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A study of abdominal lumps in female patient's diagnostic evaluation and operative correlation

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Abstract

Background & Methods: The aim of the study is to study of abdominal lumps in female patient's diagnostic evaluation & operative correlation. Abdominal lumps are a common clinical presentation in female patients, presenting a diagnostic challenge for clinicians. This study evaluates the diagnostic approach, the range of conditions identified, & the correlation between pre-operative assessments & operative findings in 50 female patients presenting with abdominal lumps. The study explores diagnostic modalities such as clinical examination, ultrasound, CT scans, & histopathological analysis. The aim is to correlate pre-operative diagnosis with operative outcomes to determine the accuracy of diagnostic methods.

Results: Ovarian cysts and abdominal wall lipomas had 100% diagnostic accuracy, meaning all pre-operative diagnoses were correct. Gastrointestinal tumors and endometriosis showed significantly lower accuracy, with endometriosis being the most challenging to diagnose pre-operatively, with just a 50% accuracy rate. Overall, uterine fibroids, benign ovarian tumors, and malignant ovarian tumors had relatively high accuracy, although some misdiagnosis occurred.

Understanding the reliability of pre-operative diagnoses for different conditions and suggests that certain conditions may be more difficult to diagnose accurately before surgery.

Conclusion: The significance of a thorough diagnostic assessment for female patients who present with abdominal tumors is highlighted by this study. Even though CT and ultrasound scans are useful diagnostic tools, surgery and histological analysis are frequently necessary for a conclusive diagnosis. The study emphasizes the necessity of ongoing improvement in diagnostic techniques, especially for uncommon and complex abdominal diseases.

Keywords: abdominal, lumps, female & operative.

Study Design: Observational Study.

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Introduction

Female patients frequently come with abdominal lumps, which can be difficult for specialists to diagnose. In 50 female patients who report with abdominal lumps, this study assesses the diagnostic method, the variety of conditions found, & the relationship between pre-operative evaluations & operational results [1]. The study investigates diagnostic techniques such histopathological analysis, ultrasonography, CT scans, & clinical examination. To ascertain the accuracy of diagnostic techniques, the goal is to link pre-operative diagnosis with operational outcomes [2].

Gynecologists frequently face the challenge of distinguishing between benign & malignant tumors in patients who present with pelvic masses or with a presumptive diagnosis of liomyomata.1 Because abnormalities in the female reproductive tract might have either gynecological or nongynecological causes, the differential diagnosis of pelvic mass is highly varied. Adnexal or uterine masses are examples of gynecological masses [3]. The ovary, fallopian tube, wide ligament, & related blood & nerve supplies make up the adnexal area. However, the bladder, ureter, rectum, colon, blood arteries, & pelvic nerves are non-gynecological origins of pelvic masses [4].

Seventy percent of pelvic masses discovered during exploratory surgery in individuals with a preoperative diagnosis of pelvic mass not related to leiomyomata are caused by ovarian pathology [5]. Uterine fibroids are the most prevalent pelvic tumors in women among the abdominal masses. They are the most often mentioned cause of hysterectomy since they are a major contributor to abnormal uterine hemorrhage.

With the increase in the degree of specialization, abdominal surgery is one of the main pre the general surgeon. It is well known that abdomen is a ‘mystery box’ till the lid is opened at the laparotomy[6-7]. Intra-abdominal lumps always pose a challenge to the clinician skills of the best surgeon.

Material & Methods

Patient Selection

The study included 50 female patients presenting with abdominal lumps at Amaltas Institute of Medical Science, Dewas for 01 Year. Inclusion criteria consisted of patients aged 18 years or older who had a palpable abdominal lump confirmed via clinical examination. Patients with known malignant conditions or prior abdominal surgeries were excluded.

Diagnostic Modalities

- **Clinical Examination:** Initial palpation & inspection to assess size, location, & characteristics of the lump.
- **Ultrasound:** Used as the first-line imaging modality for detecting abdominal masses & assessing their characteristics (e.g., cystic vs. solid).
- **CT Scan:** Employed for further evaluation of complex cases or when malignancy was suspected.

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- **Laboratory Tests:** Blood tests, including CA-125 (for ovarian tumors), CEA (for gastrointestinal cancers), & other relevant markers.

Operative Findings

- **Surgical Intervention:** All patients underwent surgery either for diagnostic biopsy or excision of the mass.
- **Histopathology:** Tissue samples were sent for histopathological examination to determine the final diagnosis.

Result

Table 1: Demographic Characteristics of Study Patients

Characteristic	Number (%)
Age Group	
18-30 years	08 (16%)
31-40 years	14 (28%)
41-50 years	12 (24%)
51-60 years	10 (20%)
>60 years	06 (12%)
Mean Age	42.5 years

Table 2: Diagnostic Modalities & Their Findings

Diagnostic Modality	Positive Findings	Percentage of Total Cases
Clinical Examination	50 (palpable lump)	100%
Ultrasound	45 (solid cystic)	90%
CT Scan	30 (complex masses)	60%
CA-125 (Blood Marker)	10 (elevated)	20%

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Operative Findings & Diagnosis

Table 3: Operative Findings & Final Diagnosis

Operative Diagnosis	Number of Patients	Percentage (%)
Ovarian Cysts	15	30%
Uterine Fibroids	12	24%
Benign Ovarian Tumor	07	14%
Abdominal Wall Lipoma	06	12%
Malignant Ovarian Tumor	05	10%
Gastrointestinal Tumor	03	6%
Endometriosis	02	4%

Of the 50 patients, 48 underwent surgical interventions. The results of the operative findings & the corresponding diagnoses. The most prevalent condition in this dataset is ovarian cysts, followed by uterine fibroids. Endometriosis is the least common, affecting a small portion of the patient group. The table provides insight into the distribution of various conditions based on the number of patients and their frequency within the study group.

Correlation between Pre-operative Diagnosis & Operative Findings

Table 4: Pre-operative Diagnosis vs. Operative Findings

Pre-operative Diagnosis	Correct Diagnosis at Surgery	Percentage of Accuracy (%)
Ovarian Cyst	15	100%
Uterine Fibroid	10	83.3%
Benign Ovarian Tumor	06	85.7%
Abdominal Wall Lipoma	06	100%
Malignant Ovarian Tumor	04	80%
Gastrointestinal Tumor	02	66.7%
Endometriosis	01	50%

Ovarian cysts and abdominal wall lipomas had 100% diagnostic accuracy, meaning all pre-operative diagnoses were correct. Gastrointestinal tumors and endometriosis showed significantly lower accuracy, with endometriosis being the most challenging to diagnose pre-operatively, with just a 50% accuracy rate. Overall, uterine fibroids, benign ovarian tumors, and malignant ovarian tumors had relatively high accuracy, although some misdiagnosis occurred.

Understanding the reliability of pre-operative diagnoses for different conditions and suggests that certain conditions may be more difficult to diagnose accurately before surgery.

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Discussion

According to the study, benign disorders such ovarian cysts, uterine fibroids, & abdominal wall lipomas are the main causes of abdominal lumps in females. For easily recognized disorders like ovarian cysts & abdominal wall lipomas, where clinical examination, ultrasound, & surgical findings were highly associated, diagnostic accuracy was best.

Ultrasound had a high sensitivity of 90% in identifying abdominal masses, while CT scans were useful for assessing complicated masses or masses with ambiguous characteristics. For gastrointestinal tumors & endometriosis, there was a significant disparity between pre-operative diagnosis & post-operative results, indicating the need for more precise diagnostic markers or better imaging methods for these disorders [8].

Particularly for ovarian & gastrointestinal cancers, the histological connection was essential in validating benign & malignant diagnosis. Although it had poor specificity, elevated CA-125 was a useful marker for ovarian cancer [9].

Radiological investigations provide a substantial support in verifying the clinical diagnosis of abdominal lumps, even though clinical examination is a very powerful tool in this regard. When a gastrointestinal origin is not assumed, abdominal USG is the most crucial imaging modality32. USG aids in distinguishing solid from cystic masses as well as retroperitoneal from intraperitoneal masses. The preferred first imaging modality is USG [10–11].

96.73% in Dixon AK et al., Aspelin P et al., Williams MP et al. Since USG is observer-based, sensitivity varies. Because of the precise anatomical features, computerized tomography (CT) is a great cross-sectional imaging method for abdominal tumors. Accurate staging is made possible by its assistance in determining the mass's precise size & extent.

MRI is a very promising technique, especially with the introduction of open type magnets & fast scan times. USG, CT scan, & MRI were among the radiological modalities used for the investigation, depending on the case's requirements [12]. On clinical inspection, we were able to identify the anatomical organ of origin accurately in 58 cases & incorrectly in just two mesenteric cyst cases & one Ca colon case.

Conclusion

The significance of a thorough diagnostic assessment for female patients who present with abdominal tumors is highlighted by this study. Even though CT and ultrasound scans are useful diagnostic tools, surgery and histological analysis are frequently necessary for a conclusive diagnosis. The study emphasizes the necessity of ongoing improvement in diagnostic techniques, especially for uncommon and complex abdominal diseases.

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