

Let's do the twist: Who is presenting with adnexal torsion and how?

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Introduction Adnexal torsion (AT) is an uncommon emergency that should always be considered in women presenting with acute abdomino-pelvic pain¹. While some risk factors have been identified, the incidence of AT is unknown² as some cases will spontaneously detort. Some torsion-detorsion cases may have mild symptoms that do not require presentations to emergency departments (EDs), and instead may be incidentally found at the time of elective surgery. The aim of this study is to assess if there are any differences between cases of adnexal torsion diagnosed at emergency surgery versus incidental finding at elective surgery.

Method This retrospective cohort study includes all cases of AT diagnosed at elective and emergency surgery at a tertiary hospital between January 2010 and August 2020. Cases of suspected torsion that did not undergo surgery, or where no torsion was found at surgery were excluded. Continuous variables were summarised with median and interquartile range (IQR) and compared with a Welch's t-test. Categorical variables were compared with a chi-square test.

Results 126 cases were included for final analysis. No differences in patient demographics were found between women who had AT diagnosed at the time of emergency surgery compared to those who had torsion incidentally found at elective surgery (**Table**). Those who had AT diagnosed at emergency surgery were statistically significantly more likely to have presented to the emergency department (ED) for pain within 6 weeks of surgery, including the index emergency surgery admission. Almost all patients had cyst with maximum ovarian diameter (MOD) >50mm – 92% emergency cases and 89% elective cases, however, cysts were significantly more likely to have MOD >100mm in the elective surgery group. Where histopathology was obtained, mature teratomas were significantly more likely to be found in emergency cases; none were found at elective surgery. No malignancies were detected but there were two cases with borderline tumours.

Discussion This study confirms that some women may have adnexal torsion without symptoms requiring presentation to the emergency department for acute pain. This is consistent with Way's finding of two different types of presentations for AT with two correspondingly different surgical findings, including "loosely twisted" pedicles that did not obstruct any of the ovarian vessels and therefore only had vague lower abdominal symptoms³. In our cohort, these cases are significantly more likely to have MOD >100mm. One limitation of this study is the small number of cases included for final analysis. The retrospective nature of this study is also associated with data mining issues. In addition, incidental findings of adnexal torsion at elective surgery may not necessarily be documented in a way that can be easily identified through the hospital medical record coding system.

Table. Patient and presentation factors for adnexal torsion diagnosed at emergency and elective surgery

		Emergency cases (N=109)	Elective cases (N=17)	P-value
Age (years)	Median (IQR)	30 (22-38)	35 (30-51)	0.08
Parity	Median (IQR)	1 (0-1) N=106	2 (0-3) N=15	0.09
Previous adnexal torsion	n (%N)	4 (4%)	0	0.45
Previous abdomino-pelvic surgery	n (%N)	37 (34%)	6 (43%)	0.10
Postmenopausal	n (%N)	12 (11%)	3 (21%)	0.42
Pregnant/Undergoing IVF*	n (%N)	17 (16%) N=108	1 (7%) N=15	0.33
ED Presentation with pain within 6 weeks of surgery	n (%N)	108 (98%)	11 (79%) N=14	<0.05
Ultrasound maximum ovarian diameter (mm)	Median (IQR)	85 (65-110) N=61	111 (87-160) N=9	0.17
MOD >100mm	n (%N)	25 (41%)	6 (67%)	0.02
Histopathology**		N=64	N=14	
Tubal pathology only	n (%N)	6 (9%)	3 (21%)	0.17
Endometrioma	n (%N)	1 (2%)	2 (14%)	0.02
Cystadenoma	n (%N)	19 (30%)	6 (37%)	0.31
Functional cyst	n (%N)	7 (11%)	1 (21%)	0.69
Stromal haemorrhage/infarction	n (%N)	8 (13%)	0	0.19
Mature teratoma	n (%N)	15 (23%)	0	0.04
Borderline tumour	n (%N)	1 (2%)	1 (7%)	0.20
Other ovarian tumours	n (%N)	7 (11%)	1	0.69

* "Pregnant" includes within 6 weeks postpartum or miscarriage **Histopathology: Tubal pathology includes para-tubal cysts and hydrosalpinx; Functional cysts include corpus luteum and haemorrhagic cysts; Other ovarian tumours include fibromas, Brenner tumour and inclusion cysts

References

- Tarrazza HM, Moore RD. Gynecologic causes of the acute abdomen and the acute abdomen in pregnancy. Surg Clin North Am. 1997;77(6):1371-1394.
- Lauffer MR. Ovarian and fallopian tube torsion. In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA, 2014.
- Way S. Ovarian cystectomy of twisted cysts. Lancet 1946;2:47-8.

