

A STUDY ON ADNEXAL MASSES WITH ITS EVALUATION BY RISK OF MALIGNANCY INDEX

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ABSTRACT:

A prospective study was conducted in tertiary care hospital for six months in the gynaecology department. About 102 patients who met the study criteria were enrolled on the study. Most of the patients admitted were in the age group of 41-50 years and abdominal pain was the most common symptom. The most common risk factor is hypothyroidism (67.5%) among patient profiles recorded; uterine fibroid and cyst were the most common adnexal masses. The prevalence of adnexal masses was more in the age group of 31-40 years; many patients were treated with drug therapy. Hysterectomy and salpingectomy were the frequent types of surgery performed in our study. Among 102 patients, seven reported complications, and two were (risk of malignancy index) RMI above 200 scores, which had a positive correlation with the histopathological reports. Benign adnexal masses were most common in younger women. However, patients with malignancy were older and mostly postmenopausal. Age above 50 years, postmenopausal status, and high RMI were significantly associated with malignant adnexal masses.

KEYWORDS: Adnexal mass, Benign, Malignancy, Postmenopausal, and Risk of malignancy index.

INTRODUCTION:

The uterine adnexal consist of ovaries, fallopian tubes and the uterine ligament. The prevalence of adnexal masses is 0.17% to 5.9% in asymptomatic and 7.1% to 12% in symptomatic patients¹. The definition of an abnormal structure in radiological imaging is also quite variable.

These are 3 clinical routes by which an adnexal mass can be detected:

1. Women with symptoms may have an adnexal mass detected as part of their evaluation for those symptoms, either by physical examination or radiological imaging.
2. The mass may be detected as part of a routine health maintenance examination.
3. The mass may be detected during imaging done for another indication².

Most frequently, adnexal masses refer to ovarian masses or cysts; however, Para-tubal cysts, hydrosalpinx, and other non-ovarian masses are also included³. Proper oncological treatment

of patients with adnexal masses depends on appropriate preoperative discrimination between benign and malignant ovarian tumours⁴. Malignant ovarian tumours are associated with the highest mortality rate of all gynaecological cancers⁵. About 60% of women are diagnosed at an advanced stage, which has a 5-year survival as low as 10%. On the other hand, early diagnosis provides a 5-year survival of up to 90%⁶. However, it may be difficult to preoperatively determine the nature of adnexal tumours. No single diagnostic tool (Ultrasonography, Magnetic Resonance Imaging, Computerized Tomography and Radioimmunoscintigraphy) is good enough for this determination. There are suggestions that appropriate malignancy risk estimation could be achieved by RMI index scoring.

Asymptomatic, small, well-characterized adnexal masses are observed with regular pelvic examinations and radiologic evaluations. A surgical approach should be used if growth occurs in these masses and if the patient becomes symptomatic, or if the cyst develops more concerning features, such as solid components. The suspicion of malignancy is increased in prepubescent and post-menopausal women.

Observational studies in women taking higher-dose, “early-generation” oral contraceptive pills suggested a lower incidence of functional and benign epithelial ovarian cysts. Cyst aspiration is contraindicated, especially in post-menopausal patients. In benign cysts, cyst wall removal is necessary to prevent recurrence and aspiration has little therapeutic benefit. In malignancy, cytology only has a sensitivity of 25-82% for the detection of cancer. Spillage of cyst fluid may induce peritoneal seeding of malignancy. Intra-operative cyst rupture is known to decrease overall survival in stage 1 ovarian cancer patients in comparison to intact tumours. Additionally, there are case reports of recurrence of malignancy along the aspiration needle tract⁷.

When an epithelial ovarian malignancy is encountered, a complete staging protocol must be performed. This generally includes complete exploration of the abdomen, hysterectomy, bilateral salpingo-oophorectomy, omentectomy, pelvic and para-aortic lymph node dissections, and biopsies of the under the surface of the right and left diaphragms, and biopsies of the colic gutters followed by a maximal resection of the intra-abdominal tumour⁸. In selected cases involving women with limited, early-stage, low-grade ovarian cancers, a fertility-sparing procedure may be considered⁹. In some cases, resecting portions of the small bowel or colon may be necessary; therefore, preoperative bowel preparation may be warranted, as is a discussion about possible colostomy or other bowel changes.

Among women undergoing minimally invasive resection of adnexal masses, a transvaginal approach for specimen removal is associated with less postoperative pain than a trans-umbilical approach¹⁰. If a mass has features suspicious of malignancy, care should be made to remove the mass intact. During minimally invasive surgery, the mass may be placed in a bag before morcellation or cyst decompression to avoid the potential spread of malignancy. Intra-operative tumour rupture is significantly more common during minimally invasive removal of adnexal masses as compared to an open approach¹¹.

RISK OF MALIGNANCY INDEX (RMI):

- The discrimination between benign and malignant adnexal masses is central to decisions regarding clinical management and surgical planning in such patients.

- The RMI is a reliable tool in differentiating benign from malignant adnexal mass¹².
- The RMI is a combined parameter that is simple, practical and highly sensitive, and more specific¹³.
- RMI is calculated with a simplified regression equation obtained from the product of menopausal status score (M), ultrasonography score (U), and the absolute value of serum CA-125.6
- The most common threshold for the probability of malignancy is greater than 200.
Risk of malignancy index (RMI) = Ultrasound characteristics (U)* Menopausal Status (M)
*Serum CA 125 level.

Where;

Ultrasound characteristics:

- Bilateral lesions
- Evidence of metastases
- Evidence of solid areas
- Multilocular cyst
- Presence of ascites

If none of the above characteristics found U=0, if only one U=1, in case two or more U=3.

Menopausal Status

- If premenopausal, M=1
- If Postmenopausal, M=3

Serum CA 125 level (U per ml).

METHODOLOGY:

Inclusion Criteria:

- Female patients who are diagnosed with adnexal masses.
- Patients who are married and unmarried.
- Patients with USG/CA-125/PAP smear showing evidence of Adnexal masses.
- Patients who can co-operate.
- Patients with any type of Gynaecological Adnexal mass.

Exclusion Criteria:

- Patients with uncontrolled infections.
- Patients with serious conditions and unconsciousness.
- Patients who are unable to cooperate.

RESULTS:

About 102 patients were enrolled as per our study criteria, and the roles of several factors were studied and assessed in the study to help clinicians in decision making. Most of the patients admitted were in the age group of 41-50 years. Among them, abdominal pain was a common symptom. The common risk factor observed was hypothyroidism (67.5%) followed by obesity (10%), infertility (7.5%), infection (7.5%), and history of adnexal mass (7.5%) among patients profiles recorded. Uterine fibroid and cyst were the common adnexal masses, and the prevalence of adnexal masses was more in the 31-40 years age group. About 48.03 %

of the patients were operated on for adnexal masses, while 50% of patients were treated with drugs and 2% with both. Hysterectomy and salpingectomy were the frequent types of surgery performed in our study. About 7 out of 102 patients reported complications like ovarian torsion (57.14%), infertility (28.57%), and rupture (14.28%); two patients reported RMI above 200 scores of 209.64 and 204 which had a positive correlation with the histopathological reports.

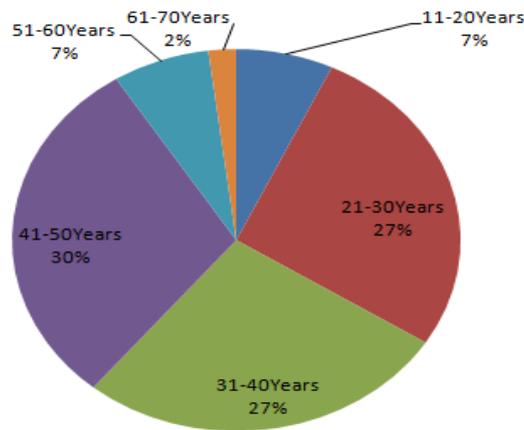


Fig. 1: Age group of patients

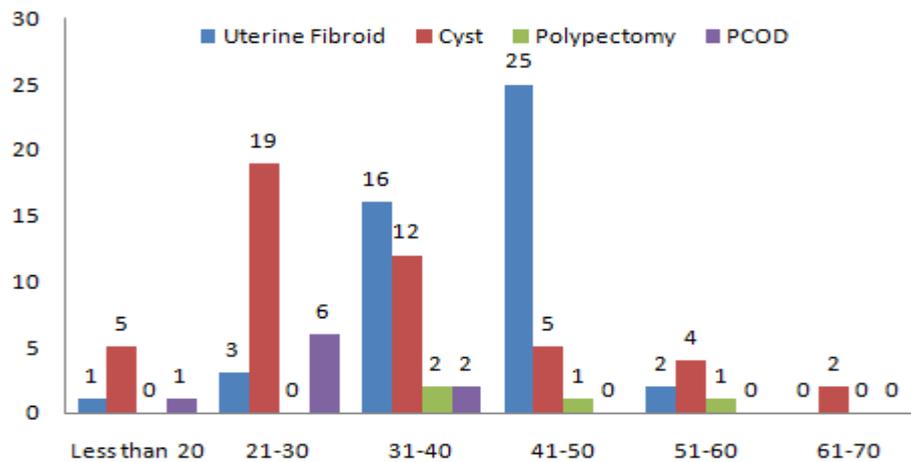


Fig. 2: Patients based on the type of adnexal mass

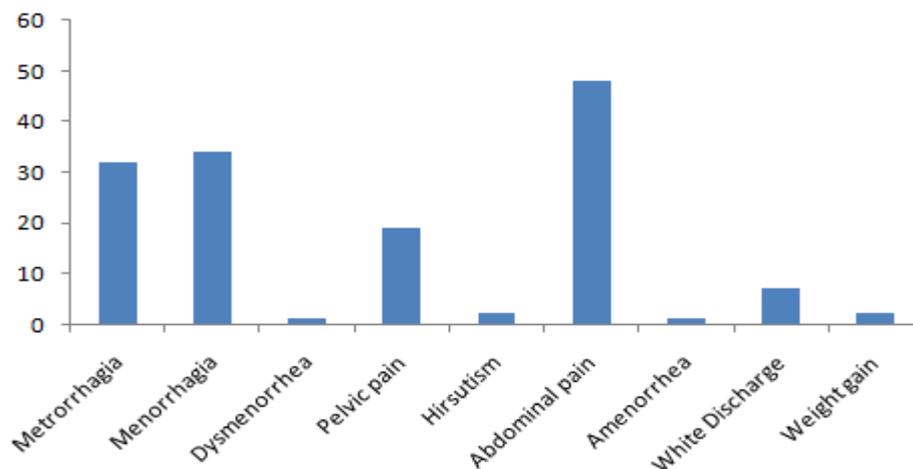


Fig. 3: Patients based on symptoms

Table 1: Distribution of different adnexal masses by age:

Adnexal Mass	Age (Years)						Total
	≤ 20	21-30	31-40	41-50	51-60	61-70	
Uterine Fibroid	1	3	16	25	2	0	47
Cyst	5	19	12	5	4	2	47
Polypectomy	0	0	2	1	1	0	4

Table 2: Distribution of patients based on the type of surgery:

Treatment	No. of Patients
Salpingectomy	23
Polypectomy	3
Myomectomy	1
Hysterectomy	23
Cystectomy	17
Laparoscopy	9
Oophorectomy	15

Table 3: Reported risk of malignancy index (RMI)

Risk of malignancy index		
Less than 25	25-200	More than 200
4.5	25	204
4.5	26	209.64
5.6	35	
12.9	36	
17.7	68	

DISCUSSION:

An adnexal mass is a lump or growth in the tissue adnexal of the uterus which includes ovaries, fallopian tubes and ligaments with signs and symptoms including pelvic pain, metrorrhagia, and dysmenorrhoea. The present study reveals that the prevalence of adnexal mass was seen more in the age group between 41-50 years followed by the age group between 21-30 years. Among 102 patients, 48 patients had abdominal pain, which reveals the presence of a relationship between adnexal mass and abdominal pain¹⁴.

The prevalence of adnexal mass was seen higher with the risk factor hypothyroidism in 27 patients, revealing that hypothyroidism was the greater risk factor to contribute to adnexal mass. The most commonly occurring adnexal masses were uterine fibroids in 47 patients and also cysts in 47 patients in the age group between 31-40 years followed by the 41-50 years age group. About 51 patients were drug therapy and 49 underwent surgery, and very few

patients approached both. The most common type of surgery that is used to treat the patients includes salpingectomy in 23 patients and hysterectomy in 23 patients among enrolled patients. Only 7 patients developed complications such as ovarian torsion and infertility. The patients with RMI greater than 200 were considered highly suspicious of malignancy and underwent surgery by the gynecologic oncologist. Two such patients reported RMI scores of 209.64 and 204, which say that the probability of malignancy is greater with high RMI scores.

CONCLUSION:

Adnexal masses become a source of morbidity and mortality, the most commonly encountered adnexal masses were uterine fibroid and cyst in the age group of 41-50 years and 21-30 years, age groups, respectively. The frequent clinical symptom presented was abdominal pain and the prevalent risk factor was hypothyroidism. Benign adnexal masses were found in younger women; however, patients with malignancy were older and mostly postmenopausal. Age greater than 50 years, postmenopausal status, and high RMI were significantly associated with malignant adnexal masses. RMI and histopathology findings were in positive correlation with malignant adnexal masses. Therefore, it can be concluded that RMI can be used for the evaluation of adnexal mass preoperatively.

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