Cytoreduction in ovarian cancer: Mayo Clinic experience

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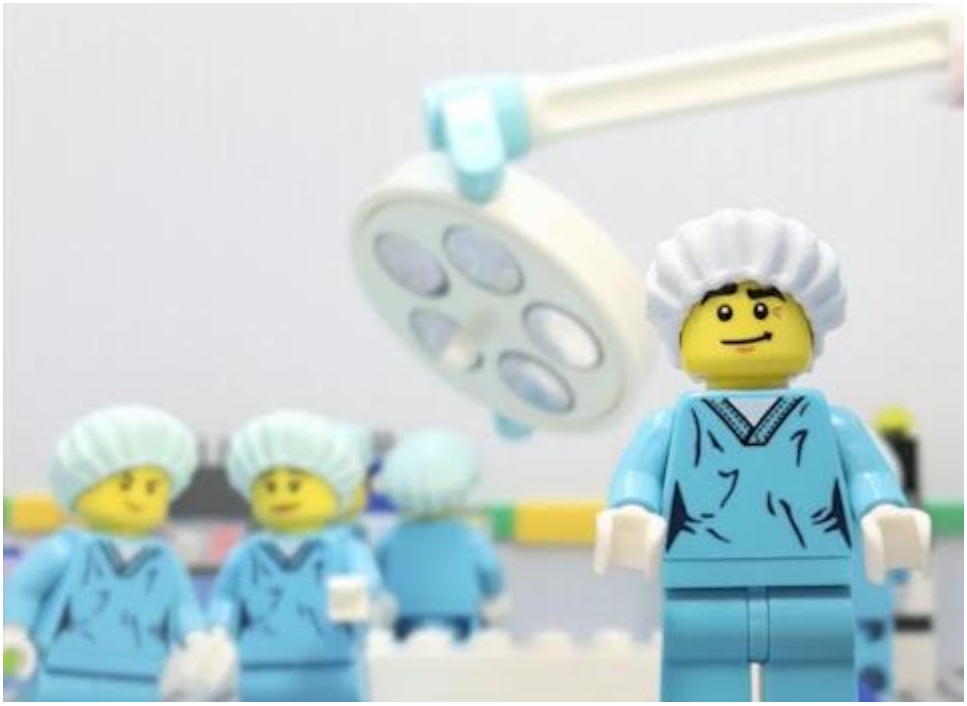

To infinity and beyond

Buzz Lightyear, 1995.

The publication in Gynecologic Oncology in January 2017 of the interesting study by Wallace S et al, of the *Mayo Clinic* and entitled *Efforts to Maximal Cytoreduction to Improve Survival in Ovarian Cancer Patients, even when complete gross resection is not feasible*, again focus attention on the issue of cytoreduction, with truly impressive results. A retrospective study involving 447 patients with stage IIIC ovarian epithelial cancer, attended at that center between the years 2003 and 2011, set out to evaluate how primary debulking surgery (PDS) affects survival and, especially how changes in surgical practice characterized by a greater effort of cytoreduction, since 2007, have improved the survival and the profile of complications.

The authors describe that from 2006 the standards of surgical treatment at that center registered a significant change thanks to a new trend of thought, focused on the accomplishment of the greater surgical effort, destined to a higher rate of complete cytoreduction (RD0). This included: increased availability of surgeons focused on maximal effort in cytoreduction, increased training of

residents and junior staff, discussion of outcomes within the oncology gynecology service, and direct interaction with experienced surgeons considered as benchmarks.

Taking into account the maximum diameter of the residual tumor, the sample was stratified into four groups: a) RD0 without macroscopic disease, b) RD 0.1-0.5 cms, c) RD 0.6-1cm and d) RD> 1 cm, in those patients with residual disease greater than one centimeter. Likewise, the sample was divided into patients treated between 2003 and 2006 and those treated between 2007 and 2011, in order to establish a comparison between both groups.

Distribution based on the extent of cytoreduction was: RD0 44.5%; RD 0.1-0.5 cm: 30.9%; RD 0.6-1 cm: 11.4% and RD> 1 cm: 13.2%. It should be noted that in this study, the proportion of patients in whom optimal cytoreduction was achieved, ie without macroscopic disease (R0) and those with residual disease of less than 1 cm (R1), reached 86.8% , a rate well above what was expected from a study that did not use imaging and / or laparoscopic triage. It is also important to note that this excellent rate of optimal cytoreduction was achieved in a high-risk population, in which, about 50% of the patients were over 65 years and with an ASA score of 3-4.

Overall and progression-free survival were as follows: a) RD0: 57 and 24 months; RD 0.1-0.5 cm: 35 and 16 months; RD 0.6-1cm: 29 and 12 months and RD> 1cm: 22 and 12 months, respectively. When comparing the overall survival (OS) between the RDO group (57 months) and the RD > 1 cm group (22 months) the difference was statistically significant ($p < 0.001$). Similarly, when comparing the RD 0.1-0.5 cm group with an OS of 22 months and the RD > 1 cm group, with a 12-month OS, the difference was also statistically valid ($p = 0.008$). By consolidating RD 0.6-1 cm and RD 0.1-0.5 cm groups, and compare it with the RD> 1 cm group, the difference in OS was statistically significant ($p = 0.006$). With these findings, the current paradigm of complete cytoreduction (R0) is consolidated as the most relevant perioperative factor in survival, but as the authors state, when this is not feasible, to achieve cytoreduction with residual disease of less than 1 cm (R1), continues to have excellent therapeutic value.

During the study period the rate of RD0 increased from 32.7% in the period 2003-2006 to 54.3% between 2007 and 2011, with a decrease in the RD > 1cm rate from 20.3% to 7.3%, in the same periods ($p < 0.001$). This was accompanied by an increase in the performance of procedures of high surgical complexity from 24.3% for the period 2003-2006, to 41.2% between 2007-2011 ($p < 0.001$). However, this trend was not associated with an increase in the profile of complications between the two periods studied. The difference in postoperative morbidity was 18.8% (2003-2006) versus 20.8% (2007-2011), not reaching a significant statistical difference ($p = 0.60$). On the other hand, 30-day mortality declined from 4.5% to 1.2% ($p = 0.035$), while mortality at 90 days decreased from 9.5% to 6.1% ($p = 0 .18$), for the period 2003-2011 and 2007-2011, respectively.

Comparing the overall survival achieved in this study, in patients with primary cytoreduction R1 (38 months), with the homologous group of EORTC (29 months) and CHORUS (23 months), and with the exceptionally low postoperative mortality rate at 30 and 90 days of the *Mayo Clinic*

experience, reflects not only the high level of experience and performance of this center, but also the interesting evolution of its results in just eight years.

Surely this experience will be very difficult to reproduce in centers without the experience, high technology and excellent levels of care of *Mayo Clinic.* Results that surprise us again and that set the standard of attention at a dizzying height, something that the *Mayo* has also accustomed us.

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References:

1. Wallace S et al. Efforts at maximal cytoreduction improve survival in ovarian cancer patients, even when complete gross resection is not feasible. Gynecol Oncol 2017; 145: 21–26.

2. Vergote I, Trope CG, Amant F, Kristensen GB, Ehlen T, Johnson N, et al. Neoadjuvant chemotherapy or primary surgery in stage IIIC or IV ovarian cancer. New Engl J Med. 2010;363:943-953.

3. Kehoe S, 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 (9990: 249–257.