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Original Research Article

Comparative study of adnexal mass among ultrasonographic findings, perioperative findings and histopathological findings

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ABSTRACT

Background: Adnexal malignancy is a significant diagnostic challenge in gynaecology and is the third most common cancer of the female genital tract after cervical and endometrial cancer. Accurate preoperative characterization of adnexal masses is crucial for appropriate management, surgical planning and patient referral. Ultrasonography is widely used as a first-line imaging modality because of its accessibility and low cost. This study aimed to assess the diagnostic correlation among ultrasonographic, peroperative and histopathological findings in adnexal masses.
Methods: This prospective cross-sectional observational study was conducted at the Gynaecological Oncology Unit of Dhaka Medical College Hospital, Bangladesh, from July 2021 to June 2022. Seventy female patients aged 14-75 years with sonographically detected adnexal masses who underwent surgery were included. Ultrasonographic morphological features were evaluated preoperatively, intraoperative findings were documented and histopathology was used as a reference standard. Data were analyzed using SPSS version 23.0.
Results: The mean age of the participants was 41.6±19.5 years and 65.7% were premenopausal. Ultrasonography classified 64.3% of masses as benign and 35.7% as malignant, whereas histopathology confirmed 68.6% of masses as benign and 31.4% as malignant. Ultrasonography demonstrated a sensitivity of 90.9%, specificity of 89.6% and overall accuracy of 90.0% compared with histopathology. Per-operative assessment showed comparable diagnostic performance.
Conclusions: Ultrasonography is a reliable, sensitive and specific modality for preoperative evaluation of adnexal masses. Its effective use can facilitate early diagnosis, improve clinical decision-making and potentially enhance survival outcomes through timely and appropriate treatment.

Keywords: Adnexal mass, Histopathology, Per-operative findings, Ultrasonography

INTRODUCTION

Adnexal masses, defined as lesions arising from the ovaries, fallopian tubes, or adjacent pelvic structures, constitute a frequent and clinically significant problem in gynaecological practice. Owing to their diverse etiologies and overlapping clinical presentations, adnexal masses often pose a diagnostic challenge, particularly when the organ of origin is not clearly identifiable on initial evaluation.[1] These masses encompass a wide pathological spectrum, ranging from functional or physiological cysts to inflammatory lesions and invasive malignancies. They may be gynaecological or non-gynaecological in origin and can occur across all age groups, from the fetal period to postmenopausal life, with prevalence and risk profiles varying substantially according to age and population characteristics.[1]

The majority of adnexal masses originate from the ovary or fallopian tube; however, lesions may also arise from the broad ligament, uterus, bowel, retroperitoneum, or represent metastatic deposits from distant primary malignancies.[2] Etiologically, adnexal masses are broadly classified as benign or malignant. Benign ovarian lesions commonly include functional cysts, serous or mucinous cystadenomas and mature cystic teratomas. Malignant ovarian tumors represent a smaller but clinically critical subset. Non-ovarian gynaecological causes include ectopic pregnancy, endometrioma, hydrosalpinx, leiomyoma and tubo-ovarian abscess, whereas malignant non-ovarian adnexal lesions may arise from the endometrium or fallopian tube. In addition, a range of non-gynaecological conditions such as appendicitis, pelvic kidney, gastrointestinal malignancies, bladder diverticula and nerve sheath tumors may mimic adnexal pathology.[2]

From an epidemiological perspective, adnexal malignancies rank after carcinoma of the cervix and endometrium among gynecological cancers.[3] Age plays a decisive role in determining the likelihood of malignancy. In pediatric populations, particularly girls younger than nine years, a high proportion of ovarian cysts are malignant, whereas in adolescents, approximately half of adnexal masses are mature cystic teratomas. During the reproductive years, most adnexal masses are benign, with malignancy accounting for approximately 10% of cases and the risk is particularly low in women under 30 years of age. In contrast, postmenopausal women have a relatively higher risk of malignancy, despite a lower overall incidence of adnexal masses.[4] Reported data indicate benign mass prevalence ranging from 0.04% to 1.3% and malignant prevalence from 0.09% to 0.18% in this group. Common benign lesions include paratubal cysts, serous cystadenomas, mature teratomas and endometriomas, while malignant lesions frequently include granulosa cell tumors and primary epithelial ovarian carcinomas.[4]

Clinically, adnexal masses may be symptomatic presenting with pain, abdominal distension, menstrual irregularities, or acute complications or detected incidentally during routine imaging. Management strategies depend on patient age, symptomatology and, critically, the likelihood of malignancy. While selected cases can be managed conservatively with surveillance, many require surgical intervention.[1] Ultrasonography (USG) is widely accepted as the first-line imaging modality for the evaluation of adnexal masses and remains superior to other imaging techniques for initial assessment.[5-7] It is endorsed by the American College of Radiology as the most appropriate investigation for non-acute adnexal pathology.[8,9] Accurate preoperative differentiation between benign and malignant masses facilitates appropriate referral, enables conservative management when feasible and optimizes surgical planning.

The importance of early and accurate diagnosis is underscored by the poor prognosis associated with ovarian malignancy. Although not the most common gynecological cancer, ovarian cancer carries high mortality due to late presentation and frequent recurrence.[10] Five-year survival rates remain below 30% for advanced-stage disease but may exceed 90% when detected at an early stage.[11] Timely identification of malignant features on ultrasonography can therefore substantially influence survival outcomes and cost-effective patient management.[12]

Despite advances in imaging, definitive diagnosis relies on surgical excision and histopathological examination, which remains the gold standard.[13] Per-operative assessment provides valuable information regarding tumor origin, laterality, surface characteristics, presence of ascites, hemoperitoneum and metastatic spread, all of which contribute to staging and management decisions. Histopathology further allows precise tumor classification, particularly for epithelial ovarian cancers, which include serous, mucinous, endometrioid, clear cell and other less common subtypes, each with distinct morphological and biological characteristics.[14]

In this context, correlating ultrasonographic findings with per-operative observations and histopathological results is essential to evaluate diagnostic accuracy and guide clinical decision-making. A comparative approach can identify strengths and limitations of preoperative imaging and help refine management algorithms for patients presenting with adnexal masses.

METHODS

This prospective cross-sectional observational study was conducted at the Gynaecological Oncology Unit, Department of Obstetrics and Gynaecology, Dhaka Medical College Hospital (DMCH), Dhaka, Bangladesh. The study period extended over twelve months, from July 2021 to June 2022. A total of 70 patients were included in the study. The study population comprised female patients aged 14-75 years who were diagnosed with adnexal masses on ultrasonographic evaluation and subsequently planned for surgical management.

Inclusion criteria

Females of all ages who presented with an adnexal mass having ultrasonographic evaluation and were planned for surgical removal, were included in this study.

Exclusion criteria

Pregnancy with an adnexal mass, significant concomitant disease such as chronic heart failure, severe renal and liver failure, and who cannot understand oral or written information were excluded.

Data collection procedure

After enrollment, detailed demographic and clinical information was obtained from each participant through face-to-face interviews using a semi-structured questionnaire. A comprehensive clinical history was recorded, followed by preoperative ultrasonographic evaluation.

Ultrasonography was performed transabdominally for all patients. The adnexal masses were evaluated for morphologic characteristics, including size, laterality, internal architecture, echogenicity, septations, papillary projections, presence of solid components and associated findings such as ascites. Ultrasonographic criteria suggestive of malignancy included bilateral involvement, complex echogenicity with irregular margins, papillary projections, solid areas and ascites.

The IOTA ADNEX model was applied in accordance with the practical guidelines described by Van Calster et al. The model incorporated three clinical predictors (age, serum CA-125 level and type of referral center) and six ultrasound predictors (maximum lesion diameter, proportion of solid tissue, number of papillary projections, number of cysts locules, presence of acoustic shadows and presence of ascites). The calculated risk was expressed as relative risk (RR), categorizing masses into benign, borderline, stage I, stage II–IV, or secondary metastatic tumors. A malignancy risk cutoff of ≥10% was used and borderline tumors were included in the malignant group for analytical purposes.

During surgery, detailed per-operative findings were recorded, including tumor size, surface characteristics, capsular integrity, presence of solid areas, nodularity, cyst contents, laterality, ascites and evidence of metastasis. Surgically excised specimens were preserved in 10% formalin. Three to five representative tissue sections (3–5 mm thickness) were processed for histopathological examination. Histological assessment focused on growth patterns, epithelial lining, cellular atypia, stromal invasion and degree of pleomorphism, with stromal invasion and marked cellular atypia considered diagnostic of malignancy.

Ethical considerations

Ethical approval for the study was obtained from the Ethical Review Committee of Dhaka Medical College Hospital before study initiation. Participation was entirely voluntary. All participants received a clear explanation of the study objectives, procedures, potential benefits and risks in Bangla or the local language. Written informed consent was obtained from each participant before enrollment. Participants were informed of their right to refuse participation or withdraw from the study at any stage without any effect on their standard clinical care. Confidentiality of patient information was strictly maintained and all data were anonymized and used solely for research purposes.

Statistical analysis

Data were entered, cleaned and analyzed using SPSS version 23.0. Continuous variables were summarized using mean and standard deviation, while categorical variables were expressed as frequencies and percentages. Associations between ultrasonographic, per-operative and histopathological findings were analyzed using the Chi-square test or Fisher's exact test, as appropriate. Diagnostic performance indices, including sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV), were calculated. Receiver operating characteristic (ROC) curve analysis was performed to assess the performance of the IOTA ADNEX model. All statistical tests were conducted at a 95% confidence interval and a p value of <0.05 was considered statistically significant.

RESULTS

Table 1 shows that 16(22.9%) patients were aged 21-30 years. The mean age was found 41.6±19.5 years with range from 14 to 75 years. Regarding parity 32 (45.7%) patients were found multiparous, 6 (8.6%) primiparous, 14 (20%) nulliparous, 18 (25.7%) unmarried. Regarding menstrual status 46 (65.7%) were premenopausal and 24 (34.3%) were post-menopausal.

Table 1: Distribution of the study patient by socio-demographic characteristics (n=70).

Demographic characteristics		Frequency	Percentage
Age (years)	≤ 20	14	20
	21-30	16	22.9
	31-40	10	14.3
	41-50	8	11.4
	51-60	8	11.4
	>60	14	20
	Mean±SD	41.6±19.5	Range (min-max) 14-75
Parity	Nulliparous	14	20
	Primiparous	6	8.6
	Multiparous	32	45.7
	Unmarried	18	25.7
Menstrual history	Pre-menopausal	46	65.70
	Post-menopausal	24	34.30

Regarding USG findings of adnexal masses, more than half (54.3%) patients had mixed consistency (solid and cystic). Thick septum was found in 12 (17.1%), thin 20 (28.6%) and no septum was 38 (54.3%). Papillary projection was found in 16 (22.9%). Majority 60 (85.7%) patients were diagnosed as adnexal masses. 2 (2.9%) had

lymph node involvement. Majority 54 (75.13%) patients had unilateral mass and 10 (14.3%) patients had ascites.

The risk assessment using the IOTA ADNEX model is 29.60% malignant, 70.39% benign, 6.97% borderline, 4.96% stage I, 15.74% stage II-IV and 2.27% metastatic.

Table 2: Distribution of characteristics of tumor by USG (subjective assessment) (n=70).

USG findings		Frequency	Percentage
Consis-tency	Solid	6	8.57
	Cystic	26	37.1
	Mixed	38	54.3
Septum	Thick (>3 cm)	12	17.1
	Thin (<3 cm)	20	28.6
	No septum	38	54.3
Papillary projection	Present	16	22.9
	Absent	54	77.1
Origin of mass	Uterine mass	4	5.7
	Adnexal masses	60	85.7
	Dual pathology	2	2.9
	Indeterminate	4	5.7
Lymph node	Involved	2	2.9
	Not involved	68	97.1
Laterality	Right	30	42.85
	Left	24	34.28
	Bilateral	12	17.14
	Not identified	4	5.71
Ascites	Present	10	14.3
	Absent	60	85.7

Table 3: Risk assessment using the IOTA ADNEX model in the study groups.

	Mean (±SD)	Range (min-max) %
Malignant	29.60 (±29.57)	1-99.20
Benign tumor	70.39 (±29.57)	0.80-99.0
Borderline	6.97 (±6.16)	0.60-24.0
Stage I	4.96 (±4.34)	0.30-17.10
Stage II-IV	15.74 (±24.37)	0.0-93.60
Metastatic	2.27 (±3.07)	0-0.16.50

Table 4 shows that sensitivity of USG vs histopathology findings was 90.9%, specifically 89.6%, accuracy 90.0%, positive and negative predictive values were 80.0% and 95.6% respectively. Sensitivity of per-operative vs histopathology findings was 90.9%, specifically 91.7%, accurate 91.4%, positive and negative predictive values were 83.3% and 95.7% respectively.

Regarding per-operative findings, majority 36 (51.42%) patients had cystic consistency, 60 (85.7%) had adnexal masses, 4 (5.7%) patients had lymph node involvement, 55 (78.57%) had unilateral mass, 12 (17.1%) had ascites, 8 (11.4%) had peritoneum involved, 6 (8.6%) had omentum involvement and 8 (11.4%) were other organ involved. Regarding histological diagnosis of adnexal mass 48 (68.6%) benign, borderline 4 (5.7%) and, 18 (25.7%) malignant.

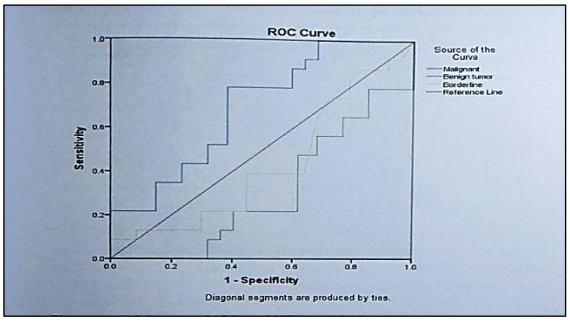

Figure 1: ROC Curve of IOTA Adnex model showing optimal sensitivity and specificity to determine the cut off value of malignant tumor.

Table 4: Validity of USG (subjective assessment) and per-operative findings for evaluation of malignant adnexal mass using histopathology as gold standard.

Test parameter	USG	Per-operative
Sensitivity	90.9	90.9
Specificity	89.6	91.7
Accuracy	90	91.4
Positive predictive value	80	83.3
Negative predictive value	95.6	95.7

Table 5: Distribution of characteristics of tumor by per-operative findings (n=70).

Per-operative findings		Frequency	Percentage
Consis-tency	Solid	8	11.43
	Cystic	36	51.43
	Mixed	26	37.14
Origin of mass	Uterine mass	6	8.6
	Adnexal masses	60	85.7
	Indeterminate	4	5.7
Lymph node	Involved	4	5.7
	Not involved	66	94.3
Laterality	Right	22	31.42
	Left	33	47.14
	Bilateral	12	17.1
	Not identified	3	4.28
Ascites	Present	12	17.1
	Absent	58	82.9
Peritoneum	Involved	8	11.4
	Not involved	62	88.6
Omentum	Involved	6	8.6
	Not involved	64	91.4
Another organ involved	Involved	8	11.4
	Not involved	62	88.6

Table 6 shows that serous benign was found in 6 (8.6%), borderline 4 (5.7%) and malignant 8 (11.4%). Benign mucinous was 16 (22.9%), malignant 4(5.7%). Endometrioid was 1 (1.4%) and clear cell was 1 (1.4%). In sex cord stromal tumor, Thecoma-fibroma was 1 (1.4%). Among germ cell tumor, dermoid cyst was 6 (8.6%), immature teratoma 1 (1.4%), dysgerminoma 2 (2.9%) and mixed germ cell tumor was 2 (2.9%). Neuro-endocrine tumour was found 1 (1.4%), metastasis was 2 (2.9%), leiomyoma was 2 (2.9%). In non-neoplastic ovarian lesion, endometriosis was 12 (17.1%) and inflammatory was 2 (2.9%).

Table 7 highlights the concordance and slight variations in classification among the preoperative imaging (USG), intraoperative assessment and the definitive pathological result. The Histopathology diagnosis shows the lowest count for malignant cases (22) and the highest count for benign cases (48).

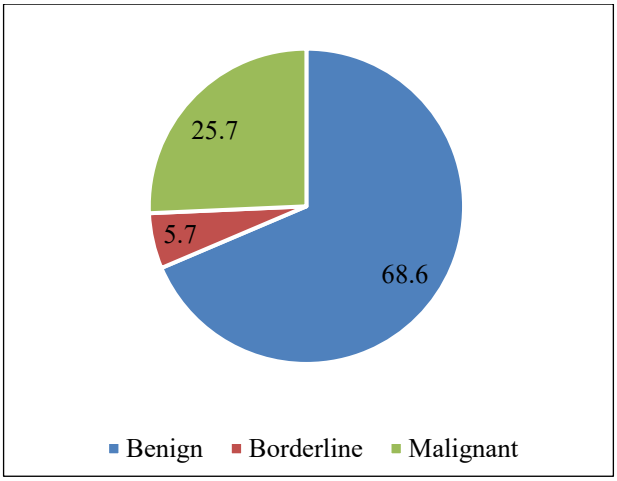

Figure 2: Distribution of the study patient by histopathological diagnosis.

Table 6: Distribution of the adnexal mass by histopathological type (n=70).

Histological type	Nature of tumor	Types	N (%)
Surface epithelial tumors	Serous	Benign	6 (8.6)
		Borderline	4 (5.7)
		Malignant	8 (11.4)
	Mucinous	Benign	16 (22.9)
	Mucinous	Malignant	4 (5.7)
	Endometrioid	Malignant	1 (1.4)
	Clear cell tumor	Malignant	1 (1.4)
Sex cord stromal tumor	Thecoma-fibroma	Benign	1 (1.4)
Germ cell tumor	Dermoid cyst	Benign	6 (8.6)
	Immature teratoma	Malignant	1 (1.4)
	Dysgerminoma	Malignant	2 (2.9)
	Mixed germ cell tumor	Malignant	2 (2.9)
Neuro-endocrine tumor	Neuro-endocrine carcinoma	Malignant	1 (1.4)
Metastatic tumour	Metastatic adenocarcinoma	Malignant	2 (2.9)
Non-ovarian lesion	Leiomyoma	Benign	2 (2.9)
Non-neoplastic ovarian lesion	Endometriosis	Benign	12 (17.1)
	Inflammatory	Benign	2 (2.9)

Table 7: Nature of tumor diagnosed by different methods (n=70).

	USG (subjective assessment)	Per-operative diagnosis	Histopathology diagnosis
Malignant	25	24	22
Benign	45	46	48
Total	**70**		

DISCUSSION

The present study evaluated the clinicodemographic profile of patients with adnexal masses and examined the concordance among ultrasonographic, per-operative and histopathological findings. The mean age of presentation in this cohort was 41.6±19.5 years, with an age range of 14-75 years and the highest proportion of patients belonged to the 21-30-year age group. This age distribution reflects the broad spectrum of adnexal pathology encountered across reproductive and postmenopausal periods. Roshed et al reported a comparatively lower mean age of 30±5.23 years, although they similarly observed peak incidence within the reproductive age group, particularly between 21 and 40 years.[15] Comparable age trends have also been reported by Subash et al, Acharya et al, Dasgupta et al and Sharma et al, all of whom noted a mean age around the early forties

and a preponderance of cases in reproductive-age women.[16-19] These similarities underscore the hormonal and functional influences underlying adnexal pathology during active reproductive years.

With respect to parity and marital status, the present study demonstrated a higher frequency of adnexal masses among multiparous women, followed by nulliparous and primiparous women, while approximately one-quarter of patients were unmarried. Dasgupta et al reported a significantly higher proportion of multiparous women (76.3%) and a smaller proportion of nulliparous women (8.5%), indicating some variation in parity distribution across populations.[18] Yashi et al and Abbasi et al similarly observed a predominance of pelvic masses among multiparous women.[20,21] Prabha et al further suggested an association between multiparity and a higher incidence of pelvic masses, including malignancies.[22] Differences in parity distribution may reflect sociocultural factors, referral patterns and underlying population characteristics.

In terms of menstrual status, two-thirds of patients in the present study were premenopausal, while one-third were postmenopausal. This distribution closely parallels findings reported by Dasgupta et al and Sharma et al, both of whom noted that the majority of adnexal masses occurred in premenopausal women.[18,19] Although adnexal masses are more frequently encountered in reproductive-age women, the relative risk of malignancy increases after menopause, emphasizing the importance of vigilant evaluation in older patients.

Ultrasonographic assessment revealed that mixed solid-cystic morphology was the most common finding, followed by purely cystic lesions. More than half of the masses lacked septations, while papillary projections and thick septa features commonly associated with malignancy were present in a substantial minority. Ascites was detected in 14.3% of cases. These sonographic patterns are consistent with those described by Yashi et al, who reported mixed echogenicity in 54.5% of cases and by Dasgupta et al., who identified nearly half of the masses as complex on ultrasound.[18,20] The predominance of unilateral masses in the present study is also in agreement with previous reports.[18]

Based on ultrasonographic interpretation, 64.3% of adnexal masses were categorized as benign and 35.7% as malignant. Dasgupta et al reported nearly identical proportions of benign and malignant lesions on ultrasound.[18] Earlier classical studies by Bennington et al and Aure and Hoeg demonstrated that benign adnexal masses are substantially more common than malignant ones, typically in an 80:20 ratio.[23,24] Roshed et al, however, reported a lower proportion of malignant cases, which may reflect differences in patient selection, imaging criteria, or operator expertise.[15] Such variability highlights the inherent subjectivity of sonographic assessment and the influence of technical factors, including the use of transvaginal probes and Doppler evaluation, as noted by Sharma et al.[19]

Per-operative assessment in the present study suggested benign pathology in 65.7% of cases and malignancy in 34.3%. Histopathological examination, however, confirmed benign lesions in 68.6% and malignant lesions in 31.4%, reaffirming histopathology as the diagnostic gold standard. Tripathi et al reported a higher concordance between surgical impression and histopathology, with 85% of cases ultimately confirmed as benign.[13] Roshed et al also observed higher proportions of benign lesions on histopathology, though the relative distribution of malignant cases varied.[15] Differences across studies may be attributable to institutional referral bias, inclusion criteria and sample size.

Regarding histopathological patterns, surface epithelial tumors constituted the largest category in the present study, with mucinous cystadenomas being the most common benign epithelial tumors and serous carcinomas representing a major malignant subtype. Germ cell tumors, particularly dermoid cysts, were also frequently encountered. These findings are consistent with those of Subash et al and Dasgupta et al, who similarly reported epithelial tumors as the predominant group and dermoid cysts as the most common benign germ cell tumors.[16,18] Several other studies have likewise identified serous cystadenoma as the most prevalent ovarian tumor overall.[25-27]

Diagnostic performance analysis demonstrated high sensitivity (90.9%), specificity (89.6%) and overall accuracy (90.0%) of ultrasonography when compared with histopathology. These values are comparable to those reported by Roshed et al and align with pooled estimates from large meta-analyses, including that of Myers et al, which documented ultrasound sensitivity ranging from 86% to 91%.[15,28] Subash et al and Dasgupta et al reported slightly lower sensitivities but similarly high specificities.[16,18] The observed false-positive and false-negative cases in the present study echo findings from other authors, emphasizing the diagnostic overlap between certain benign and malignant lesions, particularly endometriomas and mature teratomas.[15,19]

Overall, the findings of this study reinforce the critical role of ultrasonography as a first-line diagnostic tool in the evaluation of adnexal masses, while underscoring the complementary value of per-operative assessment and the definitive role of histopathology. A comparative, multimodal approach enhances diagnostic accuracy and facilitates appropriate clinical management.

This study has few limitations. This study was limited by its single-center and cross-sectional design, with a small sample size which may limit the generalizability of the findings. Future multicenter studies with larger samples are needed to validate the findings.

CONCLUSION

Ultrasonography is a sensitive and specific modality for preoperative diagnosis of adnexal masses. The survival of women with adnexal malignancy can be improved by early detection using this low-cost imaging modality.

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REFERENCES

1. Dotlić J, Terzić M, Likić I, Atanacković J, Lađević N. Evaluation of adnexal masses: correlation between clinical, ultrasound and histopathological findings. Vojnosanitetski Pregled. 2011;68(10):861-6.
2. Biggs WS, Marks ST. Diagnosis and management of adnexal masses. Am Fam Physi. 2016;93(8):676-81.
3. Roshed MM, Akhter MD, Hossain SM. A comparative study of nature of adnexal masses by ultrasonography and histopathology. Bangl Medi J Khulna. 2018;51(1-2):7-11.
4. Rauh-Hain JA, Melamed A, Buskwofie A, Schorge JO. Adnexal mass in the postmenopausal patient. Clin Obstetr Gynecol. 2015;58(1):53-65.
5. Vázquez-Manjarrez SE, Rico-Rodriguez OC, Guzman-Martinez N, Espinoza-Cruz V, Lara-Nuñez D. Imaging and diagnostic approach of the adnexal mass: what the oncologist should know. Chin Clin Oncol. 2020;9(5):69.
6. Kaijser J, Bourne T, Valentin L, Sayasneh A, Van Holsbeke C, Vergote I, et al. Improving strategies for diagnosing ovarian cancer: a summary of the International Ovarian Tumor Analysis (IOTA) studies. Ultra Obstetr Gynecol. 2013;41(1):9-20.
7. Basha MA, Refaat R, Ibrahim SA, Madkour NM, Awad AM, Mohamed EM, et al. Gynecology Imaging Reporting and Data System (GI-RADS): diagnostic performance and inter-reviewer agreement. Europ Radiol. 2019;29(11):5981-90.
8. Sirunyan AM, Tumasyan A, Adam W, Ambrogi F, Asilar E, Bergauer T, et al. Measurement of electroweak production of a W boson in association with two jets in proton-proton collisions at s= 13 Te. Europ Phy J C. 2020;80(1):43.
9. Atri M, Alabousi A, Reinhold C, Akin EA, Benson CB, Bhosale PR, et al. ACR Appropriateness Criteria® clinically suspected adnexal mass, no acute symptoms. J Am Coll Radiol. 2019;16(5):S77-93.
10. Torre LA, Trabert B, DeSantis CE, Miller KD, Samimi G, Runowicz CD, et al. Ovarian cancer statistics, 2018. CA: Cancer J Clin. 2018;68(4):284-96.
11. Cancer Stat Facts: Ovarian Cancer. Available at: https://seer.cancer.gov/statfacts/html/ovary.html. Accessed 01 December, 2025.
12. Jeong SY, Park BK, Lee YY, Kim TJ. Validation of IOTA-ADNEX model in discriminating characteristics of adnexal masses: a comparison with subjective assessment. J Clin Medi. 2020;9(6):2010.
13. Tripathi U, Munda G. Study of correlation of ultrasonography with surgical evaluation of adnexal masses: a prospective study. Int J Reproduct Contracept Obstetr Gynecol. 2018;7(10):4218-23.
14. Berek JS, Renz M, Friedlander ML, Bast Jr RC. Epithelial ovarian, fallopian tube and peritoneal cancer. Holland-Frei Cancer Medi. 2016:1-23.
15. Roshed MM, Akhter MD, Hossain SM. A comparative study of nature of adnexal masses by ultrasonography and histopathology. Bangl Med J Khulna. 2018;51(1-2):7-11.
16. Subash KC, Shrestha A, Khadka S, Poudel R. Role of ultrasound in diagnosis and differentiation of benign and malignant ovarian mass: A Hospital based study in Western Nepal. Asian J Medi Sci. 2019;10(5):86-9.
17. Acharya M, Kumar P, Shrestha BB, Shrestha S, Amatya R, Chhetri PB. Evaluation of adnexal masses-correlation of clinical, sonological and histological findings in adnexal masses. Nepal Medi Coll J. 2020;22(4):199-202.
18. Dasgupta S, Mangal S, Naskar K. Evaluation of adnexal masses–correlation of clinical and radiologic features with histopathologic findings: an observational study in a tertiary care center of Eastern India. BBRJ. 2021;5(1):21-6.
19. Sharma A, Lokwani MS, Lokwani S. Correlation between ultrasound features and histopathological findings in adnexal masses-a study in a tertiary care center in central India. 2019.
20. Yashi SS. Correlation of ultrasound findings with histopathology of pelvic masses in a tertiary care hospital. Int J Health Sci Res. 2019;9(1):46-52.
21. Abbasi RM, Rizwan N, Shaikh Z. Pattern of pelvic mass among women attending a Gynaecology department of University hospital in Sindh. J Isra Med. 2009;1(2):44-8.
22. Prabha T, Goyal S, Mishra HK, Aggarwal A. Role of MRI in evaluation of female pelvic masses in comparison to ultrasonography. J Evolut Medi Dent Sci. 2014;3(59):13330-34.
23. Aure JC, Høeg K, Kolstad P. Clinical and histologic studies of ovarian carcinoma: long-term follow-up of 990 cases. Obstetr Gynecol. 1971;37(1):1-9.
24. Bennington JL, Ferguson BR, Haber SL. Incidence and relative frequency of benign and malignant ovarian neoplasms. Obstetr Gynecol. 1968;32(5):627-32.
25. Prakash A, Chinthakindi S, Duraiswami R, Indira V. Histopathological study of ovarian lesions in a tertiary care center in Hyderabad, India: a retrospective five-year study. Int J Adv Med. 2017;4(3):745.
26. Fatima R, Sandhya M, Sowmya TS. Study of histomorphological pattern of ovarian neoplastic and non-neoplastic lesions. Int J Res Med Sci. 2017;5(5):2095-8.
27. Patel AS, Patel JM, Shah KJ. Ovarian tumors-Incidence and histopathological spectrum in tertiary care center, Valsad. IAIM. 2018;5(2):84-93.

28. Myers ER, Bastian LA, Havrilesky LJ, Kulasingam SL, Terplan MS, Cline KE, et al. Management of adnexal mass. Evidence Report/Technology Assessment. 2006;1(130):1-45.

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