COMPARISON BETWEEN LAPAROSCOPY AND LAPAROTOMY IN THE SURGICAL RE-STAGING OF GRANULOSA CELL TUMORS OF THE OVARY

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Ovarian granulosa cell tumors (OGCTs) account for approximately 70% of malignant sex cord stromal tumors and represent 3% to 5% of all ovarian neoplasms. The 5-year survival rate among women with stage I disease ranges from 92-100%. The staging system for OGCT is generally adopted from that used for epithelial ovarian cancer as originally defined by the International Federation of Obstetrics and Gynecology (FIGO).

Aim: Surgical procedures for these neoplasms are often performed by general gynaecologist during an emergency intervention for acute abdomen associated to hemoperitoneum. For this reason many of these patients do not receive an adequate surgical staging. Furthermore, after initial operation and histological results, these patients are referred to specialized center for further evaluation and possible surgical restaging. **The aim of the present study is to evaluate the role of laparoscopic (LPS) and laparotomic (LPT) staging in patients with incompletely surgically staged ovarian granulosa cell tumors (OGCTs).**

Method: We reviewed retrospectively the medical records of patients pathologically diagnosed with OGCTs treated at the Division of Gynaecologic Oncology, European Institute of Oncology in Milan between March 1994 and March 2017. Demographic, clinical, pathological, surgical, and follow-up data were extracted from the medical records.

Chart 1. We found from our database a total of 170 patients with a median age of 49 years (range, 15-84 years). **Chart 2.** 84 patients (49,5%) received standard primary surgical staging that included a hysterectomy; 86 patients (50,5%) underwent conservative surgery.

Results: We completed the surgical management after a delay mean time from the diagnosis of 3.5 months (range 1-8 months) with:

- peritoneal assessment
- infracolic omentectomy
- abdominal/pelvic washings

Retroperitoneal lymph nodes assessment was not considered part of staging procedure. There were no major intraoperative or postoperative complications. **We considered our results in term of laparoscopic treatment (56 patients) and laparotomic treatment (25 patients).**

LAPAROSCOPIC Group. The original clinical International Federation of Gynecology and Obstetrics (FIGO) stage of the LPS-group was IA in 35 patients, IB in 1, IC in 18 and IIC in 2. Among the IA patient's group, 1 were upstaged to IB stage and 3 to IIB respectively (4/35) among patients with IC stage, 1 was upstaged to IIA, 4 to IIB and 1 to IIIC stage (6/18).

Table 2: After second surgery performed by LPS, 10/56 (19%) were upstaged.

Initial Stage	Confermed Stage after second surgery performed by LPS	Final Stage after second surgery performed by LPS
IA (35 pts)	31 IA	1 IB, 3 IIB
IB (1 pts)	1 IB	-
IC (18 pts)	12 IC	1 IIA, 4 IIB, 1 IIIC
IIC (2 pts)	2 IIC	-

Table 1. Changes in restaged patients. Adjuvant chemotherapy was given to the upstaged (IIB-IIIC) patients.

Initial Stage	Confermed Stage (%)	Final Stage (%)	Adjuvant Treatment
IA (45 pts)	38 IA (84)	1 IB, 4 IIB, 2 IIIB (16)	CBDCA + PTX (6 cycles)
IB (1 pts)	1 IB (100)	-	CBDCA + PTX (6 cycles)
IC (30 pts)	20 IC (67)	2 IIA, 6 IIB, 1 IIIB, 1 IIIC (33)	CBDCA + PTX (6 cycles)
IIC (2 pts)	2 IIC (100)	-	CBDCA + PTX (6 cycles)
IIIA (1 pts)	1 IIIA (100)	-	CBDCA + PTX (6 cycles)
IIIB (1 pts)	1 IIIB (100)	-	CBDCA + PTX (6 cycles)
IIIC (1 pts)	1 IIIC (100)	-	CBDCA + PTX (6 cycles)

LAPAROTOMIC Group. The original clinical International Federation of Gynecology and Obstetrics (FIGO) stage of the LPT-group was IA in 11 patients, IC in 11, IIIA in 1, IIIB in 1 and IIIC in 1 patient. Among the IA patient's group, 1 were upstaged to IIB stage and 2 to IIIB (3/11), respectively among patients with IC stage, 1 was upstaged to IIA, 2 to IIB and 1 to IIIB stage (4/11).

Table 3: After second surgery performed by LPT, 7/25 (28%) were upstaged

Initial Stage	Confermed Stage after second surgery performed by LPT	Final Stage after second surgery performed by LPT
IA (11 pts)	8 pts	1 IIB, 2 IIIB
IC (11 pts)	7 pts	1 IIA, 2 IIB, 1 IIIB
IIIA (1 pts)	1 IIIA	-
IIIB (1 pts)	1 IIIB	-
IIIC (1 pts)	1 IIIC	-

Conclusions

- Complete surgical staging becomes mandatory in granulosa cell tumors, in fact several studies have demonstrated that FIGO stage is the most important prognostic factor in that disease.
- According to our series laparoscopic restaging compared to open approach seems to be a feasible and efficient technique to complete surgical staging in patients with GCTs incorrectly staged.
- Surgical restaging seems to have a role in the management of OGCT, mainly in initial stage IC group of patients.