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Ultrasound Study in Patients Having Acute Lower Abdominal Pain and In Torsion

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ABSTRACT

Objective: *For detecting underline ovarian pathology. Ultrasound has been proven to be useful. The main aim of this study was to find out percentage of ovarian torsion in patients suffering from acute lower abdominal pain undergoing ultrasonography and to assess the role of ultrasound in the prediction of ovarian torsion in patients with acute lower abdominal pain related toclinicallysuspected ovarian torsion.*

Methods: *Patients of acute lower abdominal pain were considered under this study. Total 66 patients suffering from acutc lower abdominal pain had under gone ultrasonographic examinaion. Patients were categorized in two groups according to their age i.e. group A and group B. In group A patients between age group of 12 years to 17 years were taken. In group B patients from age of 18 years and above were taken. According to situation patients were examine transabdominally and transvaginally. In this study 2.5 MHz to 5 MHz convex transducer was used for transabdominal ultrasonography. For transvaginal ultrasonography examination 7.5 MHz transducer was used. All patients were examined in supine position*

Results: *In this study total 66 cases were clinically suspected for ovarian torsion, out of which 56 cases (84.84%) were diagnosed as ovarian torsion by ultrasonography examination. In the age group of 12-17 years, 13cases (23.21%) and above 18years of age 43 cases (76.78%) were suffering from ovarian torsion. The ovarian torsion found in 46 married cases (82.14%) and in unmarried cases it was found in 10 cases (17.80%).Two cases (3.57%) were reported in pregnant women while 54 cases (96.20%) were reported in non-pregnant cases. In all cases (100%) pain in lower abdomen were reported, but radiating pain to back and loin were reported in 8 cases (14.28%) .Vomiting and/0r nausea was found in 36 cases (64.28%) whereas no nausea and vomiting was observed in 20 cases (35.71%).The cyst was found in 52 cases (92.85%) while in 4 cases (7.14%) no cyst was found. Involvement of right side ovary in ovarian torsion was found in 49 cases (87.50%) whereas left ovarian involvement was observed in 7 cases (12%) .*

Conclusion: *From the collective findings of this study and considering its limitations in terms of sample size it is concluded that the definitive diagnosis of ovarian torsion remains challenging. Both clinically and sonographical evaluation of acute lower abdominal pain should be considered for the diagnosis of ovarian torsion.*

Keywords: *Acute lower abdominal pain ultrasonography, ovarian torsion*

INTRODUCTION

Ovarian torsion is the fifth most common gynaecological emergency and affects females of all ages [1][3]. It is an acute abdominal condition. It is caused by partial or complete rotation of ovarian pedicle on its axis. This results in compromise of arterial supply and venous drainage causing massive congestion of ovarian parenchyma and eventual haemorragic infarction [26]. Clinically there is severe pelvic pain ,nausea and vomiting Expedient proper and timely diagnosis of ovarian torsion is important to preserve ovarian function and prevent adverse sequelae [2]. Anatomic factors usually account for ovarian torsion in adults. Normal ovaries have been demonstrated in over 50 % of ovarian torsion cases in children under the age of 15years [5][4]. In adults torsion has been described following laproscopic hysterectomy, suggesting that even release of the fulcrum on which the ovaries usually twist does not protect against torsio [6]. Strenuous exercise or a sudden increase in abdominal pressure also promotes torsion of the ovary around the vascular pedicle [7]. The right ovary is more likely than the left to undergo torsion suggesting that the sigmoid colon may help to prevent torion [8].

Women who are pregnant [9][10] or are undergoing ovarian hyperstimuation during infertility treatment are at increased risk of ovarian torsion [11]. The overall incidence of torsion in pregnant women was reported as 15 % [12]. In association with pregnany, torsion most commonly occurred between 10 and 17 weeks of gestation and during the postpartum period. A much lower incidence was reported in another series of pregnant women [13][14]. Torsion was half as common as appendicitis during pregnancy [15].The clinical presentation of ovarian torsion is nonspecific and therefore, it is a challenge for the clinician to recognize this condition and differentiate it from other etiologies. The common presenting features ovarian torsion are sudden onset acute lower abdominal pain and an adnexal mass [16].Other symptoms and findings include nausea and vomiting, pain radiating to back, flank, or loin. Ultrasound can detect adnexal lesions and ovarian enlargement. An enlarged, heterogeneous appearing ovary is the most common ultrasound finding [19], however the presence of normal appearing ovaries does not rule out the diagnosis [20]. Doppler ultrasonography [21] shows diminishing or absent ovarian vessel flow in two dimensional color [21]. The aim of study was to find out percentage of ovarian torsion in paitents suffering from acute lower abdominal pain undergoing ultrasonography and to assess the role of ultrasound in the prediction of ovarian torsion in patients with acute lower abdominal pain related to clinically suspected ovarian torsion.

METHODS

Patients of acute lower abdominal pain were considered under this study. Tota 6 patients suffering from acute lower abdominal pain had undergone ultrasonography examination. Patients were categorised in two groups according to their age. In group A patients between age group of 12 years to 17 years were taken. In group B patients from the age of 18 years and above were taken. According to situation patients were examine transabdominally and transvaginally. In this study, 2.5 MHz to 5 MHz convex transducer was used for

transabdominal ultrasonography. For transvaginal ultrasonography examination 7.5 MHz transducer was used with both real time gray scale and color doppler imaging. All patients were examinedin in supine position. The collected data was arranged in tabular form for all patients. All categorical variables (clinically diagnosed patients, age, marital status, pregnancy, pain in lower abdomen, abdominal pain radiating to back and loin, vomiting and nausea, ovarian torsion, twisted ovary with cyst, side of torsion) were recorded and their frequency distribution were measured.

RESULTS

Table 1 shows a summary of the sociodemographic and clinical characteristics of the 66 cases clinically suspected for ovarian torsion had undergone ultrasonographic examination. Out of these 66 clinically suspected cases, 56 cases (84.84%) were diagnosed as ovarian torsion by ultrasonography. Out of 56 cases of ovarian torsion, 13 cases (23.21%) were in the age group of 12 to 17 years and 43 cases (76.78%) were in the age group of 18years and above 46 cases (82.14%) were married and 10 cases (17.80%) were unmarried out of 56 diagnosed cases. In this study out of 56 cases 2 were pregnant patients (3.57%) and 54 were non-pregnant patients (96.42%). All the cases (100%) were associated with acute lower abdominal pain, out of these 8 cases (14.28%) were having radiating pain to loin and back. Vomiting and nausea were reported in 36 cases (64.28%) out of 56 patients diagnosed ultrasonographically having ovarian torsion while in 20 cases (35.71%) vomiting and nausea was absent. Out of 56 cases, cyst were found in 52 cases (92.85%) and no cyst was seen in 4 cases (7.14%). In this study right side involvement of ovary was seen in 49 cases (87.50%) out of 56 cases and left side ovary was involved in 7 cases (12.50%).

DISCUSSION

Ovarian torsion is an uncommon condition however it is the most common gynaecological surgical emergency and has overall incidence of 2.7 % [22]. Awareness of its clinical and sonological features may enable prompt treatment that can spare the ovary. Ultrasound has been proven to be useful in diagnosing any underlying ovarian pathology.Lee et al.[21] concluded that identification of twisted vascular pedicle through ultrasonography is suggestive of ovarian torsion and color doppler sonography could be helpful in predicting the viability of adnexal structures by depicting blood flow within the twisted vascular pedicle. Grey scale findings typically include asymmetric enlargement, a solid heterogenous appearance and peripheral cystic areas. Pena et al. [23] concluded that abnormal flow detected by doppler sonography is highly predictive of adnexal torsion and is therefore useful in the diagnosis of ovarian torsion, however the detection of normal flow does not necessarily exclude ovarian torsion.

Bouguizane et al. [9] concluded that clinician must be aware of possible adnexal torsion in women with acute pelvic pain, ultrasound is a useful tool in these situation [10]. Ignacioa et al. [25] concluded that an ultrasound image can usually be used to make a diagnosis in conjunction with clinical parameters.

Table 1. Sociodemographic and clinical characteristics of the 66 cases of suspected ovarian torsion

. Demographics	No of patient having ovarian torsion	No of patient not having ovarian torsion	Total	Percentage %
Clinically diagnosed patients suspecting ovarian tortion				
Ovarian torsion	56	10	66	84.84
Age Group				
12 - 17years	13	34	56	23.21%
18 and above	43	14	56	76.78%
Marital status				
Married	46	10	56	82.14%
Unmarried	10	46	56	17.80%
Pregnant - Non-pregnant				
Pregnant	2	54	56	3.50%
Non-pregnant	54	2	56	96.42%
Pain in lower abdomen				
lower abdominal pain	56	00	56	100%
Pain radiating to back and loin				
Pain radiating to back and loin	8	48	56	14.28%
Vomiting & Nausea				
Vomiting & Nausea	36	20	56	64.28%
Twisted ovary with cyst				
Twisted ovary with cyst	52	4	56	92.85%
Side of torsion				
Right side involment	49	7	56	87.50%
Left side involment	7	49	56	12.50%

CONCLUSIONS

From the collective findings of this study and considering its limitations in terms of sample size, it is concluded that the definitive diagnosis of ovarian torsion remains challenging. Both clinical and sonographical evaluation of acute lower abdominal pain should be considered for the diagnosis of ovarian torsion.

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