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Editorial

Posterior pelvic exenteration, a crucial component in the surgeon's toolbox for optimizing surgical cytoreduction for advanced ovarian cancer

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In this month's edition of the *Journal of Gynecologic Oncology*, Houvenaeghel et al. [1] retrospectively examined surgical morbidity and mortality associated with cytoreductive surgery that incorporated a posterior pelvic exenteration (PPE) for the treatment of ovarian cancer, and also identified predictors of improved survival in this setting.

The need to perform a rectosigmoid resection at the time of debulking surgery for ovarian cancer is common given that the distal colon is often involved either by direct expansion or tumor implantation. By including a PPE during debulking surgery, Houvenaeghel et al. [1] achieved a complete gross resection (CGR) rate of 82%. In their study, the overall complication rate was 30%, the grade 3 complication rate was 10%, and there were no grade 4 or 5 complications. In comparison, others have reported grade ≥3 complication rates of 15% and 18.8% at the time of primary debulking surgery (PDS) for ovarian cancer [2,3]. Surgical advances for the assessment of rectosigmoid anastomosis—the air leak test, staplers, and more recently, near-infrared imaging for perfusion assessment—will likely further improve complication rates associated with PPEs. Although the authors report an acceptable rate of serious adverse events, the high rate of protective ileostomy and colostomy (60.9%) is striking, especially considering the decision to perform a diverting ileostomy is highly subjective and multiple other studies have reported rates of only 3%–13% [4,5].

Houvenaeghel et al. [1] have added to a growing body of literature that has shown survival after cytoreductive surgery involving rectosigmoid resection correlates with maximum diameter of residual disease [5,6]. They report that among patients who had undergone surgery during their initial treatment course, excluding recurrences, the 5-year overall survival (OS) rate was 77.8% and the median OS was 75.31 months among patients who achieved a CGR compared with 0% and 24.13 months, respectively, for those left with residual disease (p=0.001). Peiretti et al. [5] reported similar findings in patients who had undergone rectosigmoid colectomy at the time of PDS, with a median OS of 72 months for those who achieved a CGR and 42 months for those left with residual disease. In line with

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prior studies, Houvenaeghel et al. [1] identified CGR as an independent prognostic factor for improved survival, reporting a worse OS (hazard ratio [HR]=4.3; 95% confidence interval [CI]=1.59–11.69) and disease-free survival (DFS) (HR=3.74; 95% CI=1.72–8.15) for patients left with residual disease (p=0.004 and 0.001, respectively). There was no significant difference in complication rates between those who did and did not achieve a CGR.

Furthermore, Houvenaeghel and colleagues [1] reported that PDS compared with interval debulking surgery (IDS) was not associated with a significant difference in survival after adjusting for various co-variates, including CGR status, with a DFS HR of 0.980 (95% CI=0.040–2.379; p=0.964). When analyzing only cases in which a CGR was achieved, however, DFS favored PDS over IDS (HR=3.493; 95% CI=1.219–10.01; p=0.020). These findings contradict those of the first randomized trial looking at neoadjuvant chemotherapy for the treatment of advanced ovarian cancer (EORTC 55971), which demonstrated no difference in OS between PDS and IDS [7]. The main criticism of the trial is the extremely low rate of CGR in the PDS cohort compared with IDS cohort (19% vs. 51%, respectively). Two subsequent randomized clinical trials—CHORUS and JCOG 0602—reported similar findings [8,9] Houvenaeghel's findings strongly support the low rate of CGR as a plausible explanation for the lack of survival advantage with PDS reported in these trials. One leading scientific explanation for this phenomenon is that PDS with CGR eliminates the vast majority of tumor cells, which reduces the quantity of cells prone to chemoresistant mutation [10].

With advances in perioperative care and surgical technique, morbidity from cytoreductive surgery that incorporates a PPE has reached acceptable levels and continues to improve. In parallel, a growing body of literature continues to show that if a CGR can be achieved safely, then PDS is preferable to neoadjuvant chemotherapy followed by IDS. The key may lie in appropriate patient selection. Fagotti et al. [11] described laparoscopic assessment as a tool to triage women for PDS, which when implemented by others resulted in an 88% CGR rate [12] Suidan et al. [13] published an updated version of their resectability scoring system based on preoperative clinical and radiological variables, where a score of $\geq$ 6 was associated with an 87% chance of achieving a CGR at resection.

We congratulate the authors for their contribution to this pivotal growing body of literature. The findings of Houvenaeghel et al. [1] confirm the safety and efficacy of cytoreductive surgery for the treatment of ovarian cancer, preferably in the upfront setting if a CGR is attainable. The continuous refinement of the patient selection process can hopefully maximize the number of patients who can safely achieve a CGR while optimizing survival and minimizing morbidity.

REFERENCES

1. Houvenaeghel G, de Nonneville A, Blache G, Buttarelli M, Jauffret C, Mokart D, et al. Posterior pelvic exenteration for ovarian cancer: surgical and oncological outcomes. J Gynecol Oncol 2022;33:e31. CROSSREF
2. Tseng JH, Cowan RA, Zhou Q, Iasonos A, Byrne M, Polcino T, et al. Continuous improvement in primary debulking surgery for advanced ovarian cancer: Do increased complete gross resection rates independently lead to increased progression-free and overall survival? Gynecol Oncol 2018;151:24-31. PUBMED | CROSSREF
3. Wallace S, Kumar A, Mc Gree M, Weaver A, Mariani A, Langstraat C, et al. Efforts at maximal cytoreduction improve survival in ovarian cancer patients, even when complete gross resection is not feasible. Gynecol Oncol 2017;145:21-6. PUBMED | CROSSREF

4. Tseng JH, Suidan RS, Zivanovic O, Gardner GJ, Sonoda Y, Levine DA, et al. Diverting ileostomy during primary debulking surgery for ovarian cancer: associated factors and postoperative outcomes. Gynecol Oncol 2016;142:217-24.
PUBMED | CROSSREF
5. Peiretti M, Bristow RE, Zapardiel I, Gerardi M, Zanagnolo V, Biffi R, et al. Rectosigmoid resection at the time of primary cytoreduction for advanced ovarian cancer. A multi-center analysis of surgical and oncological outcomes. Gynecol Oncol 2012;126:220-3.
PUBMED | CROSSREF
6. Takahashi O, Sato N, Miura Y, Ogawa M, Fujimoto T, Tanaka H, et al. Surgical indications for combined partial rectosigmoidectomy in ovarian cancer. J Obstet Gynaecol Res 2005;31:556-61.
PUBMED | CROSSREF
7. Vergote I, Tropé CG, Amant F, Kristensen GB, Ehlen T, Johnson N, et al. Neoadjuvant chemotherapy or primary surgery in stage IIIC or IV ovarian cancer. N Engl J Med 2010;363:943-53.
PUBMED | CROSSREF
8. Kehoe S, Hook J, Nankivell M, Jayson GC, Kitchener H, Lopes T, et al. Primary chemotherapy versus primary surgery for newly diagnosed advanced ovarian cancer (CHORUS): an open-label, randomised, controlled, non-inferiority trial. Lancet 2015;386:249-57.
PUBMED | CROSSREF
9. Onda T, Matsumoto K, Shibata T, Sato A, Fukuda H, Konishi I, et al. Phase III trial of upfront debulking surgery versus neoadjuvant chemotherapy for stage III/IV ovarian, tubal and peritoneal cancers: Japan Clinical Oncology Group Study JCOG0602. Jpn J Clin Oncol 2008;38:74-7.
PUBMED | CROSSREF
10. Petrillo M, Ferrandina G, Fagotti A, Vizzielli G, Margariti PA, Pedone AL, et al. Timing and pattern of recurrence in ovarian cancer patients with high tumor dissemination treated with primary debulking surgery versus neoadjuvant chemotherapy. Ann Surg Oncol 2013;20:3955-60.
PUBMED | CROSSREF
11. Fagotti A, Ferrandina G, Fanfani F, Ercoli A, Lorusso D, Rossi M, et al. A laparoscopy-based score to predict surgical outcome in patients with advanced ovarian carcinoma: a pilot study. Ann Surg Oncol 2006;13:1156-61.
PUBMED | CROSSREF
12. Fleming ND, Nick AM, Coleman RL, Westin SN, Ramirez PT, Soliman PT, et al. Laparoscopic surgical algorithm to triage the timing of tumor reductive surgery in advanced ovarian cancer. Obstet Gynecol 2018;132:545-54.
PUBMED | CROSSREF
13. Suidan RS, Ramirez PT, Sarasohn DM, Teitcher JB, Iyer RB, Zhou Q, et al. A multicenter assessment of the ability of preoperative computed tomography scan and CA-125 to predict gross residual disease at primary debulking for advanced epithelial ovarian cancer. Gynecol Oncol 2017;145:27-31.
PUBMED | CROSSREF