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Beyond Ovarian Enlargement: Right Adnexal Torsion Associated with a Constricting Peritoneal Band—A Laparoscopic Case Report with Application of Dr. Sachin's Criteria

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Abstract

Background: Adnexal torsion is an important gynaecological emergency requiring prompt diagnosis and surgical intervention to preserve ovarian function. Although ovarian enlargement and adnexal masses are recognized predisposing factors, unusual anatomical causes may occasionally contribute to torsion. Preoperative diagnosis can be challenging, particularly in patients presenting with nonspecific abdominal symptoms and equivocal imaging findings.

Case Presentation: We report the case of a 30-year-old woman, para 1, with a previous caesarean section and a three-year-old child, who presented with severe lower abdominal pain predominantly localised to the right iliac fossa on 6 October 2026. She also reported an episode of fever three days before presentation and associated backache, without nausea or vomiting.

Considering acute appendicitis and adnexal torsion as differential diagnoses, the patient underwent ultrasonography and magnetic resonance imaging (MRI). MRI demonstrated a bulky right ovary measuring 50 × 48 × 22 mm, with stromal T2 hyperintensity, peripheral displacement of follicles, and relatively reduced stromal enhancement, raising suspicion of torsion-detorsion syndrome. An additional indeterminate enhancing focus was identified in the superomedial aspect of the right ovary.

In view of the clinical and radiological findings, diagnostic and operative laparoscopy was planned. Intraoperatively, right adnexal torsion was identified in association with a bulky ovary showing polycystic morphology. An unusual constricting peritoneal band extending from medial to lateral and encircling the fallopian tube was identified. The band was divided, followed by adnexal detorsion and bilateral utero-ovarian ligament plication according to Dr. Sachin's Criteria for Adnexal Torsion Management.

The postoperative recovery was uneventful, and the patient was discharged after 24 hours. At 25-day follow-up, she remained asymptomatic.

Conclusion: This case highlights an unusual anatomical association contributing to adnexal torsion and reinforces the importance of diagnostic laparoscopy in patients with persistent clinical suspicion despite equivocal imaging. It also demonstrates the potential application of a structured surgical approach incorporating adnexal detorsion and ligament plication.

Keywords: Adnexal Torsion, Ovarian Torsion, Peritoneal Band, Polycystic Ovarian Morphology, Laparoscopy, Utero-Ovarian Ligament Plication, Ovarian Preservation

1. Introduction

Adnexal torsion is a gynaecological emergency resulting from rotation of the ovary and/or fallopian tube around its supporting ligamentous structures, potentially compromising ovarian vascular supply. Early recognition and timely surgical intervention are essential to prevent irreversible ovarian damage and preserve reproductive potential [1].

Several predisposing factors have been identified, including ovarian enlargement, functional ovarian cysts, benign ovarian tumors, and increased adnexal mobility. Polycystic ovarian morphology, particularly when associated with ovarian enlargement, may also contribute to increased susceptibility to torsion.

Although ovarian enlargement is a recognized risk factor, unusual anatomical structures such as peritoneal bands may further alter adnexal mobility and contribute to torsion.

We present an unusual case of right adnexal torsion associated with a constricting peritoneal band encircling the fallopian tube

in a patient with polycystic ovarian morphology. The case also illustrates the application of Dr. Sachin's Criteria for Adnexal Torsion Management, incorporating detorsion and utero-ovarian ligament plication as an ovarian-preserving surgical strategy.

2. Case Presentation

A 30-year-old woman, para 1, with a history of previous caesarean section and a three-year-old child, presented to our hospital on 6 October 2026 with severe lower abdominal pain, predominantly localized to the right iliac fossa.

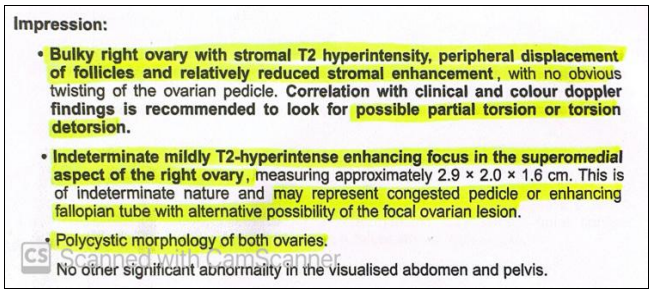
The patient gave a history of fever three days before presentation. She also complained of an associated backache. There was no history of nausea or vomiting [2].

Considering the acute onset and localisation of abdominal pain, acute appendicitis and adnexal torsion were considered important differential diagnoses. All blood parameters were in the normal range. Usg suggested bilateral polycystic ovaries with? No blood supply in ovarian storm. So I suggested doing an MRI [3, 4].

Radiological Evaluation

The patient underwent ultrasonography followed by magnetic resonance imaging on 8 October 2026. MRI findings revealed:

- Bulky right ovary measuring 50 × 48 × 22 mm.
- Stromal T2 hyperintensity.
- Peripheral displacement of ovarian follicles.
- Relatively reduced stromal enhancement.
- Findings suggestive of possible torsion-detorsion syndrome.
- An indeterminate mildly T2-hyperintense enhancing focus in the superomedial aspect of the right ovary measuring 29 × 20 × 16 mm, possibly representing a congested vascular pedicle or enhancing fallopian tube, with focal ovarian pathology as an alternative possibility.
- Polycystic morphology of both ovaries.


Impression:

- **Bulky right ovary with stromal T2 hyperintensity, peripheral displacement of follicles and relatively reduced stromal enhancement**, with no obvious twisting of the ovarian pedicle. **Correlation with clinical and colour doppler findings is recommended to look for possible partial torsion or torsion detorsion.**
- **Indeterminate mildly T2-hyperintense enhancing focus in the superomedial aspect of the right ovary**, measuring approximately 2.9 × 2.0 × 1.6 cm. This is of indeterminate nature and may represent congested pedicle or enhancing fallopian tube with alternative possibility of the focal ovarian lesion.
- Polycystic morphology of both ovaries.

No other significant abnormality in the visualised abdomen and pelvis.

Scanned with CamScanner

Considering the clinical presentation and radiological suspicion of adnexal torsion, the decision was made to proceed with diagnostic and operative laparoscopy [5].

Surgical Management

Diagnostic laparoscopy revealed right adnexal torsion associated with a bulky ovary exhibiting polycystic morphology.

An unusual anatomical finding was identified: a constricting peritoneal band extending from the medial to the lateral aspect of the adnexa and encircling the fallopian tube.

This band appeared to contribute to the abnormal anatomical configuration and torsion of the right adnexa.

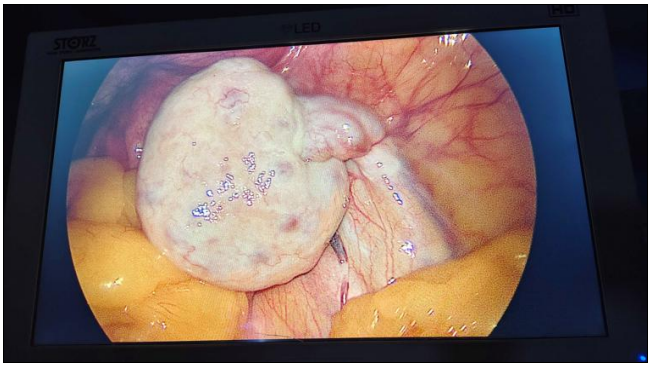


Fig 1: Torsion

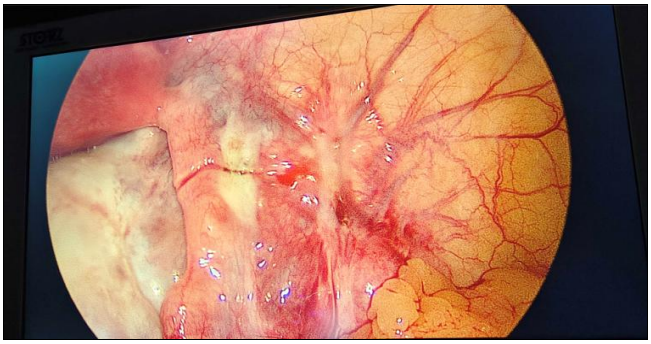


Fig 2: Cut mark caused by band

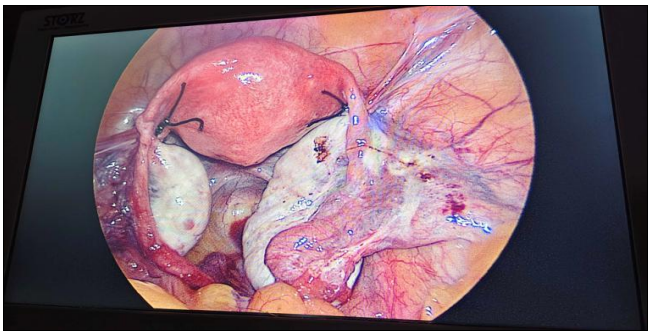
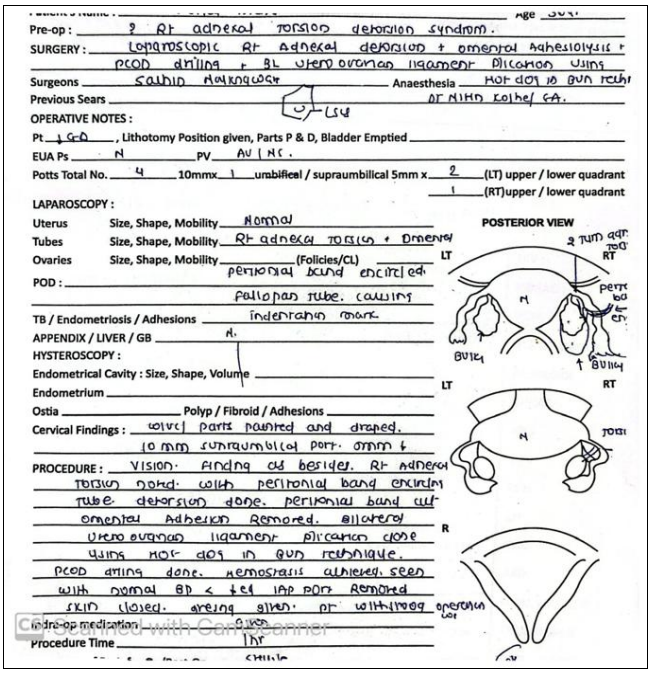


Fig 3: Bl utero-ovarian plication


Pre-op : ? Rt adnexal torsion detorsion syndrom.

SURGERY : Laparoscopic Rt adnexal detorsion + omental adhesiolysis + PCOD drilling + Bl utero ovarian ligament plication using

Surgeons Sachin Anaesthesia Hot dog in bun technique

Previous Sears LSCS Dr Nitin Kothe/ GA.

OPERATIVE NOTES :

Pt GA, Lithotomy Position given, Parts P & D, Bladder Emptied

EUA Ps N PV AV (NC .

Potts Total No. 4 10mmx 1 umbilical / supraumbilical 5mm x 2 (LT) upper / lower quadrant 1 (RT)upper / lower quadrant

LAPAROSCOPY :

Uterus Size, Shape, Mobility Normal

Tubes Size, Shape, Mobility Rt adnexal torsion + omental

Ovaries Size, Shape, Mobility (Follicles/CL)

POD : peritoneal band encircled fallopian tube. causing

TB / Endometriosis / Adhesions indentation mark

APPENDIX / LIVER / GB N.

HYSTEROSCOPY :

Endometrical Cavity : Size, Shape, Volume

Endometrium

Ostia Polyp / Fibroid / Adhesions

Cervical Findings : Wnl parts painted and draped. 10 mm supraumbilical port. 5mm L

PROCEDURE : Vision. Finding as beside. Rt adnexal torsion noted. with peritoneal band encircling tube. detorsion done. peritoneal band cut omental Adhesion Removed. Bilateral Utero ovarian ligament plication done using Hot dog in bun technique. PCOD drilling done. Hemostasis achieved. Seen with normal BP < 1cm IAP port Removed skin closed. dressing given. Pt withdrawn operation

Post-op medication Given

Procedure Time 1hr

POSTERIOR VIEW

Scanned with CamScanner

The peritoneal band was carefully divided laparoscopically, followed by detorsion of the right adnexa.
Following detorsion, bilateral utero-ovarian ligament plication was performed according to Dr. Sachin's Criteria for Adnexal Torsion Management, with the objective of reducing excessive adnexal mobility and minimizing the risk of recurrent torsion [6].
The procedure was completed laparoscopically.

Postoperative Course and Follow-up
The postoperative period was uneventful. The patient recovered satisfactorily and was discharged 24 hours after surgery.
At 25-day postoperative follow-up, the patient was clinically well and reported no abdominal pain or other complaints.

3. Discussion
Adnexal torsion remains a diagnostic challenge because its clinical presentation frequently overlaps with other causes of acute abdominal pain, including appendicitis, pelvic inflammatory disease, and urinary tract pathology.
In this patient, the predominant right iliac fossa pain initially raised suspicion of appendicitis as well as adnexal torsion.
MRI demonstrated several features suggestive of ovarian torsion, including stromal edema, peripheral displacement of follicles, and relatively reduced stromal enhancement. However, the exact anatomical cause of torsion could not be established preoperatively.
The most interesting aspect of this case was the intraoperative identification of a constricting peritoneal band encircling the fallopian tube. This unusual anatomical finding was not clearly identified on preoperative imaging [7].
The association of this band with a bulky ovary exhibiting polycystic morphology may have contributed to abnormal adnexal mobility and mechanical predisposition to torsion.
An important consideration in the surgical management of adnexal torsion is prevention of recurrence, particularly in patients with predisposing anatomical or ovarian factors.
In this case, management involved three important surgical steps:
1. Division of the constricting peritoneal band to release the abnormal anatomical restriction.
2. Detorsion of the affected adnexa to restore its normal anatomical orientation.
3. Bilateral utero-ovarian ligament plication according to Dr. Sachin's Criteria for Adnexal Torsion Management.

This approach highlights the importance of addressing not only the existing torsion but also the underlying anatomical factors that may predispose to recurrence.
The application of Dr. Sachin's criteria in this case demonstrates an ovarian-preserving approach incorporating ligament plication in the surgical management of adnexal torsion. Dr. Sachin Naiknaware's proposed criteria for the management of adnexal torsion aim to standardize surgical decisions, preserve fertility, and reduce recurrence.

Dr. Sachin's Criteria
1. Ovarian Cyst & Detorsion (≥ 5 cm): If adnexal torsion occurs alongside an ovarian cyst measuring 5 cm or larger, perform detorsion followed by an ovarian cystectomy.
2. Utero-Ovarian Ligament (UOL) Length (≥ 5 cm): Measure the utero-ovarian ligament intraoperatively (using standard instrument jaw lengths like a 2 cm bipolar or 3 cm bowel grasper as a reference). If the ligament length is 5 cm or greater, perform UOL plication.
3. Premenarchal & Recurrent Torsion: In cases of premenarchal torsion or recurrent torsion, perform UOL plication utilizing the "hot dog in a bun" technique.
4. PCOD-Associated Torsion: If polycystic ovary disease (PCOD) is the underlying cause, perform detorsion, PCOD drilling, UOL plication (if the ligament is ≥ 5 cm), and administer medical ovarian suppression for 6 months.

4. Conclusion
This case describes an unusual presentation of right adnexal torsion associated with a constricting peritoneal band encircling the fallopian tube in a patient with polycystic ovarian morphology.
It highlights three important clinical lessons:
1. Adnexal torsion should remain an important differential diagnosis in women presenting with acute right iliac fossa pain.
2. Unusual anatomical abnormalities may contribute to adnexal torsion and may only become evident during laparoscopy.
3. Surgical management should consider both correction of the existing torsion and strategies to minimise recurrence while preserving ovarian function.

The case also demonstrates the clinical application of Dr. Sachin's Criteria for Adnexal Torsion Management.

Patient Consent
Written informed consent for publication of the clinical details and relevant radiological and intraoperative images should be obtained from the patient.

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