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Original Article

Comparison Between Ultrasonographic Findings & Laparoscopic Findings Of Adnexal Masses

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ABSTRACT

Introduction: *The laparoscopic approach is effective and safe for managing patients with adnexal masses. Malignancies can be diagnosed accurately, converted to laparotomy, and staged appropriately. On the other hand, pelvic ultrasonography is generally used as part of routine gynecologic checkups, resulting in the diagnosis of adnexal masses.* ***Aim of the study:*** *The study aims to determine the comparison between ultrasonography & laparoscopic findings among patients attending tertiary level Hospitals in Bangladesh.* ***Methods:*** *A comparative study was carried out in the Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University, Dhaka from March 2016 to August 2016. A total of 50 patients were enrolled in this study following the inclusive criteria. Data were collected using the predesigned semi-structured questionnaire. Verbal consent was taken before recruiting the study population. Completed data forms were reviewed, edited, and processed for computer data entry. The data analysis was performed using Statistical Package for the Social Sciences (SPSS) Windows Version.* ***Result:*** *Most of the study population (17,34.0%) were in the age group twenty-six to thirty. The mean age was 27.82±5.37. The primary complaints in more than half of the study population (27,54.0%) were dysmenorrhea, around two-fifth of the patients (21,42%) had infertility and fourteen patients had abnormal uterine bleeding. Based on ultrasonography findings, eight patients (8,16.0%) had an ovarian cyst, the majority of patients (13,26.0%) had tubo ovarian mass, followed by endometriosis cyst found in twelve patients (12,24.0%) and three patients (3,6.0%) had hydrosalpinx tube. Based on laparoscopic findings, most of the patients (22,44.0%) had enlarged uterus, around one-third of the patients (14,28.0%) had an ovarian cyst, six patients (6,12.0%) had periovarian adhesions, and seven patients (7,14.0%) had endometriosis cyst.* ***Conclusion:*** *This study observed comparison between ultrasonography & laparoscopic findings. Ultrasonography should be the primary imaging*

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modality used to identify and characterize adnexal masses, As it is readily available, yet most people prefer laparoscopy.

Keywords: *Adnexal Mass, Ultrasonography, Laparoscopy, etc.*

INTRODUCTION

Adnexal masses are growths of cells that develop organs and connective tissues around the uterus. Adnexal tumours are generally not cancerous, however in some cases; they can be cancerous. Adnexal masses are commonly encountered in gynecologic practice and often present both diagnostic and management challenges [1]. There are some symptoms of an adnexal mass, such as; pelvic pain, difficulty in urinating, bleeding near the mass, frequent urination, bloating, irregular periods, constipation, and gastrointestinal disorders [2]. An adnexal mass associated with pain includes ovarian torsion and heterotopic pregnancy. Adnexal mass during pregnancy is not rare and the prevalence of adnexal masses in pregnancy ranges from 2% to 10% [3] [4]. Most of these cases are diagnosed accidentally at the time of a screening first-trimester ultrasound. Some uncommon adnexal lesions specific to pregnancy include hyperreactio luteinalis, theca lutein cysts with moles and luteomas [5] [6]. Ultrasonography is one of the main tools in the radiologists' arsenal for the evaluation of pelvic pain in premenopausal patients is well established. American College of Radiology illustrated that for women with a false pregnancy test in whom a gynecologic aetiology for pelvic pain is suspected, ultrasonography is the recommended primary imaging modality [7]. Ultrasound has been widely used as a first-line detection for ovarian masses with certain advantages, like being economical and easily accessible and the leading aims of ultrasound are to investigate whether an adnexal lesion is 'almost certainly benign' or whether the mass has a reasonable chance of being malignant [8]. However, drawbacks of ultrasonography include its dependence on the skills of the operators with some technical errors related to patient body habitus and bowel gas [9]. Laparoscopic surgery has been progressively integrated into standard adnexal mass care in the past years [10]. Treating benign adnexal masses laparoscopically has become the plummet of care, managing suspected or known malignancies laparoscopically is an area with many challenging concerns [11] [12]. Laparoscopic diagnosis of adnexal masses doubtful at ultrasound averts many laparotomies for the treatment of benign masses and provides a better examination of the upper abdomen [13]. Laparoscopic detection of malignancy tumours is reliable after a deliberate pre-operative evaluation has been performed. Moreover, national surveys have disclosed that doubtful laparoscopic determinations, many malignant masses were considered benign at the outset. 80% of different cases were treated by laparoscopy [14]. Without any suspicion, laparoscopy is way to better findings than ultrasonography. This study intends to find out the comparison between ultrasonography and laparoscopy findings.

OBJECTIVES

General objective:

- To evaluate the comparison between ultrasonography and laparoscopy findings.

Specific Objective:

- To observe the incidence of adnexal mass in different ages.
- To detect the clinical presentation of adnexal mass.
- To study the evaluation of other pelvic pathology of patients with adnexal mass by laparoscopy.

METHODS

This prospective comparative study was carried out in the Department of Obstetrics

and Gynaecology, Bangabandhu Sheikh Mujib Medical University, Dhaka from March 2016 to August 2016. A total of 50 patients (N=50) enrolled in this study following the inclusive criteria. All the physical and biochemical parameters were recorded in the data sheet. Verbal consent was taken before recruiting the study population. Ethical clearance was taken from each of the patients. The respondents were remain entirely free to withdraw their participation at any stage or at any time of the study. The information was kept confidential only to be used for the study purpose.

Inclusion criteria:

- Patients with clinically suspected, ultrasound detected adnexal mass.

Exclusion Criteria:

- Patients with active genital infection
- Patients with cardiac or pulmonary disease, coagulopathy, and multiple abdominal surgeries.
- Patients who showed unwillingness to participate in the study

Data analysis:

The study coordinators performed random checks to verify data collection processes. Completed data forms were reviewed, edited, and processed for computer data entry. Frequencies, percentages, and cross-tabulations were used for descriptive analysis. The data analysis was performed using Statistical Package for the Social Sciences (SPSS) for Windows Version.

RESULT

Among the study population (N=50), the mean age of the patients was 27.82±5.37, the majority of the patients' (17,34.0%) age ranged from twenty-six to thirty and only four patients (4,8.0%) age was more than forty. Around three-fourths of the study population (36,72.0%) were married and regarding parity, most of the patients (31,62.0%) were nulliparous, and around three-fifths of the study population (31,62.0%) came from lower economic class **[Table 1].** The primary complaints in more than half of the study population (27,54.0%) were dysmenorrhea, around two-fifth of the patients (21,42%) had infertility and fourteen patients (14,28.0%) had abnormal uterine bleeding **[Table 2].** About half of the study population (26,52.0%) experienced tender mass, based on the relationship of mass with a uterus, around three-fifths of the patients (30,60.0%) had a fixed uterus. According to uterus size, the majority of the patients' (30,60.0%) uterus was normal and twenty-two patients (22,44.0%) uterus was enlarged in size. Cul-de-sac, was free to about half of the study population (24,48.0%), was obliterated in twenty-two patients (22,44.0%) and nodularity was present in four patients (4,8.0%) **[Table 3].** Based on ultrasonography findings, eight patients (8,16.0%) had an ovarian cyst, the majority of patients (13,26.0%) had tubo-ovarian mass, followed by endometriosis cyst found in twelve patients (12,24.0%) and three patients (3,6.0%) had hydrosalpinx tube **[Table 4].** Based on laparoscopic findings, most of the patients (22,44.0%) had enlarged uterus, around one-third of the patients (14,28.0%) had an ovarian cyst, six patients (6,12.0%) had periovarian adhesions, and seven patients (7,14.0%) had endometriosis cyst **[Table 5].**

Table 1: Distribution of study population based on Socio-demographic characteristics (N=50)

Characteristics	**(N,%)**
Age **Mean age:** 27.82±5.37	
≤20	4,8.0%
21-25	10,20.0%
26-30	17,34.0%
31-35	9,18.0%
36-40	5,10.0%
>40	4,8%
Marital status	

Unmarried Married	14,28.0% 36,72.0%
Parity	
Nulliparity 1-2 .>2	31,62.0% 11,22.0% 8,16.0%
Socio-economic status	
Lower class >7000 Lower middle class 7000-27000 Upper middle class >27000	17,34.0% 31,62% 2,4%

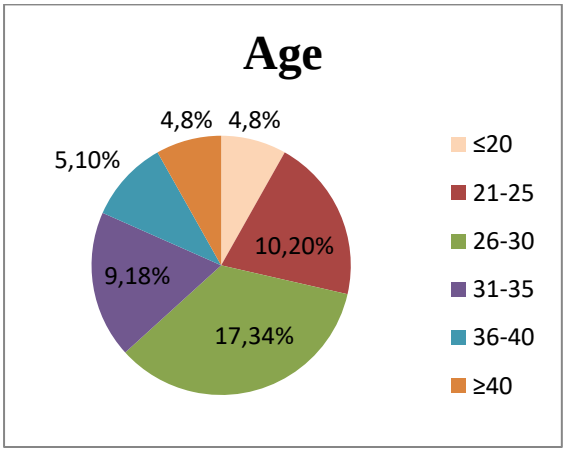

Figure 1: Pie chart showing the Age of the patients.

Table 2: Distribution of study population based on Presenting Symptoms (N=50)

Symptoms	**(N,%)**
Dysmenorrhea	27,54.0%
Dyspareunia	18,36.0%
Pelvic pain	16,32.0%
Infertility	2142.0%
Primary	5,10.0%
Secondary	16,32.0%
Abnormal uterine bleeding	14,28.0%
Backache	10,20
Discharge per vaginum	9,18.0%
Lump abdomen	2,4.0%

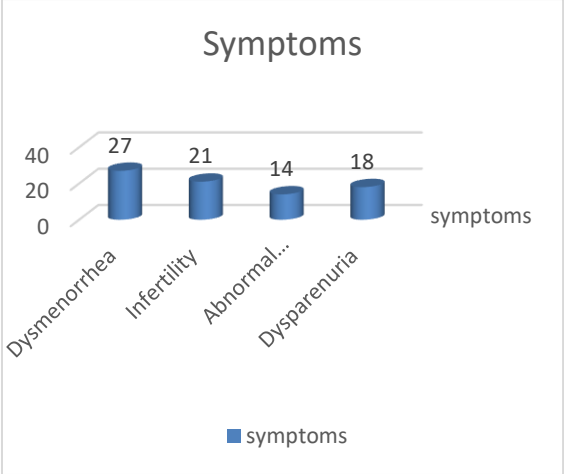

Figure 2: Column chart showing Symptoms of the study population.

Table 3: Distribution of study population based on Bimanual examinations (N=50)

Clinical Findings	**(N,%)**
Mass	
Tender	26,52.0%
Non-tender	24,48.0%
Relationship of mass with a uterus	
Fixed	30,60%
Free	20,40.0%
Size of uterus	
Normal	28,54.0%
Enlarged	22,44.0%
Cul De Sac	
Free	24,48.0%
Obliterated	22,44.0%
Nodularity	4,8.0%

Table 4: Distribution of study population based on Ultrasonography findings (N=50)

Findings	**(N,%)**
Ovarian Cyst	8,16.0%
Endometriosis Cyst	12,24.0%
Tubo-Ovarian Mass	13,26.0%
Free Fluid pod	8,16.0%
Hydrosalpinx tube	3,6.0%
Broad ligament fibroid	1,2.0%
Enlarged uterus	1,2.0%

Table 5: Distribution of study population based on Laparoscopic findings (N=50)

Structure	(N,%)
Endometriosis Cyst	7,14.0%
Tuboovarian Mass	6,12.0%
Ovarian Cyst	14,28.0%
Hydrosalpinx tubes	5,10.0%
Dermoid cyst	5,10.0%
Periovarian Adhesions	6,12.0%
Adhesions Omentum	5,10.0%
Broad ligament cyst	2,4.0%
Enlarged uterus	22,44.0%
Free Fluid In Pod	11,22.0%

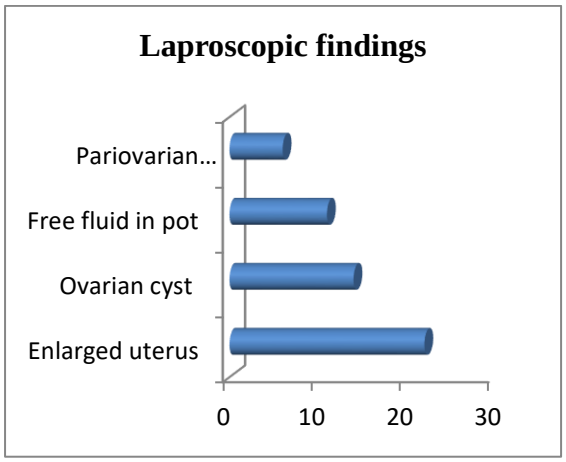

Figure 3: Bar chart showing laparoscopic findings of patients

DISCUSSION

A comparative study participated by fifty people who had adnexal masses. The laparoscopic method is beneficial and appropriate for women with benign adnexal masses. There are some advantages of laparoscopic management of adnexal masses such as reduction of operative blood loss, fewer postoperative complications, less pain and rapid recovery [15]. Most doctors believe that laparoscopy has the potential to treat wholly and efficaciously both benign and malignant adnexal masses and decreased unnecessary morbidity [16]. In our study, most of the patients' age was between 26-30 and the mean age was 27.82±5.37. A similar study was carried out in Haryana, India found that the majority of patients belonged to the age group of 30 to 35 years of age who underwent surgery for adnexal masses [17]. Another contradictory analysis was carried out with adolescents, aged 18 years or younger with benign ovarian masses who underwent surgery [18]. A study was also conducted with adolescents where the mean age was 13.5±SD and underwent surgical treatment for adnexal masses [19]. In our study, most of the patients (31,62.0%) were belong to the lower middle class. Another related study was carried out in a tertiary care hospital in Dhaka, revealing that 56% of patients were from the middle class [20]. In the present study, the author found some symptoms, such as; dysmenorrhea (27,54.0%), pelvic pain (16,32.0%), infertility (21,42.0%), abnormal uterine bleeding (14,28.0%) etc. Another study revealed almost similar symptoms, like lower abdominal or pelvic pain, abnormal uterine bleeding, dysmenorrhea, vaginal discharge, fever and vomiting etc [21]. Based on ultrasonographic findings, this present content revealed that the commonest finding was tubo ovarian mass (13,26.0%), and the second communal finding was an endometriotic cyst (12,24.0%). Other commonest findings were ovarian cyst (8,16.0%), free fluid pod (8,16.0%), hydrosalpinx tube (3,6.0%), broad ligament fibroid (1,2.0%) and enlarged uterus (1,2.0%). Similar outcomes were reported in some related articles [22] [23] [24]. Another contradictory analysis revealed more tubo ovarian mass compared to ovarian cyst [25]. Based on laparoscopic findings, this current study showed that the commonest diagnosis was enlarged uterus (22,44.0%), ovarian cyst (14,28.0%), free fluid in a pod (11,22.0%), endometriotic cyst (7,14.0%), tubo ovarian mass (6,12.0%), periovarian adhesions (6,12.0%), hydrosalpinx tube (5,10.0%), dermoid cyst(5,10.0%), adhesions omentum (5,10.0%). The outcomes have been collaborated by another article [22]

[24] [26]. The Royal College of Obstetricians and Gynaecologists stated that; 'Simple, unilateral, unilocular, ovarian cysts less than 5 cm in diameter have a low risk of malignancy [27]. There is no uncertainty that the achievements of laparoscopic surgery are mainly dependent on the skill and expertise of the operating surgeons and preoperative diagnosis [28]. Laparoscopy has an essential role in the diagnosis of both acute and chronic abdominal pain. Laparoscopy is a better diagnostic tool than both clinical examination and ultrasonography for the diagnosis of tubo ovarian mass. Thus proving that laparoscopy is a superior diagnostic apparatus compared to clinical examination and ultrasonography for the diagnosis of hydrosalpinx.

CONCLUSION

The majority of people prefer laparoscopy and without any doubt, laparoscopy is better diagnostic modality over ultrasonography. However, it should be used as a diagnostic and a therapeutic technique in adnexal masses and ultrasonography should be the initial imaging modality applied to find out and depict adnexal masses, as it is readily available and non-invasive.

RECOMMENDATIONS

There is a necessity for setting a screening docket to cover all age groups for early detection and treatment of adnexal mass cases. Furthermore, strategies should be implemented to accelerate Government programs to raise awareness among people. Outdoor physical activities should be emphasized. The burden of long-term morbidity due to adnexal masses should be put to the notice of the concerned authorities. To get robust data, multicenter studies are in great need of policymakers to interpret the demonstrable scenario and to take necessary steps towards mitigating this problem. Further research is also needed to detect the burden of adnexal masses which can be cancerous in an attempt to reduce the problem and facilitate the prognosis of such condition.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCE

1. *Liu JH, Zanotti KM. Management of the adnexal mass. Obstetrics & Gynecology. 2011 Jun 1;117(6):1413-28.*
2. *Biggs WS, Marks ST. Diagnosis and management of adnexal masses. American family physician. 2016 Apr 15;93(8):676-81.*
3. *Schmeler K, Mayo-Smith W, Peipert J, Weitzen S, Manuel M, Gordinier M. Adnexal masses in pregnancy: surgery compared with observation. Obstet Gynecol.2005; 105:1098-103.*
4. *Bromley B, Benacerraf B. Adnexal masses in pregnancy: accuracy of sonographic diagnosis and outcome. J Ultrasound Med.1997:46;401-06.*
5. *Schwartz N, Timor-Tritsch IE, Wang E. Adnexal masses in pregnancy.Clin Obstet Gynecol.2009;52:570-85.*
6. *Leiserowitz G. Managing ovarian masses during pregnancy.Obstet Gynecol Surv.2006;61:463-70.*
7. *Ackerman SJ, Irshad A, Anis M. Ultrasound for pelvic pain II: non-gynecologic causes. Obstetrics and Gynecology Clinics. 2011 Mar 1;38(1):69-83.*
8. *Munro MG, Gomel V. Reconstructive and Reproductive Surgery in Gynecology: Volume Two: Gynecological Surgery. CRC Press; 2018 Sep 3.*
9. *Dupuis CS, Kim YH. Ultrasonography of adnexal causes of acute pelvic pain in pre-menopausal non-pregnant women. Ultrasonography. 2015 Oct;34(4):258.*
10. *Pulcinelli FM, Schimberni M, Marci R, Bellati F, Caserta D. Laparoscopic versus laparotomic surgery for adnexal masses: role in elderly. World journal of surgical oncology. 2016 Dec;14(1):1-5.*
11. *Farghaly SA. Current diagnosis and management of ovarian cysts. Clinical and experimental obstetrics & gynaecology. 2014 Dec 10;41(6):609-12.*
12. *Begum F, Bhuiyan MJ, Ali MJ. Laparoscopic Management of Benign Adnexal Masses. Journal of Bangladesh College of Physicians and Surgeons. 2022 Apr 10;40(2):111-5.*

13. *Havrilesky LJ, Peterson BL, Dryden DK, Soper JT, Clarke-Pearson DL, Berchuck A. Predictors of clinical outcomes in the laparoscopic management of adnexal masses. Obstetrics & Gynecology. 2003 Aug 1;102(2):243-51.*
14. *Canis M, Botchorishvili R, Manhes H, Wattiez A, Mage G, Pouly JL, Bruhat MA. Management of adnexal masses: role and risk of laparoscopy. Semin Surg Oncol. 2000;19(1):28-35.*
15. *Gupta H, Gupta A, Paul M. Role of diagnostic laparoscopy in the evaluation of pelvic adnexal masses. Int J Innovative Res Development. 2015;4(9).*
16. *Yilmaz S, Selcuk NF, Usta T, Kale A. Minimally invasive surgery in pelvic pain: from a gynaecological perspective. Gynecol Pelvic Med. 2020;4:5.*
17. *Solanki H, Dave P, Jindal D. Ovarian masses under 35 years of age: Sociodemographic, clinical findings and fertility preservation surgery. Age.;10(14):6.*
18. *Berger-Chen S, Herzog TJ, Lewin SN, Burke WM, Neugut AI, Hershman DL, Wright JD. Access to conservative surgical therapy for adolescents with benign ovarian masses. Obstetrics & Gynecology. 2012 Feb 1;119(2):270-5.*
19. *Xac MC, Jetelina KK, Jarin J, Wilson E. Benign, borderline, and malignant pediatric adnexal masses: A 10-year review. Journal of pediatric and adolescent gynaecology. 2021 Aug 1;34(4):454-61.*
20. *Dhar SR, Begum SN, Zabin F, Akter S. Socio-demographic Characteristics of Ovarian Tumor Patients attended at a tertiary Care Hospital in Dhaka city. Journal of Current and Advance Medical Research. 2015 Sep 4;2(2):39-41.*
21. *Givens V, Mitchell G, Harraway-Smith C, Reddy A, Maness DL. Diagnosis and management of adnexal masses. American family physician. 2009 Oct 15;80(8):815-20.*
22. *Purnichescu V,Cheret-Benoist A,Von Theobald P,Mayaud A,Herlicoviez M,Dreyfus M. Laparoscopic management of pelvic mass in pregnancy.J Gynecol Obstet Biol Reprod (Paris). 2006;35(4):388-95.*
23. *Fatum M, Rojansky N.Laparoscopic surgery during pregnancy. Obstet Gynecol Surv.2001;56(1):50-9.*
24. *Mining L, Otaño L, Cruz P, Patrono MG, Botazzi C, Zapardiel I.Laparoscopic surgery for treating adnexal masses during the first trimester of pregnancy. J Minim Access Surg.2016;12(1):22-5.*
25. *Childers JM,Nasseri A,Surwit EA. Laparoscopic management of suspicious adnexal masses. Am J Obstet Gynecol. 1996;175(6): 1457-9.*
26. *Canis M,Mage G,Pouly JL,Wattiez A,Manhes H,Bruhat MA.Laparoscopic diagnosis of adnexal cystic masses: a 12-year experience with long-term follow-up.Obstet Gynecol.1994;83(5 Pt 1):707-12.*
27. *Royal College of Obstetricians and Gynaecologists (RCOG) Ovarian cyst in post-menopausal women. Greentop Guidelines. 2003;(34)*
28. *Jahan S, Mahmud N, Mondal SK, Das T, Akter N, Nahar S, Habib SH, Saha S. Laparoscopic Surgery for Large Benign Ovarian Cysts: Experience in a Tertiary Care Hospital in Bangladesh. Journal of Gynecologic Surgery. 2011 Jun 1;27(2):83-6.*