



Intraoperative Management of Adnexal Cystic Masses Suspicious for Malignancy



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Abstract

The majority of adnexal masses are benign in nature. In the rare circumstance that an ovarian mass appears malignant, a thorough evaluation with laboratory and imaging studies should be performed to elucidate the likelihood of malignancy. This will help to determine the need for more comprehensive surgical intervention or involvement of a gynecologic oncologist. However, in the operative suite when adnexal mass appears concerning for malignancy, attempts should be made to prevent rupture and to determine pathology early. When there is a high suspicion for malignancy, it is recommended to have intraoperative or early postoperative consultation with a gynecologic oncologist.

Keywords: Ovarian mass; Ovarian cyst; Intraoperative; Management; Suspicious malignancy

Introduction

The early diagnosis of ovarian cancer continues to evade us and remains the second most common gynecologic malignancy in the United States [1]. Given the lack of effective screening tools, the majority of these cancers are discovered in their advanced stages, making it the most fatal gynecologic cancer in our society.

As practicing general obstetrician-gynecologists, we frequently encounter benign adnexal masses. When a patient presents to the office or the hospital with what appears to be a benign ovarian cyst, we do all we can to rule out its malignant counterpart. Thorough histories are obtained, physical examinations are performed, laboratory values are investigated, and imaging tests are reviewed. These steps are all focused toward filtering out a malignant process. From an extensive evaluation, we reassure ourselves of the likely benign etiology of our patients' symptomatic adnexal mass before taking them to surgery for a cystectomy or adnexectomy. Unfortunately, we do not detect them all, as one study found 0.4% of preoperatively diagnosed benign cysts were later confirmed to be malignancies [2]. After appropriate modern preoperative screening, another study described the risk of an unexpected malignancy to be between 0.9 to 13% [3]. Others report a range as wide as 0.38 to 18.67% malignant likelihood among ovarian masses [4].

It is those rare instances in which a previously surmised benign ovarian cyst now looks questionably cancerous, when exposed to the naked eye or the unflattering camera lens, in the operating room. So what do we do, or more appropriately, what should we do as generalists when face-to-face in the OR with a suspicious looking adnexal mass?

ACOG Committee Opinion 280 offers an algorithm for triaging adnexal masses. Intraoperatively, the minimum recommendation is to obtain washings and perform a thorough assessment of the peritoneal cavity at the beginning of any operative procedure. If suspicious for a malignancy, obtain additional biopsies or frozen sections and consider a complete cystectomy or oophorectomy [5]. Obtaining an intraoperative frozen section diagnosis will lead to appropriate management of the cyst in 90% of cases [6,7]. Regardless of what samples are collected, all suspected malignancies necessitate immediate referral to a gynecologic oncologist. In a retrospective study of 48 cases involving invasive ovarian cancer, a delay of greater than 17 days in surgical staging resulted in a worse prognosis [8]. If available, a specialist in gynecologic oncology should be consulted intraoperatively for evaluation and appropriate surgical management, preferably during the initial surgery or in the immediate future. A leading and controversial issue is the concern for potential intraoperative ovarian cyst rupture. If incidentally malignant, does it play any role in patient morbidity or mortality?

With the updated 2014 FIGO classification, intraoperative rupture or surgical spillage results in upstaging the cancer from a potentially innocuous stage IA to stage IC1. This could portend a worse prognosis and necessitate more therapeutic interventions, including chemotherapy. This re-classification also suggests cystic rupture to be similar to malignant cells in peritoneal washings and ovarian surface tumor invasion. However, one study suggests that patients assigned to stage IC on the basis of intraoperative tumor rupture alone could represent a minority of early-stage ovarian

cancer. These patients have better survival and recurrence risk profiles than patients assigned to stage IC3 based on other factors, such as washings or malignant cells in as cites [9].

Discordance in the literature exists regarding the relationship between prognosis and intraoperative rupture or spillage. In a study with 519 cases of stage I epithelial ovarian cancer, they found no difference in survival among patients with intraoperative cystic rupture compared to their non-ruptured counterparts. However, they did demonstrate a difference in quality of life as the former group underwent more aggressive therapy consisting of whole abdominal radiotherapy [10]. Another study retrospectively analyzed 53 patients with stage I cancer and found a statistical difference in five-year survival, 56% among the capsular rupture group [11] compared to 78% among the intact capsule group. One study observed a shorter duration of disease-free progression and disease-specific survival. They concluded a worse disease prognosis associated with intraoperative capsule rupture [12].

Despite the conflicting evidence on prognosis and intraoperative cyst rupture, most agree it would be prudent to avoid rupture during ovarian tumor surgery. If intraoperative rupture or spillage occurs, it is essential to irrigate the abdominal cavity thoroughly. Great care should be taken to avoid rupture, puncture, biopsy or morcellation of the cyst or mass. Use of retrieval bags is paramount in safeguarding against spillage. Cyst aspiration can be performed within the bag for easier retrieval through the incision site [13].

There is a higher incidence of cyst rupture in laparoscopy compared to laparotomy [14,15]. This could stem from inaccessibility and difficulty from the presence of adhesions or tumor complexity. It could also depend on the skill and comfort of the surgeon in laparoscopic techniques as well as the availability of appropriate surgical equipment.

Management of an incidental intraoperative finding of ovarian malignancy rests on one main objective-to maintain the best possible prognosis for the patient. Consensus evidence may currently be lacking, but future prospective studies may help to elucidate the role of intraoperative cystic ruptures in patient prognosis. In the meantime, we should aim to collect thorough intraoperative samples to aid in diagnosis, to retrieve the cystic or adnexal mass intact, and to obtain timely consultation from gynecologic oncologists for appropriate staging. With the prepared anticipation that a malignancy may rear its ugly head in the operative setting, a clear systematic approach for diagnosis and early intervention should

be initiated so we may provide our patients with the best possible outcomes.

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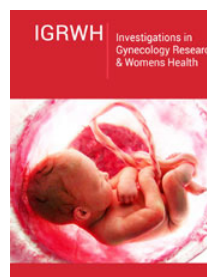
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