



Gynecologic Oncologist as surgical consultant: Intraoperative consultations during general gynecologic surgery as an important focus of gynecologic oncology training



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HIGHLIGHTS

- Gyn Oncologists play a key role as intraoperative consultants for Gynecologists.
- Intraoperative consultations during complex cases can reduce complications.
- Fellowship training must include skills for effective intraoperative consultation.

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ABSTRACT

Objective. The aim of this study is to explore the previously unexamined role of the Gynecologic Oncologist as an intraoperative consultant during general gynecologic surgery.

Methods. Demographic and clinical data were collected on 98 major gynecologic surgeries that included both a general Gynecologist and a Gynecologic Oncologist between October 2010 and August 2014. Data were analyzed using XLSTAT-Pro2014.2.02.

Results. Of 794 major gynecologic surgeries, 98 (12.3%) cases that involved an intraoperative consultation were identified. There were 36 (37%) planned consults and 62 (63%) unplanned consults. Significantly more planned consults were during laparoscopy (100% v 58%; $p < 0.01$) and significantly more unplanned consults were during laparotomy (42% v 0%; $p < 0.01$). The majority of planned consults were for surgical training (86%) and the most common reasons for unplanned consults were adhesions (40%), bowel injury (19%), inability to identify ureter (19%), and cancer (11%). The most common interventions performed during unplanned consults were identification of anatomy (55%), lysis of adhesions (42%), and retroperitoneal dissection (27%). Average surgeon years in practice were significantly lower for unplanned consults (9 v 15; $p < 0.01$). A total of 25 major adverse events occurred in 15 cases with the majority occurring in cases with unplanned consults (23% v 3%; $p < 0.01$). After controlling for laparotomy, unplanned consultation was not significantly associated with major events (OR = 6.67, 95%CI 0.69–64.39; $p = 0.10$).

Conclusions. Gynecologic Oncologists play a pivotal role in the support of generalist colleagues during pelvic surgery. In this series, Gynecologic Oncologists were consulted frequently for complex major benign surgeries. It is important to incorporate the skills required of an intraoperative consultant into Gynecologic Oncology fellowship training.

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Introduction

Through fellowship training and practice, Gynecologic Oncologists develop expertise in all aspects of care relating to patients undergoing complex pelvic surgery for gynecologic malignancy. This expertise in preoperative, intraoperative, and postoperative management is directly transferrable to patients with benign gynecologic conditions. Though fellowship training and clinical practice primarily focus on the management

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of gynecologic cancer, the role of a Gynecologic Oncologist often extends beyond the treatment of gynecologic cancer.

The role of Gynecologic Oncologists as clinical advisors to general Gynecologic colleagues has been described in the literature [1]. In 1999, Muntz *et al.* evaluated the nature and frequency of “curbside” consultations, which the authors defined as informal requests for clinical advice excluding new referrals or calls concerning mutual patients [1]. In the author’s review of 333 “curbside” Gynecologic Oncology consultations over a two-year period, 81 percent of consults came from general Obstetrician–Gynecologists and 71 percent of the questions that they presented concerned nonmalignant clinical problems [1].

Similarly, the role of a Gynecologic Oncologist as a surgical resource to Obstetrical colleagues during challenging cases of peripartum hemorrhage has also been described in the literature [2]. In one series of hysterectomies for peripartum hemorrhage described by Tadesse *et al.*, Gynecologic Oncologists were involved in 56% of cases [3]. Moreover, in cases of peripartum hemorrhage due to complex pelvic anatomy, pathological placentation, or intra-abdominal catastrophe, a multidisciplinary approach that specifically involves a Gynecologic Oncologist has been recommended [4,5].

By contrast, there is a dearth of literature on the role of Gynecologic Oncologists in general gynecologic surgeries. In this study, we seek to describe the previously unexamined role of Gynecologic Oncologists as intraoperative consultants for both planned and unanticipated surgical support during general gynecologic surgery.

Materials and methods

We retrospectively reviewed the records of 794 consecutive women who underwent gynecologic surgery by a general Gynecologist at a tertiary academic medical center from October 1, 2010 to August 1, 2014. Following Institutional Review Board approval, the operating room scheduling database was queried to identify cases that included both a general Gynecologist and a Gynecologic Oncologist as primary or assistant surgeon. All major gynecologic surgeries, which were defined as oophorectomy, salpingo-oophorectomy, hysterectomy, myomectomy, exploratory laparotomy, and exploratory laparoscopy, were included. All obstetrical cases were excluded.

Medical records for the 98 cases that involved intraoperative consultation by a Gynecologic Oncologist were reviewed and information on patient demographics, medical history, pre-operative diagnosis, and type of surgery performed were collected. Operative reports were reviewed to determine if the consultation was planned or unplanned, the reason for intraoperative consultation, and the intervention performed by the Gynecologic Oncologist during unplanned cases. The primary surgeon was identified and number of years in practice was calculated by subtracting the date of surgery from the date of residency completion. Univariate analysis was performed to determine the factors associated with planned and unplanned consultation using two-sided *t*-tests, chi-square test, and Fisher’s exact test where appropriate. Logistic regression analysis was performed using backwards step-wise selection ($p > 0.15$) to identify factors independently associated with unplanned intraoperative consultation.

Perioperative and postoperative records were reviewed for major adverse events as defined by the American Board of Obstetrics and Gynecology which included: blood loss greater than 2 L, unplanned readmission less than 30 days of discharge, transfusion of greater than 4 units, unplanned transfer to the intensive care unit, unplanned return to the operating room, hospital stay greater than 15 days, development of coagulopathies, vascular, urethral, or neural injuries, and death less than 30 days of surgery [6]. Univariate analysis was performed to determine the factors associated with major adverse events. Logistic regression analysis was performed using backwards step-wise selection ($p > 0.15$) to identify factors independently associated with major

adverse events. Logistic regression results were reported using odds ratios (OR) with 95% confidence intervals (CI). All statistical analyses were performed using XLSTAT-Pro v2014.2.02.

Results

From October of 2010 through August of 2014, a total of 794 major surgeries were performed by the general gynecology service at Massachusetts General Hospital. In the study period, 98 combined operative cases were performed representing 12.3 percent of all major surgeries performed. Of the 98 combined cases identified, 36 (37%) were planned combined cases and 62 (63%) cases represent unplanned intraoperative consults.

Baseline characteristics for the 62 unplanned and the 36 planned cases are described in Table 1. The median patient age was 48 (range 22–84) with no significant difference in mean age between planned and unplanned cases (49 v 49; $p = 0.84$). Similarly, there was no significant difference in body mass index (BMI) between groups (30 v 28; $p = 0.17$).

Of the 62 unplanned intraoperative consultations, 36 (58%) were laparoscopic and 26 (42%) were during laparotomy, whereas all 36 (100%) planned consultations were during laparoscopic surgery ($p < 0.01$). Planned consults were significantly associated with laparoscopic hysterectomy (75% v 24%; $p < 0.01$) and unplanned consults were significantly associated with open hysterectomy (31% v 0%; $p < 0.01$). The other types of laparoscopic and open surgeries were not significantly different between groups. A full list of procedures by group can be found in Table 1. The most common indications for surgery in the unplanned group were complex adnexal mass (32%), fibroids (27%), and endometriosis (13%). The most common indications for surgery in the planned group were fibroids (47%), complex adnexal mass (14%), and pelvic pain (14%). Unplanned consultation was significantly associated with complex adnexal mass (32% v 14%; $p = 0.04$) and planned consultation was significantly associated with fibroids (47% v 27%; $p = 0.05$). A full list of indications for

Table 1
Clinical characteristic for cases requiring intraoperative consultation.

Clinical characteristics	Unplanned (n = 62)	Planned (n = 36)	p-Value
Mean age (years)	49 (22–73)	49 (29–84)	0.84 ^a
Mean BMI (kg/m ²)	30 (18–43)	28 (17–50)	0.17 ^a
<i>Pre-operative diagnosis</i>			
Complex adnexal mass	32% (20)	14% (5)	0.04 ^b
Fibroids	27% (17)	47% (17)	0.05 ^b
Endometriosis	13% (8)	3% (1)	0.15 ^b
Pelvic pain	6% (4)	14% (5)	0.28 ^b
Endometrial pathology	5% (3)	3% (1)	1.00 ^b
Post-op complication	3% (2)	0% (0)	0.53 ^b
Tubo-ovarian abscess	5% (3)	0% (0)	0.30 ^b
Abnormal uterine bleeding	3% (2)	8% (3)	0.35 ^b
Miscellaneous	3% (2)	0% (0)	0.53 ^b
Hereditary cancer syndrome	2% (1)	11% (4)	0.06 ^b
<i>Type of case</i>			
Laparoscopy	58% (36)	100% (36)	<0.01 ^b
Hysterectomy +/- adnexal surgery	24% (15)	75% (25)	<0.01 ^b
Adnexal surgery	29% (18)	19% (7)	0.29 ^b
Myomectomy	2% (1)	6% (2)	0.55 ^b
Diagnostic	3% (2)	0% (0)	0.53 ^b
Laparotomy	42% (26)	0% (0)	<0.01 ^b
Hysterectomy +/- adnexal surgery	31% (19)	0% (0)	<0.01 ^b
Exploratory +/- adnexal surgery	6% (4)	0% (0)	0.29 ^b
Myomectomy	5% (3)	0% (0)	0.30 ^b
<i>Surgeon experience</i>			
Mean years in practice (range)	9 (0–26)	15 (4–19)	<0.01 ^a
> 10 years in practice	45% (28)	92% (33)	<0.01 ^b

^a Two sided *t*-test.

^b Chi-square or Fisher’s exact test when frequency <5.

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