



ROLE OF IMAGING IN ASSESSMENT OF ADNEXAL TORSION AND OVARIAN VIABILITY.

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ABSTRACT

Ovarian torsion is defined as partial or complete rotation of the ovarian vascular pedicle and causes obstruction to venous outflow and arterial inflow. Ovarian torsion is usually associated with a cyst or tumor, which is typically benign; the most common is mature cystic teratoma. Ultrasonography (US) is the primary imaging modality for evaluation of ovarian torsion. Ultrasonography features of ovarian torsion include a unilateral enlarged ovary, uniform peripheral cystic structures, a coexistent mass within the affected ovary, free pelvic fluid, lack of arterial or venous flow, and a twisted vascular pedicle.

KEYWORDS : Adnexa; Torsion; Vascularity.

INTRODUCTION:

- Torsion is defined as the twisting of an organ or part of an organ along its own axis.
- The ovary and fallopian tube twist on their vascular and ligamental supports, causing interrupted perfusion that is initially due to venous and lymphatic congestion and subsequently caused by compromise to arterial flow.
- Adnexal torsion is an important cause of morbidity, and its nonspecific manifestations can prove to be a diagnostic challenge. To avoid ovarian infarction and the possibility of associated subfertility, early detection is critical.

AIMS AND OBJECTIVES:

- Present study was aimed in determining the importance of role of imaging in identifying adnexal torsion thereby accelerating definitive treatment so that viability of involved organ can be preserved.

MATERIALS & METHODS:

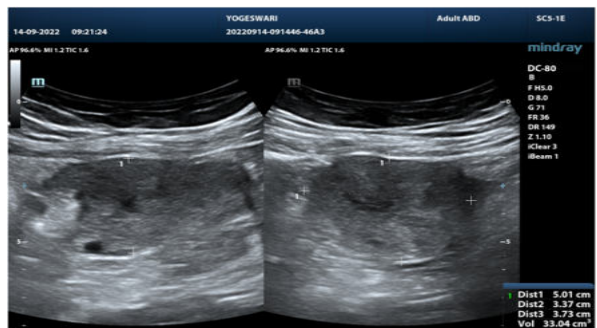
- Present study included 35 female patients belonging to reproductive age group referred to department of radiodiagnosis, GEMS&HOSPITAL Ragolu who presented with acute pelvic pain and clinical suspicion of Adnexal torsion.
- The patients were subjected to Ultrasonography and computed tomography pelvis wherever necessary.

RESULTS:

- The main observation in present study was majority of female patients who presented early showed typical findings of adnexal torsion with enlarged abnormally positioned ovary on affected side with decreased vascularity, central ovarian edema with peripherally displaced follicles. Due to early presentation they were diagnosed early leading to early successful detorsion.
- In present study 6 out of 35 cases had presented late and diagnosis was delayed showed non-viable ovaries intraoperatively, 3 out of 35 cases underwent inevitable extensive surgeries because of large adnexal masses which were not diagnosed due to refusal of imaging by patients.
- The inference we drawn from present study is that cases which were diagnosed early showed viable ovaries and were successfully salvaged

Case:1 Case-1: 35 years old female came with complaint of pain in right iliac fossa since one day.

	Number of cases	Intraoperative ovarian viability
Cases presented and diagnosed early	26	Viable and salvageable ovaries
Cases presented late and diagnosed late	6	Nonviable and non-salvageable ovaries underwent safe surgical procedures without any complications
Cases refused imaging at the time of presentation and imaging was not done	3	Nonviable and non-salvageable ovaries underwent extensive surgical procedures with complications due to undiagnosed adnexal torsion secondary to large adnexal masses



(Fig:1)



Fig:2

1.On TAs showed enlarged right ovary with heterogenous stromal hypertrophy with multiple peripherally arranged follicles. on color doppler no vascularity noted

2.well defined heterogenous large multiloculated cystic lesion with hyperechoic area in the right lateral wall, thin internal septations & with minimal vascularity on color doppler.-suggestive of right ovarian dermoid cyst.

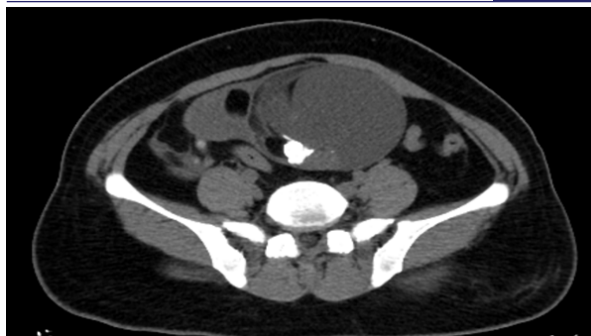
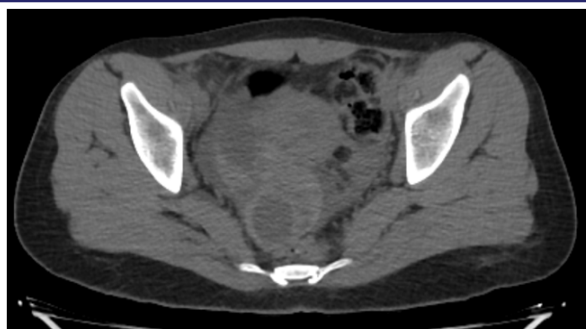


Fig3
Fig 3.Axial NECT image shows a welldefined large cystic lesion arising in the right ovary shows mixed density with fat & fluid component, calcifications also noted. Acted as lead point for torsion.



Axial non enhanced CT images shows few hypodense cystic lesion with enlarged right ovary, with free fluid noted in the pelvis. uterus, left ovary appears normal.



Fig4
Fig 4. Surgery: Intraoperative findings shows large right ovarian dermoid cyst with torsion of ovary, necrotic follicles and confirms the diagnosis.



Sagittal, coronal non enhanced CT images shows enlarged right ovary with stromal dominance with peripherally arranged hypodense fluid filled follicles, a hemorrhagic cyst noted causing adnexal torsion on right side.

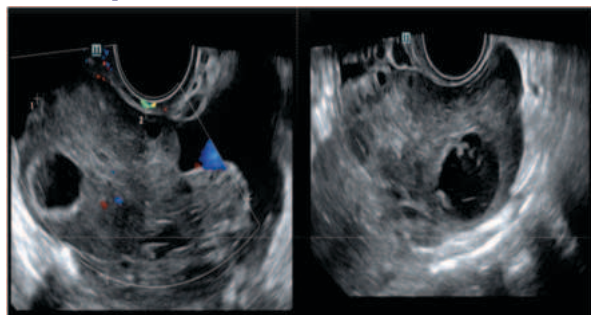
CASE-2:A 22year old female patient came with complaints of acute pain abdomen in right iliac fossa



On TAS grayscale USG shows right ovary appeared enlarged in size with stromal dominance,with multiple peripheral follicles, few anechoic cystic lesions with internal septations noted.



Intraoperative laparotomy findings also shows right enlarged ovary with hemorrhagic cysts.



On TVS gray scale images shows enlarged right ovary with thin pedicle attached to the ovary with a welldefined anechoic cystic lesion with internal septa noted-likely hemorrhagic cyst. Significant free fluid with low level internal echoes approximately measuring 150-200cc in the pelvic cavity & POD area –suggestive of hemoperitoneum. On color doppler no vascularity noted.

DISCUSSION:

- The incidence of adnexal torsion in patients undergoing emergency surgery for acute pelvic pain is about 2.5 - 7.4%.
- Most commonly right side is affected probably due to longer right utero-ovarian ligament.
- Sigmoid colon within the left side can protect the ipsilateral ovary from swinging.
- One of the main predisposing factors for torsion is the presence of an underlying adnexal mass, accounting for 50 - 90% of cases. The m/c involved masses are functional follicles greater than 5cm and benign neoplasms, such as cystadenoma and especially benign teratomas.
- Most of the cases presented with non-specific acute pelvic pain, nausea and vomiting with raised cell count.
- Grey scale and color doppler ultrasonography would be the initial imaging modality of choice.

CONCLUSION:

- Adnexal torsion eventually leads to ovarian and possibly fallopian tube infarction; thus, prompts early diagnosis to salvage the ovary. A high index of clinical suspicion is required in cases of sudden-onset pelvic pain when it is associated with nausea or vomiting, particularly in premeno-pausal patients, and radiological imaging may

be the first to consider this diagnosis.

- Prompt diagnosis and identification of the features of ovarian torsion can increase the likelihood of the patient undergoing timely surgical intervention and successful detorsion rather than the more extensive surgeries required in cases of missed torsion and delayed diagnosis leading to resultant ovarian necrosis.

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