TPM Vol. 32, No. S1, 2025
ISSN: 1972-6325
https://www.tpmap.org/

Open Access

A LARGE MUCINOUS CYSTADENOMA OF THE OVARY IN ADOLESCENT GIRL

KALPANA L[1*], JAYASHREE K[2], DR. T. MANIGANDAN[3]
POST GRADUATE[1*], DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, SAVEETHA MEDICAL COLLEGE, SAVEETHA UNIVERSITY, CHENNAI, TAMIL NADU, INDIA
HEAD AND PROFESSOR[2], DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY , SAVEETHA MEDICAL COLLEGE, SAVEETHA UNIVERSITY, CHENNAI, TAMIL NADU , INDIA
[3] PROFESSOR, DEPARTMENT OF ORAL MEDICINE & RADIOLOGY, SREE BALAJI DENTAL COLLEGE & HOSPITAL, CHENNAI, INDIA

Abstract

Mucinous cystadenomas are benign epithelial ovarian tumors that are rarely observed in adolescents, making their presentation a clinical challenge. These tumors can grow to substantial sizes, often occupying the entire abdominal cavity. We present a case of a 17-year-old girl who presented with a two-month history of abdominal distension. There were no associated symptoms of abdominal pain, vomiting, or bowel/bladder disturbances. On examination, a large abdominal mass extending from the pelvis to the xiphisternum was noted. Ultrasonography revealed a giant abdominopelvic cystic lesion measuring 55 × 18 × 60 cm. MRI further characterized the lesion as a large, thin-walled cystic structure arising from the left ovary with features suggestive of a mucinous cystadenoma, causing right hydroureteronephrosis due to mass effect. The patient underwent laparotomy with frozen section analysis, which confirmed a borderline mucinous neoplasm. Surgical management included left salpingo-oophorectomy, pelvic lymph node dissection, para-aortic node sampling, appendectomy, and infracolic omentectomy. Histopathological examination confirmed a benign mucinous cystadenoma with focal proliferation of less than 10%. Postoperative recovery was uneventful, and the patient was discharged on the 8th postoperative day with advice for regular follow-up. This case highlights the importance of early diagnosis, multidisciplinary management, and tailored surgical approaches in managing large ovarian tumors in adolescents.

INTRODUCTION

Mucinous cystadenomas are benign epithelial ovarian tumors distinguished by their mucin-filled cystic architecture. They are significant contributors to the spectrum of ovarian neoplasms, accounting for approximately 15–20% of all ovarian tumors. These tumors are typically diagnosed in women aged between 30 and 50 years, with their occurrence in adolescents being notably rare. Their large size and potential to occupy the entire abdominal cavity make them clinically significant, particularly in younger patients, where diagnostic and treatment strategies must be carefully tailored [1,2].

The presentation of ovarian tumors, including mucinous cystadenomas, varies significantly across age groups. In pediatric and adolescent populations, ovarian masses are relatively uncommon, and among these, epithelial tumors like mucinous cystadenomas are even rarer. Such masses may manifest as asymptomatic enlargements or cause non-specific symptoms like abdominal distension, pain, or discomfort, depending on their size and location. Their slow-growing nature often results in delayed presentation, further complicating management in younger individuals [3,4].

In adolescents, the rarity of ovarian neoplasms means that clinical presentation can be easily mistaken for other gastrointestinal or gynecological conditions. Symptoms like lower abdominal pain, increased abdominal girth, and a palpable mass are among the most common complaints. Large cystadenomas, when neglected, can lead to complications such as ovarian torsion, rupture, or compression of adjacent organs. These complications emphasize the need for timely diagnosis and appropriate management to prevent morbidity and preserve future fertility [5,6].

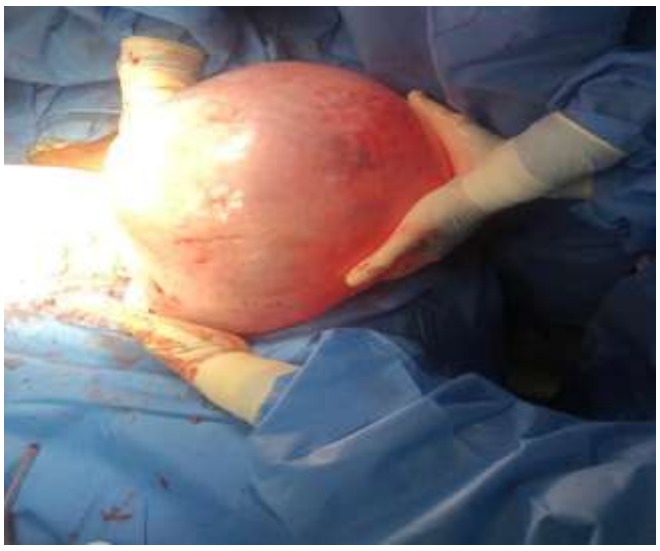
The diagnosis of ovarian masses in adolescents requires a combination of clinical evaluation and advanced imaging modalities. Ultrasonography, especially transabdominal ultrasound, is the preferred initial imaging tool for pediatric and adolescent patients due to its non-invasive nature and effectiveness in characterizing ovarian masses. Mucinous cystadenomas typically appear as multilocular cystic structures with thin septations on imaging. In ambiguous cases, magnetic resonance imaging (MRI) can provide additional detail to aid in diagnosis. Tumor markers, such as CA-125 and carcinoembryonic antigen (CEA), though non-specific, may occasionally aid in differentiating benign from malignant masses [7,8]. The management of ovarian mucinous cystadenomas in adolescents is centered on a conservative approach that aims to preserve ovarian function. Laparoscopic surgery is often the preferred intervention, allowing for the removal of the tumor with minimal disruption to surrounding

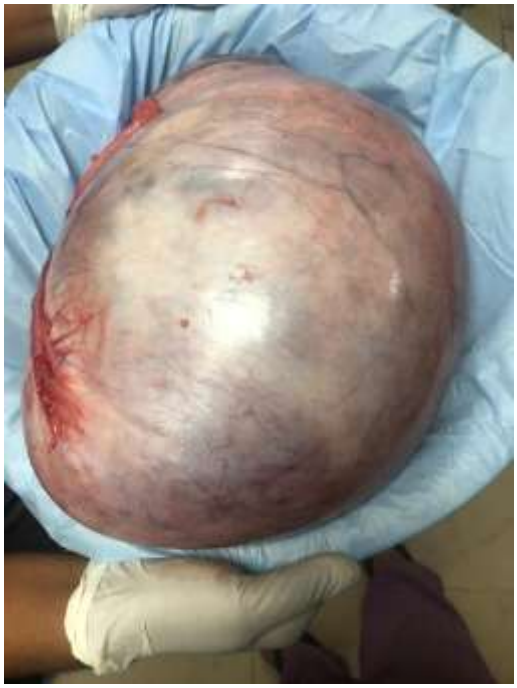
structures. Enucleation of the cyst while preserving ovarian tissue is particularly important in younger patients to maintain hormonal balance and fertility potential. In cases of extremely large cystadenomas, laparotomy may be required. Histopathological examination post-surgery remains the definitive diagnostic tool [9,10].

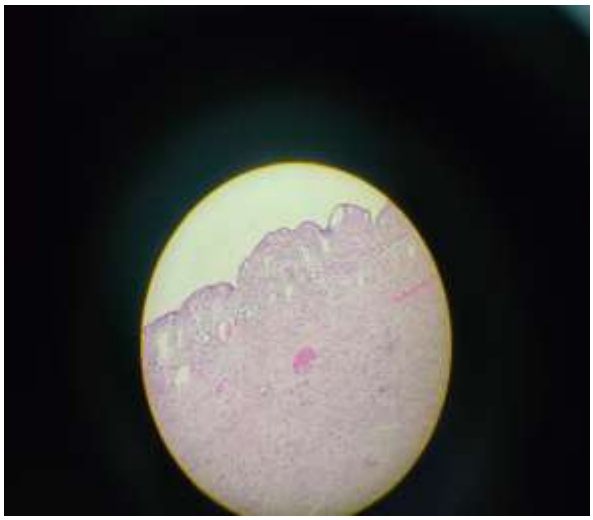
This report discusses a rare case of a large mucinous cystadenoma in an adolescent girl, focusing on the clinical challenges, diagnostic considerations, and surgical management strategies. The patient presented with significant abdominal distension and discomfort, raising concerns about the nature of the ovarian mass. Following a comprehensive evaluation, the patient underwent successful surgical removal of the cystadenoma, with histopathological confirmation of its benign nature. This case underscores the importance of heightened clinical awareness and individualized management approaches in addressing such uncommon but clinically significant presentations in young patients [11,12]. The occurrence of large mucinous cystadenomas in adolescents highlights several key considerations for clinical practice. First, the rarity of such tumors necessitates a high index of suspicion when evaluating adolescent patients with abdominal masses. Second, the choice of diagnostic and surgical techniques should be tailored to minimize complications and optimize long-term reproductive health outcomes. Finally, this case emphasizes the importance of a multidisciplinary approach involving gynecologists, radiologists, and pathologists to ensure accurate diagnosis and effective management [13,14].

CASE REPORT

A 17-year-old / unmarried / came with complaints of abdominal distension for the past 2 months. She had no complaints of pain in the abdomen, vomiting, or bowel or bladder disturbances. The patient's general condition was normal. An abdominal examination revealed a mass extending from the pelvis to the xiphisternum with a smooth surface and firm consistency, and lower margins were not felt. Ultrasonography was done, and it showed a large abdominal pelvic cystic lesion of size 55*18*60cm noted occupying the entire abdomen. All baseline investigations were done, and tumour markers were found to be normal. MRI contrast -abdomen and pelvis was made, which showed a large abdominopelvic, T2/SPAIR hyperintense, T1 hypointense thin-walled cystic lesion with a smooth margin measuring 16*25*30cm, likely arising from the left ovary. Few thin linear, enhancing, complete septations were noted in the inferior aspect of the lesion. The left ovary could not be visualized separately. The lesion was seen occupying the entire lower abdomen and pelvic cavity. Right hydroureteronephrosis -likely due to mass effect. The patient was taken up for Laparotomy, and A frozen section was done, which showed -Borderline mucinous neoplasm; hence, proceeded with - left scalping oophorectomy with pelvic lymph node dissection with para-aortic node sampling with appendicectomy with infra colic omentectomy done. The post-operative period was uneventful. The patient was symptomatically better and haemodynamically stable and, hence, was discharged on POD 8. Histopathology suggested benign mucinous cystadenoma with focal proliferation of less than 10%. The patient was advised for regular follow-up.







DISCUSSION

The presented case of a 17-year-old adolescent with a large mucinous cystadenoma of the ovary highlights significant clinical and management challenges in addressing rare ovarian tumors in this age group. Mucinous cystadenomas are among the benign epithelial ovarian tumors that, despite their low prevalence in adolescents, necessitate heightened clinical awareness to enable timely diagnosis and intervention.

This patient's presentation with abdominal distension but without pain, gastrointestinal, or urinary symptoms aligns with the typical presentation of large ovarian tumors in adolescents. The absence of specific symptoms often leads to delayed medical consultation, allowing the tumor to grow to considerable size, as observed in this case, with the mass measuring 55 × 18 × 60 cm on ultrasonography. The mass effect observed, including right hydroureteronephrosis, further underscores the significance of early recognition of such conditions to prevent

secondary complications. Ultrasonography and MRI proved instrumental in diagnosing the lesion and its characteristics. The lesion's multilocular appearance with thin septations is consistent with features of mucinous cystadenomas. MRI provided crucial information, including the lesion's origin from the left ovary and its effect on adjacent structures. The normal baseline tumor markers, including CA-125 and CEA, supported the benign nature of the mass, although these markers are not definitive and must be interpreted within the broader clinical and imaging context [3,4].

Surgical intervention remains the cornerstone of treatment for large mucinous cystadenomas. In this case, laparotomy was chosen, reflecting the tumor's size and complexity, along with the need for thorough intraoperative assessment. A frozen section was performed to evaluate the tumor's nature, which is critical in guiding the extent of surgical intervention. The initial findings of a borderline neoplasm led to a comprehensive surgical approach, including left salpingo-oophorectomy, pelvic lymph node dissection, para-aortic node sampling, appendectomy, and infracolic omentectomy. The preservation of ovarian function is a key consideration in adolescents to maintain future fertility and hormonal function. While unilateral oophorectomy was necessary due to the tumor's involvement, the contralateral ovary was preserved, and measures were taken to minimize surgical morbidity. The histopathological findings of benign mucinous cystadenoma with focal proliferation (<10%) justified the conservative approach [7,9]. The patient's uneventful postoperative recovery and resolution of symptoms demonstrate the effectiveness of the surgical intervention. Regular follow-up is critical to monitor for recurrence, even in benign cases, as focal proliferative changes may increase the risk of recurrence or malignant transformation over time. Surveillance protocols typically include periodic imaging and clinical evaluations [8,12].

This case highlights the importance of a multidisciplinary approach involving gynecologists, radiologists, pathologists, and surgeons to manage ovarian tumors effectively in adolescents. The rarity of large mucinous cystadenomas in this population requires a high index of suspicion and a tailored diagnostic and therapeutic approach. Imaging modalities such as MRI and intraoperative frozen sections are indispensable tools in guiding management decisions.

Large mucinous cystadenomas, if left untreated, can cause significant morbidity due to mass effect on adjacent structures, potential torsion, or rupture. Early detection and timely intervention not only alleviate symptoms but also prevent long-term complications, including loss of ovarian function. This case highlights the need for healthcare providers to consider ovarian masses in the differential diagnosis of adolescents presenting with abdominal distension, even in the absence of pain or overt systemic symptoms [13,14]. Preserving fertility is a primary concern in managing ovarian tumors in adolescents. Although this patient underwent unilateral salpingo-oophorectomy, the preservation of the contralateral ovary was a crucial aspect of surgical planning. Advances in minimally invasive surgical techniques and fertility-sparing procedures continue to improve outcomes for young patients with ovarian tumors [1,2].

The findings from similar case reports highlight the variability in presentation, diagnosis, and management of mucinous cystadenomas in adolescents. Chen et al. described a 14-year-old girl with a mucinous cystadenocarcinoma diagnosed following MRI evaluation and confirmed through histopathology after laparoscopic salpingo-oophorectomy. The patient remained recurrence-free during follow-up, emphasizing the importance of early intervention to prevent recurrence [15].

Kumar et al. reported on a 16-year-old girl with a large, torsed mucinous cystadenoma requiring emergency surgery. Histopathology confirmed a benign lesion, underscoring the importance of prompt surgical management to prevent complications like ischemia and necrosis [16]. Similarly, Gupta et al. presented a case of a 16-year-old girl with a giant mucinous cystadenoma, where cyst decompression and cystectomy were successfully performed. This case highlighted the value of conservative surgical techniques in preserving ovarian function [17].

Other reports, such as Patel et al., described the management of large mucinous cystadenomas with exploratory laparotomy and adnexectomy, further illustrating the role of careful imaging and surgical planning [18]. Singh et al. documented a premenarchal girl with a giant mucinous cystadenoma, emphasizing the rarity of such presentations and the need for fertility-preserving approaches in this population [19]. Sharma et al. detailed the surgical management of a 13-year-old girl with a 12 kg mucinous cystadenoma, showcasing the importance of timely intervention for extensive tumors to restore quality of life [20].

This case emphasizes the clinical significance of large mucinous cystadenomas in adolescents despite their rarity. The successful management of this patient demonstrates the importance of a comprehensive and multidisciplinary approach, utilizing advanced imaging, intraoperative assessment, and individualized surgical planning.

Heightened awareness of such conditions among clinicians can lead to timely diagnosis and intervention, ensuring favorable outcomes and preserving reproductive health.

CONCLUSION

This case highlights the rare occurrence of large mucinous cystadenomas in adolescents and underscores the critical importance of early diagnosis and individualized management. The presentation of an abdominal mass in young patients requires a high index of suspicion and the use of advanced imaging modalities to differentiate between benign and malignant ovarian tumors. Surgical intervention, as demonstrated in this case, remains the cornerstone of treatment, focusing on preserving ovarian function and minimizing long-term complications. The successful outcome, in this case, reinforces the importance of a multidisciplinary approach, integrating gynaecological, radiological, and surgical expertise to ensure comprehensive care. Regular follow-up is essential to monitor for recurrence or late complications, even in histologically benign tumors. This case, along with findings from similar reports, contributes to the growing understanding of optimal diagnostic and therapeutic strategies for managing rare ovarian tumors in adolescents. Prompt and tailored interventions not only resolve immediate clinical concerns but also safeguard the reproductive and hormonal health of young patients, ensuring a better quality of life.

REFERENCES

1. Kurman RJ, Shih IeM. The origin and pathogenesis of epithelial ovarian cancer: a proposed unifying theory. *Am J Surg Pathol*. 2010;34(3):433-43. doi:10.1097/PAS.0b013e3181cf3d79.
2. Torre LA, Trabert B, DeSantis CE, et al. Ovarian cancer statistics, 2018. *CA Cancer J Clin*. 2018;68(4):284-296. doi:10.3322/caac.21456.
3. Motta E, Fachetti F, Papa M, et al. Ovarian epithelial tumours in the pediatric age group: a clinicopathological analysis of 12 cases. *Eur J Obstet Gynecol Reprod Biol*. 2014;181:233-237. doi:10.1016/j.ejogrb.2014.08.033.
4. Lalwani N, Shanbhogue AK, Fasih N, et al. Current update on borderline ovarian neoplasms. *AJR Am J Roentgenol*. 2010;194(2):330-336. doi:10.2214/AJR.09.4012.
5. Altchek A, Deligdisch L, editors. Pediatric, Adolescent and Young Adult Gynecology. Philadelphia: Elsevier Saunders; 2009.
6. Dietrich JE, Prasad MM. Benign ovarian masses. *Pediatr Ann*. 2013;42(6):250-255. doi:10.3928/00904481-20130522-11.
7. Kinkel K, Hricak H, Lu Y, et al. US characterization of ovarian masses: a meta-analysis. *Radiology*. 2000;217(3):803-811. doi:10.1148/radiology.217.3.r00dc38803.
8. Exacoustos C, Luciano D, Corbett B, et al. A practical guide to the use and interpretation of ultrasonography in early pregnancy. *J Ultrasound Med*. 2015;34(1):1-11. doi:10.7863/ultra.34.1.1.
9. Schroeder B, Vallejo N, Wilson JL. Management of benign ovarian masses. *J Pediatr Adolesc Gynecol*. 2015;28(6):409-416. doi:10.1016/j.jpag.2014.11.003.
10. Berek JS, Novak E. Berek & Novak's Gynecology. 15th ed. Philadelphia: Wolters Kluwer; 2012.
11. Guerriero S, Alcázar JL, Pascual MA, et al. Clinical and sonographic features of ovarian tumors in pediatric and adolescent patients. *Ultrasound Obstet Gynecol*. 2016;48(1):55-61. doi:10.1002/uog.15758.
12. Lee NK, Kim S, Lee JW, et al. CT and MR imaging of ovarian tumors with emphasis on differential diagnosis. *Radiographics*. 2010;30(5):1553-1570. doi:10.1148/rg.306105522.
13. Sah SP, Uprety D, Rani S. A study of ovarian tumors in childhood and adolescence in Nepal. *J Pediatr Adolesc Gynecol*. 2005;18(6):379-383. doi:10.1016/j.jpag.2005.07.002.
14. Ray M, Mandal K, Dasgupta S. Rare presentation of mucinous cystadenoma of ovary in adolescence: A case report. *Int J Case Rep Images*. 2016;7(8):491-494. doi:10.5348/100051CR2016RA.

15. Chen Y, et al. Management of ovarian tumors in adolescents: A case report of mucinous cystadenocarcinoma. BMC Women's Health. 2023;23:251.

16. Kumar S, et al. Emergency management of a torsed ovarian cystadenoma in an adolescent: A case report. Cureus. 2023;15:e177783.

17. Gupta R, et al. Conservative surgical management of giant mucinous cystadenoma in a 16-year-old girl. Int J Reprod Contracept Obstet Gynecol. 2021;10:3216-21.

18. Patel K, et al. Large ovarian mucinous cystadenoma in an adolescent: A rare case report. Asian Res J Gynaecol Obstet. 2022;10:43-7.

19. Singh N, et al. Uncommon presentation of ovarian mucinous cystadenoma in a premenarchal girl: Case report. J Pediatr Surg. 2020;55:1204-6.

20. Sharma M, et al. Giant mucinous cystadenoma in a 13-year-old girl: A case report. Int J Reprod Contracept Obstet Gynecol. 2020;9:4972-5.