

# Multiple digestive resections as part of primary cytoreduction in advanced stage epithelial ovarian cancer

## Abstract

*The absence of residual disease remains the strongest predictor for disease free and overall survival in patients with advanced stage or relapsed ovarian cancer. However in most cases this desiderates is achieved after performing multiple visceral resections. Extended pelvic disease usually involves the surrounding pelvic viscera and leads to the necessity of digestive resections such as rectosigmoidectomy. In other cases other digestive resections such as right ileocectomy might be needed. We present the case of a 64 year old patient in which an R0 resection was feasible after association of rectosigmoidectomy, right ileocectomy and segmental ileal resection.*

**Keywords:** advanced stage ovarian cancer, rectosigmoidectomy, ileo-colectomy, segmental enterectomy

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## Introduction

Ovarian cancer remains one of the most aggressive gynecologic malignancies affecting an increased number of patients worldwide. One of the most important biological characteristics of this malignancy is the capacity to spread using multiple patterns. This particularity is responsible for the fact that most cases are diagnosed in an advanced stage of the disease when disseminated lesions are already present. In all these cases it has been widely showed that the most powerful predictor for an increased overall survival remains the residual disease<sup>(1,2)</sup>.

Due to the capacity of spread using both the peritoneal route and through contiguity, ovarian tumors usually invade the surrounding pelvic viscera such as the rectosigmoid. In all these cases an association between total hysterectomy with bilateral adnexectomy and rectosigmoidian resection might be needed in order to obtain a good local control of the disease. However, in other cases a more extended disease is encountered at the moment of initial diagnosis, other visceral resections being needed in order to control this malignancy.

Once a cytoreductive procedure is performed, the patient will be addressed to the oncology service in order to be submitted to adjuvant chemotherapy. It has been widely demonstrated that the best therapeutic option which can provide a prolonged disease free and overall survival remains cytoreductive surgery to less than 2 cm of residual tumor followed by adjuvant taxanes and platinum based chemotherapy<sup>(3)</sup>.

It has been reported that bowel surgery is part of debulking surgery in more than 50% of patients submitted to surgery, rectosigmoidian resections being a

part of a standardized protocol of pelvic resections<sup>(4,5,6)</sup>. Although not as much frequently seen, other procedures such as right colectomy or segmental enterectomy can be safely associated in order to increase the rate of complete resection<sup>(7)</sup>.

## Case report

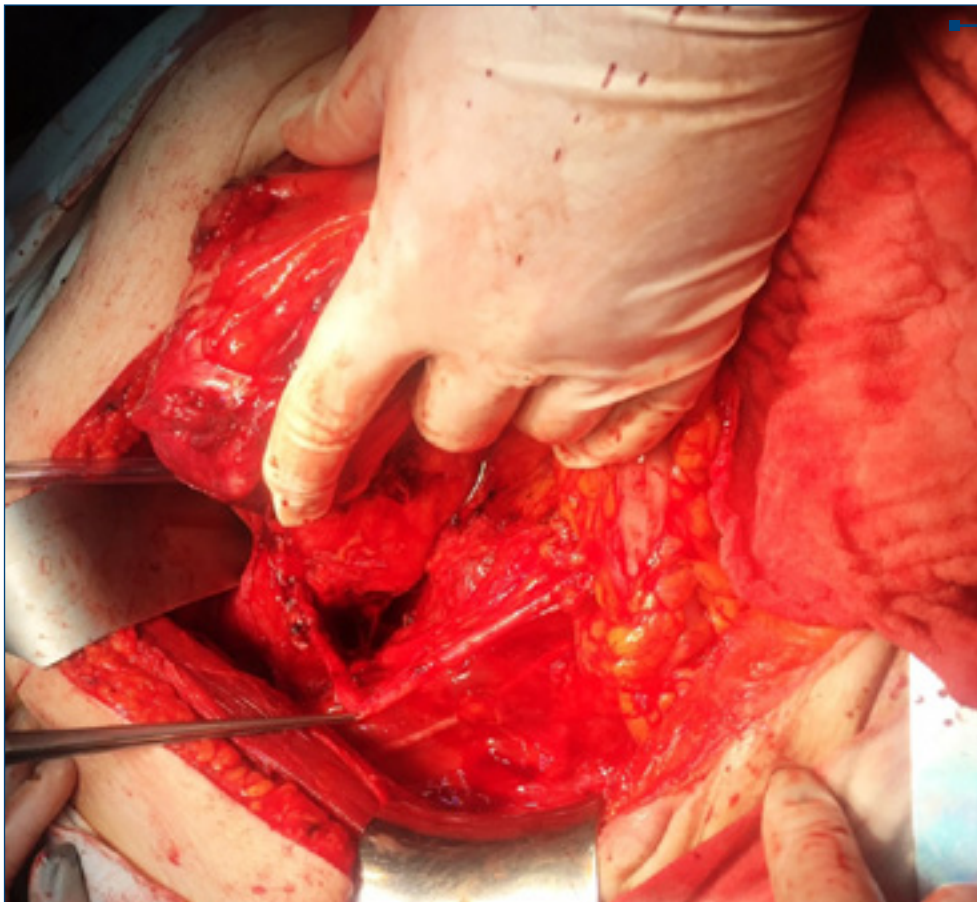
A 64-year-old patient presented for pelvic pain, diffuse abdominal distension and constipation. The local examination revealed a diffuse distended abdomen associated with the presence of two slightly mobile tumoral masses developed on the left and respectively right side of the abdomen. The computed tomography revealed a tumoral transformation of the both ovaries associated with the presence of two tumoral masses measuring 4/5/3 cm and respectively 6/4/5 cm invading the rectosigmoid and the right colon respectively while the biological tests revealed a significant higher than normal value of CA 125 (of 834 U/ml).

The patient was submitted to surgery, a total hysterectomy with bilateral adnexectomy en bloc with segmental enterectomy, omentectomy, pelvic and parietal peritonectomy, rectosigmoidectomy and right ileocectomy being performed (Figures 1-5). The continuity of the digestive tract was reestablished by an enteroenterostomy in association with an ileo-transverse anastomosis and a low colo-rectal anastomosis. Pelvic and para-aortic lymph node dissection was also associated, an R0 resection being achieved. The postoperative course was uneventful, the patient being discharged on the 10<sup>th</sup> postoperative day. The histopathological studies revealed the presence of a moderately differentiated serous ovarian adenocarcinoma. One month

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**Figure 1.** Large ovarian tumor invading the rectosigmoid



**Figure 2.** Dissection of the tumor. Identifying the left ureter

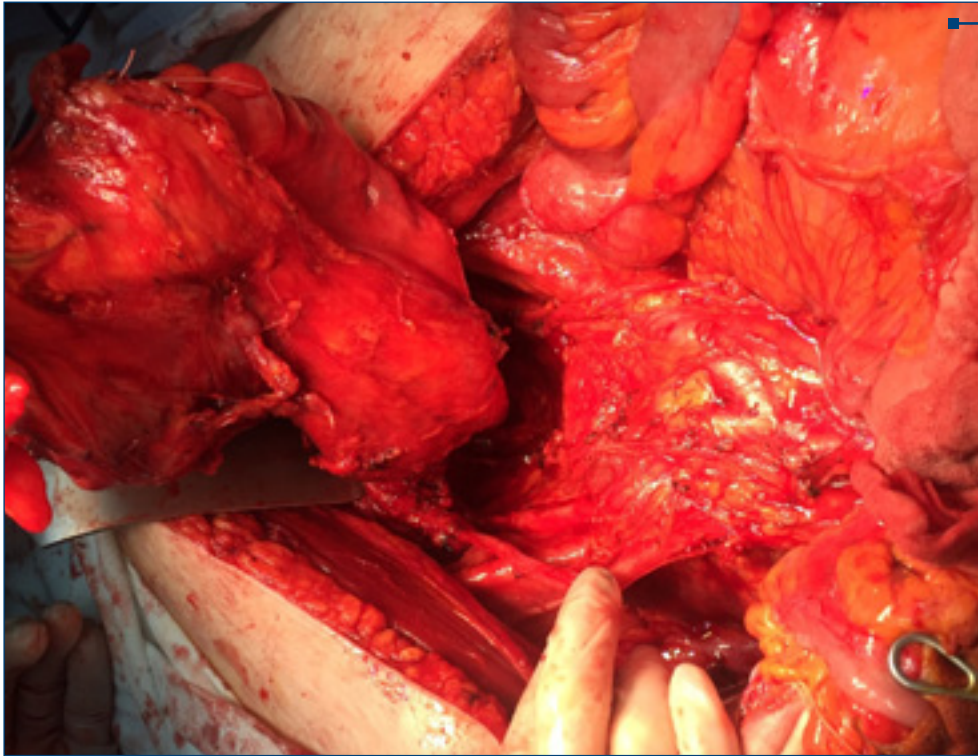


Figure 3. Complete mobilization of the pelvic masses invading the rectosigmoid and the right colon

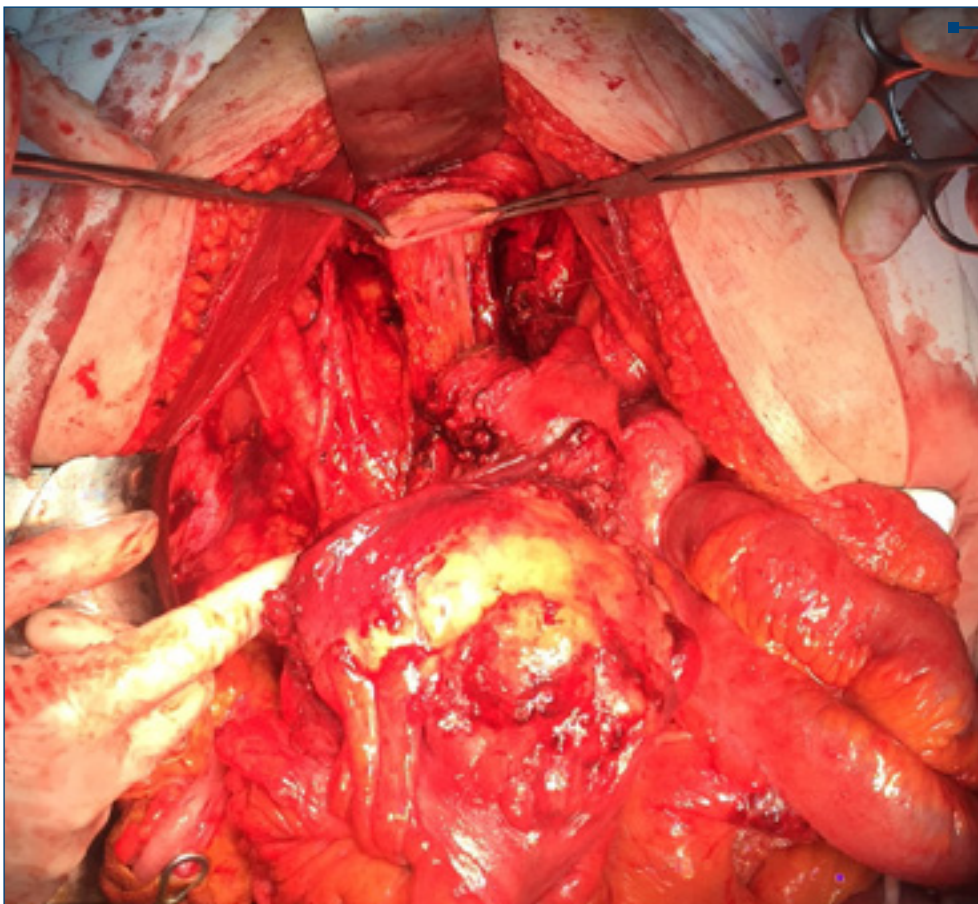
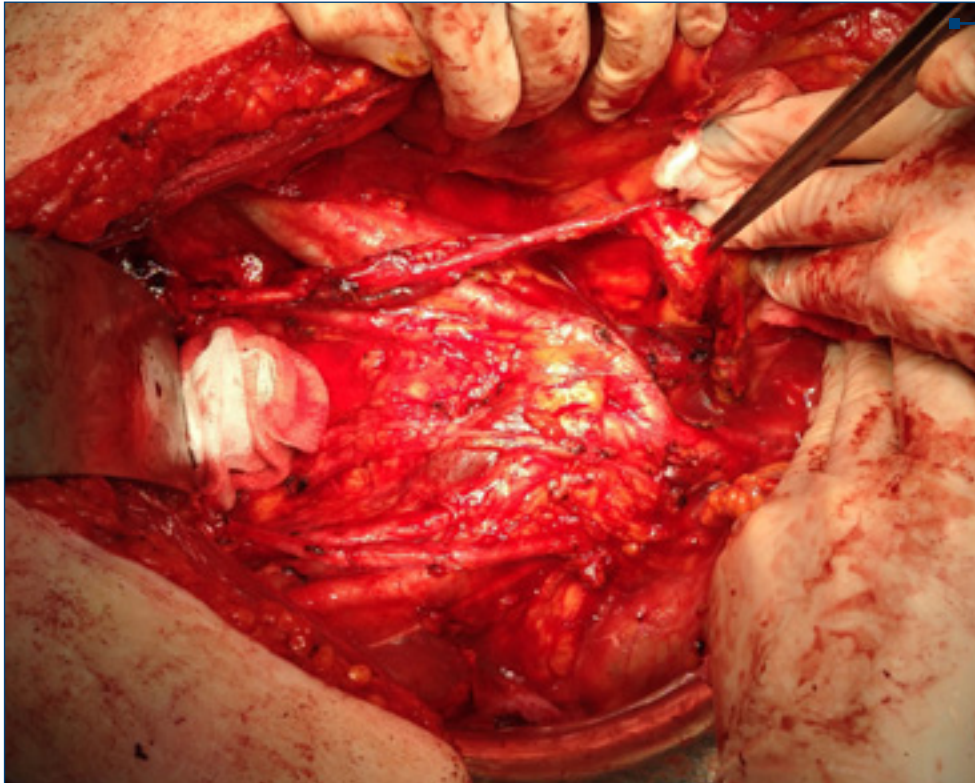


Figure 4. The final aspect after resection. Preparing the rectal stump for anastomosis



**Figure 5.** The final aspect after resection and lymph node dissection

after surgery the patient was addressed to the oncology clinic where she was submitted to taxanes and platinum based adjuvant chemotherapy.

## Discussion

Due to the high capacity of metastasizing of ovarian cancer via peritoneal, hematogenous or lymphatic route it is not surprising at all that multiple digestive resections might be needed in order to achieve an R0 resection and secondarily, a good control of the disease<sup>(7,8,9)</sup>. While the pelvic localization of the right ileocolon and rectosigmoid explain the propensity of these segments to be involved by local invasion, the spread via peritoneal route leading to bulky disease explains other visceral involvements such as transverse colon or small bowel<sup>(7-10)</sup>.

In the study conducted by Hoffmann et al. regarding the implication of different sites of bowel involvement in advanced stage ovarian cancer, 144 patients were included. Among these patients a limited to rectosigmoidian bowel resection was performed in 81 cases, while in 36% of cases other colon segments than rectosigmoidian resections were performed. Among the 144 cases, in 17 patients two serial anastomoses were performed; two of these 17 patients also had a proximal diverting ostomy which was closed upon completion of chemotherapy. The study comes to demonstrate the benefits of extended resections of multifocal colonic involvement in advanced stage ovarian cancer in order to maximize the cytoreductive effort<sup>(7)</sup>.

In order to determine which are the most important factors associated with anastomotic leak after rectosigmoidian resections for advanced stage ovarian cancer, Mourton et al. included 70 patients submitted to rectosigmoidian resections as part of cytoreductive surgery for advanced stage ovarian cancer.

Among these cases additional intestinal resections were performed in 14 cases: right colectomies were performed in 11 cases, other large bowel resections were performed in two cases while small bowel resection was associated in one case. Optimal cytoreduction was achieved in 79% of cases. Among patients undergoing suboptimal cytoreductive surgery only 3% had pelvic residual disease. Postoperatively a single patient developed an anastomotic leak and required reoperation while three other patients developed pelvic abscesses which were successfully drained percutaneous.

Other postoperative complications requiring reoperation were postoperative upper abdominal bleeding after extended upper abdominal resections (i.e. in four cases) and visceral perforation (i.e. in one case). In 12 cases a protective ileostomy was performed. However in 11 of the 12 cases were submitted to ileostomy reversal after a median period of 7 months. At the moment of ostomy reversal a second look laparotomy was also performed. The authors concluded that rectosigmoidian resections can be safely performed as part of cytoreductive surgery for advanced stage ovarian cancer. In the meantime the study sustained the benefits of diverting ileostomy in cases with low anterior rectosigmoidian resections<sup>(11)</sup>.

In order to determine which are the cases at risk for developing anastomotic leaks after colonic resection for advanced stage ovarian cancer Kalogera et al. introduced in their study 42 patients submitted to colic resections as part of debulking surgery for advanced stage ovarian cancer. The authors showed that association of additional large bowel resections to rectal resections was associated with an increased risk of anastomotic leak while protective diverting ostomies were associated with a significantly lower risk of anastomotic leak. In the meantime patients with anastomotic leaks were less likely to start chemotherapy within the first 30 days and, secondarily, reported a poorer overall survival<sup>(12)</sup>.

In a more recent study conducted by Plotti et al. regarding the feasibility and benefits of partial rectal resection versus total rectosigmoidectomy as part of debulking surgery for advanced ovarian cancer 154 patients were included: 82 patients were submitted to total rectal resection while the other 72 patients were submitted to partial rectal resection. Partial rectal resection was performed in cases in which the complete resection of disease led to a laceration of <30-40% of

intestinal wall circumference and was associated with similar rates of optimal debulking when compared to cases submitted to total rectal resection.

In the meanwhile the 5 year overall survival was similar between cases submitted to partial versus total rectal resection (48% versus 52%).

The study concluded that partial rectal resection is perfectly feasible in cases presenting limited recta involvement, without jeopardizing the radicalism of the procedure<sup>(13)</sup>.

However in our case the large dimensions of the pelvic mass invading the rectal wall made impossible a more conservative procedure.

## Conclusions

Multiple digestive resections can be safely associated as part of cytoreductive surgery for advanced stage or relapsed ovarian cancer. The main benefit consists in maximizing the debulking effort and reducing the residual disease. In this way the premises of a good oncological outcome and of a favorable response to chemotherapy are successfully created. ■

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