

## Do We Need Diversion Stoma in L.A.R and U.L.A.R?

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### Abstract

Protective stoma has a great role in reducing the chance of a patient encountering postoperative anastomotic leakage. It is discussed in this case report the importance of diverting stoma in order to reduce the morbidity and mortality rate encountered postoperatively from an anastomotic leak, in which anastomotic leaks are yet considered to be the most threatening complication that all surgeons experience and try to avoid. There are definite factors-discussed in this report-that should be strictly checked upon before using a diverting stoma, since it always should be remembered that diversion is not with zero negative consequences, but to some extent these disadvantages may outweigh the underlying consequences of anastomotic leak.

*Keywords: Protective stoma; Postoperative anastomotic leakage; Diverting stoma*

### 1. Abbreviation

L.A.R: Low Anterior Resection; U.L.A.R: Ultra Low Anterior Resection

### 2. Introduction

Anastomotic leakage is still considered to be a major postoperative complication threat to surgeons regardless the great advances in the medical field because it increases the risk of mortality and morbidity, not only this but also it prolongs the duration of patients stay in the hospital adding extra hospital burden together increasing the chance of the patient encountering infections [1]. Age , gender , and underlying medical history of the patient all tend to serve as risk factors that may lead to anastomotic leakage postoperatively . Great interventions aiming to reduce the risk of encountering postoperative leakage, one of which is inserting a diverting stroma.

A diverting stoma is significantly known to reduce the consequences of distal anastomotic failure following a colorectal surgery. In order to use a diverting stoma a strict and well-studied plan should be followed to avoid unnecessary complications.

### 3. Case

A 56 years old male patient diagnosed with sigmoid cancer, invading the bladder. Patient gave a history of generalized fatigue, muscle weakness, weight loss, and loss of appetite for the past four months. Abdominal, pelvic, and chest CT scans were done together with a urology consultation. The patient underwent anterior resection with loop ileostomy diversion, and parietal cystectomy. In the below figure (FIG. 1 and 2).



FIG. 1. Sigmoid cancer invading the upper bladder dome.

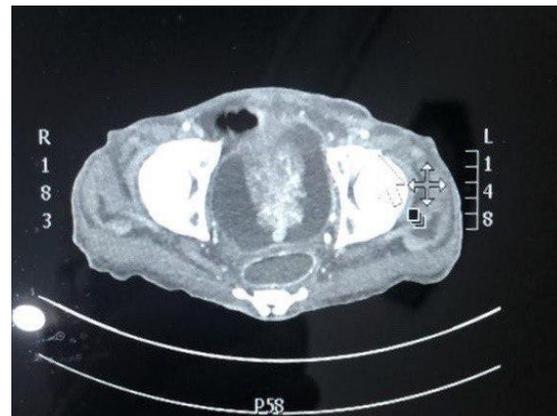


FIG. 2. The figure above indicates the bladder being invaded by the sigmoid tumor anteriorly.

### 4. Discussion

In the present case, the corner stone decision was to do loop ileostomy diversion due to certain patient laboratory and hemodynamic results:

1. Preoperative hemoglobin 79, and the patient received two units of blood before the operation.

2. There were two electrolytes disturbances before the operation. The patient was hypokalemic, potassium level was (2.9 mmol/l) and hyponatremic, sodium level was (126 mmol/l), but all these imbalances were corrected before the operation.
3. The patient was cachectic, and had hypoalbuminemia, albumin was low (17g/L), which was also corrected before operation administration.
4. It was a major operation, anterior resection and partial cystectomy, which took almost four hours under G.A.
5. Age of the patient together with cardiac comorbidities, he had ischemic heart disease.

All these factors affect the anastomosis and it may result in a leakage, so the judgment mainly depends on the patient underlying comorbidities affecting the anastomosis. We decided to do a temporary diversion loop ileostomy, which is a safe and we kept it for three months only to avoid further anastomotic complications.

An important factor is the anastomotic site, whether it will be near the anal verge or not, if it is 5 cm - 6 cm which mean it is U.L.A.R, below the peritoneal reflection, always stoma diversion is needed, because of low the blood supply in this area. However, for L.A.R above the peritoneal reflection, stoma diversion depends on the general condition and laboratory findings of the patient. There are many factors that are considered before doing stoma diversion, such as the age of the patient, old aged patients having multiple underlying comorbidities needs stoma diversion.

Hemoglobin blood level of the patient preoperatively is another determinant factor, specifically if its below (10 g/L). Not only this but also the nutritional assessment of the patient preoperatively, in specific albumin level if below (30 g/L).

Another determinant factor is the intraoperative hemodynamic factor, any blood pressure fluctuations would lead to anastomotic leakage, which leads to the failure of colorectal anastomoses [2].

Based on many studies conducted, the availability of protective stoma greatly reduces the risk of anastomotic leakage for patients that undergo either L.A.R or U.L.A.R, therefore this leads in decreasing the mortality rate postoperatively in return.

## **5. Conclusion**

Most of L.A.R and U.L.A.R in specific cases, need stoma diversion temporarily to protect the anastomosis, at least for six weeks, this could prevent anastomotic leakage which is a serious complication post colorectal surgery. To sum up diverting stoma procedure reduces the risk of experiencing anastomotic leakage post U.L.A.R, or L.A.R. We should look at the patient, preoperative, intraoperative, and postoperative factors, since these underlying factors greatly affects the anastomosis.

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