screening at our clinic, 6 patients with Hartmann procedure were diagnosed due to pathologies under reflection. Two of these patients had rectal cancer and 1 had rectal neuroendocrine tumor. In fact, they were referred to our clinic as a result of leakage in these patients who had undergone lower anterior resection in the external center and were converted to Hartmann procedure due to peritonitis. The common feature of these 3 cases was that they did not have a protective loop ileostomy and they did not receive any neoadjuvant therapy. One of these patients had local recurrence and anastomosis stenosis in the other two. One of the patients who had anastomosis stenosis was re-operated and reanastomosis was performed. In the other, endoscopic dilatation was performed. In patients with local recurrence, adjuvant treatments were continued.

In two of the remaining three cases, direct Hartmann procedure was applied due to the rectal adenocarcinoma resulting from the ileus. In one of these patients, because of the localization of the primary tumor (anal verge), the stoma could not be closed, and in the other, rectovesical fistula developed following stoma closure. In the third patient, the Hartmann procedure was performed because of the severe bleeding of rectal ulcer. In this patient, stoma was planned to be permanent due to general condition disorder.

As a result, we believe that the patients who underwent low anterior resection should be examined very carefully before performing the operation and protective loop ileostomy should be performed in suspected cases. On the other hand, in patients with rectal cancer who developed ileus, we think that intestinal decompression with stent or loop colostomy and neoadjuvant chemoradiotherapy and then tumor excision should be applied considering that these patients will be advanced stage. Otherwise, the probability of developing a permanent stoma, fistula or anastomosis stenosis is very high in this patient group.

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