CASE SERIES

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Pediatric ovarian torsion: A case series

Yuvrajsingh D. Jadeja, Molina U. Patel, Radha Shukla, Ravi K. Bhatt, Smruti B. Vaishnav

ABSTRACT

Introduction: Ovarian torsion is rare problem in pediatric age group that must be included in the differential diagnosis of any girl with abdominal pain or pelvic or abdominal mass. Clinical presentation is non-specific and diagnosis is based on high index of suspicion. Ultrasonography scan with Doppler remains the most useful investigative tool. Timely diagnosis and surgical intervention is of utmost importance in preventing future reproductive morbidity. Case Series: Herein, we report a series of three cases of pediatric ovarian torsion, to enhance the importance its diagnosis and management in an attempt to salvage the organ. Conclusion: Ovarian torsion is a rare cause of acute abdomen or ovarian mass in pediatric girls. Ambiguous presentation and lack of symptom expression leads to delay in diagnosis and treatment. High suspicion for diagnosis and timely management is the key to this infrequent condition in pediatric age group.

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INTRODUCTION

Ovarian torsion is a rare pediatric gynecological presentation with cysts and benign or malignant lesions being its most common predisposing factors [1]. Studies have found an estimated incidence of 4.9 per 100,000 among females 1–20 years old [2]. Ovarian torsion is diagnosed in up to 2.7% of cases presenting with acute abdominal pain [3]. Due to this rarity and its tendency of being misdiagnosed, especially as acute appendicitis, it demands more attention as a differential of abdominal pain or mass [3]. Difficulty in expression of symptomatology and its ambiguous presentation makes its timely diagnosis and management a challenge. Thus if missed, a young female's future fertility is compromised. The purpose of this case series is to review clinical presentation and to bring light on ovarian torsion as one of the important diagnosis in case of acute abdomen and ovarian masses in case of adolescent girls.

CASE SERIES

Case 1

An 11-year-old female with a history of on and off lower abdominal pain for two weeks associated with multiple episodes of vomiting, presented to gynec outpatient department with stable vital parameters. Per abdominal examination revealed a well-defined tender pelvic mass corresponding to 12-week to 14-week uterine size with restricted mobility. Ultrasonography reported a left ovarian mass of 8.8x4.4 cm with internal echos and minimal free fluid in the abdomen. The panel of ovarian tumor markers was suggestive of benign ovarian lesion. Elective exploratory laparotomy was planned. Intraoperative findings revealed a 360-degree left ovarian torsion with signs of necrosis (Figure 1). Thus, left salpingo-oophorectomy was performed. Histopathological examination suggested infraction of left ovarian cyst and fallopian tube. Patient recovered well and was discharged on third postoperative day.

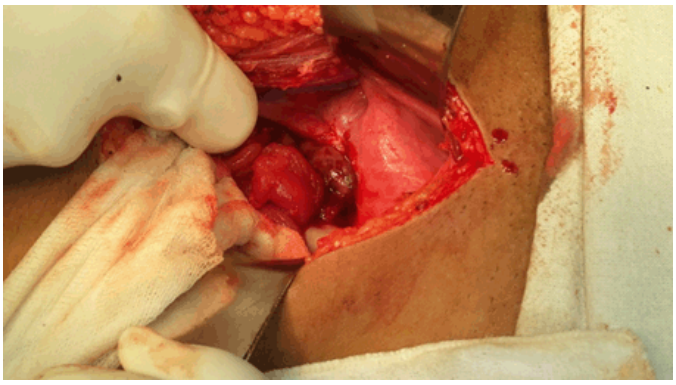

Figure 1: Pedical of the ovarian mass showing 360-degree torsion.

Case 2

A six-year-old female presented to trauma care with chief complain of lower abdominal pain, sharp shooting in nature associated with multiple episodes of nausea and vomiting for two days. Her vital parameters were stable. On per abdominal examination; tenderness, guarding, and rigidity were present along with vague mass in right iliac fossa. Ultrasonography revealed a 4.9x3.8 cm echogenic mass with multiple cysts in the midline, with Doppler showing absent flow within the lesion suggestive of right ovarian torsion. Emergency laparotomy followed by salpingo-oophorectomy was performed, in view of old torsion. Underdeveloped vertical band of uterus and elongated laxed uterine supports were noted intraoperatively (Figure 2). Histopathological examination suggested serous cyst adenoma with changes of infarction of left ovary. Other associated congenital anomalies were ruled out and she was discharged on fourth postoperative day.

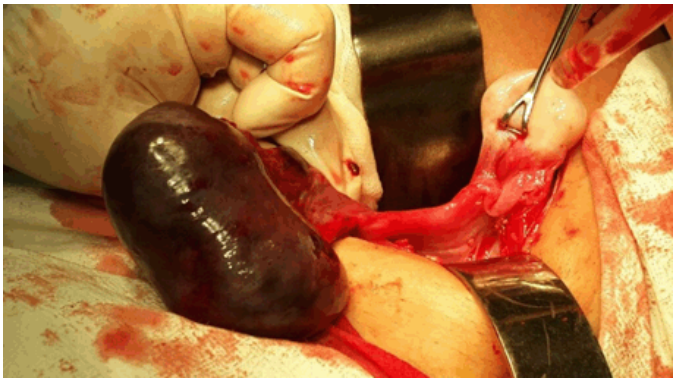

Figure 2: Right ovarian torsion with complete necrosis of tissue and underdeveloped uterus.

Case 3

A 16-year-old female presented to emergency care with history of lower abdominal pain and low-grade fever for two days. She was on oral contraceptive pills for three cycles with her last menstrual period dating 20 days back. On examination, she was vitally stable; signs of guarding and rigid abdomen were present. Ultrasonography showed an 8.3x7.5 cm left adnexal cyst with absent vascularity. Emergency laparotomy followed by left oophorectomy was performed in view of the above findings. Histopathological examination report suggested a serous cyst adenoma with changes of torsion of left ovary. She was discharged on third postoperative day. Eight months later she presented again to trauma care with history of pain in right iliac region for few hours. Anechoic cystic lesions with minimal peripheral vascularity in right adnexa were seen on Ultrasonography. In consideration of her past history, and present symptomatology, emergency laparotomy was performed revealing a 360-degree torsion of right ovary. Detorsion followed by cystectomy and ovariopexy with right round ligament plication was performed in an attempt to preserve her only ovary and future fertility.

DISCUSSION

Ovarian torsion is rare in childhood but includes broad array of underlying diagnosis that has variable and non-specific presenting symptoms [4]. They span from functional ovarian cyst to ovarian torsion and from benign to highly aggressive neoplasms. Distinguishing patients with uncomplicated ovarian cysts torsion, acute appendicitis, or other surgical lesions can be challenging. Although Ultrasonography is a useful tool in confirming diagnosis, delay in seeking medical help, false negative results, and inaccurate symptom expression, reinforces role of timely and early operative intervention (laparoscopy/laparotomy) [5]. In all the above three cases, delay in seeking medical help and vagueness of symptomatology is seen. Intraoperatively old chronic torsion, which formed ovarian masses due to congestion

and edema were appreciated which was preoperatively believed to be an adnexal tumor and evaluated and treated on the lines of ovarian tumors. Diagnostic laparoscopy with conservative management, in the form of detorsion is the recommended treatment of choice. Though detorsion is currently recommended as opposed to oophorectomy, long delay in operative intervention and severe necrosis of ovarian tissue with dense adhesions in these cases made it difficult to salvage the organ [6–9]. Urgent surgical intervention is of utmost importance, better outcomes have been shown if surgical intervention is made within 36 hours [10, 11]. Ovariopexy of the salvaged ovary or prophylactic ovariopexy of the contralateral ovary in these cases is still a matter of debate with no firm consensus, no trial in literature till date has evaluated its efficacy. Ovariopexy can be offered as an option to prevent oophorectomy in case of repeat ovarian torsion or in cases of bilateral adnexal torsion [10, 11], evident elongated and laxed adnexal ligaments with absent uterus and other associated pelvic anatomical abnormality also seem to be a fair indication. The underlying pathology in all cases was found to be benign. Thus, reiterating the fact that most ovarian pathology in children are benign and can be managed by ovarian preserving operations, provided early medical attention is sought and timely intervention is planned by the attending emergency care provider.

CONCLUSION

Ovarian torsion is a rare cause of abdominal pain in children. It can result in infarction of ovary and fallopian tube and should be considered in any girl with acute abdomen. Ovarian torsion presenting as adnexal mass is extremely rare but possible diagnosis in adolescent girls. Timely diagnostic imaging and appropriate surgical intervention could thus help salvage this important reproductive organ and preserve fertility.

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Author Contributions

Yuvrajsingh D. Jadeja – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Molina U. Patel – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Radha Shukla – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Ravi K. Bhatt – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Smruti B. Vaishnav – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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