International Surgery Journal
Jadaon AS. Int Surg J. 2020 Sep;7(9):3124-3126
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20203807

Case Report

Urachal cyst in adulthood: case report with detailed laparoscopic management and review of literature

Abhiyutthan Singh Jadaon*

Abhiyutthanum Hospital, Kota, Rajasthan, India

Received: 28 May 2020
Revised: 09 July 2020
Accepted: 14 July 2020

***Correspondence:**
Dr. Abhiyutthan Singh Jadaon,
E-mail: abhiyutthan.singh@gmail.com

ABSTRACT

An urachal cyst anomaly occurs in approximately 1/5,000 births. Its treatment is surgical excision. We present a case report of 16-year-old female with presenting complaints of lower abdominal pain with burning micturition and increased urinary frequency. Computed tomography revealed a 40×38 mm low-density cyst image located in midline cranial to the bladder apex, suggesting the diagnosis of urachal cyst. Traditional open surgery was used for its excision, but now minimally invasive approaches have been used more frequently to minimize the morbidity. We did a trans-abdominal preperitoneal approach, which aided in both the purpose of diagnostic laparoscopy and also utilize the advantage of preperitoneal surgery.

Keywords: Urachal cyst, Laparoscopic management, Transabdominal-preperitoneal approach

INTRODUCTION

The urachus is the embryological remnant of the allantois; it communicates the apex of the bladder with the umbilicus. In most cases it gets obliterated shortly after birth. Rarely the whole tract or a portion may persist and present as a patent urachus, urachal cyst, and vesicourachal diverticulum or urachal sinus. A urachal cyst, the most common anomaly, occurs in approximately 1/5,000 births.[1,2] Male: female ratio is 3:1.[3] Complications of this have been described, including infection, formation of urachal calculi, and the potential risk for a malignant change of the, otherwise, benign urachal remnant.[4-7]

A surgical excision is the recommended management these embryologic defects in symptomatic cases. Considering the potential complications and the risk of recurrence and risk of adenocarcinoma in the unresected remnant of the urachal cyst if treated with drainage.[8]

Traditional open surgery was used, but now minimally invasive approaches have been used more frequently to minimize the morbidity.[9-13]

We did a trans-abdominal preperitoneal approach, which aided in both the purpose of diagnostic laparoscopy and also utilize the advantage of preperitoneal surgery.

CASE REPORT

A 16-year-old unmarried female with normal secondary sexual characters was referred to us for lower abdominal pain with burning micturition and increased urinary frequency. The patient had a good physical status and did not have any previous surgery. Physical examination showed suprapubic tenderness with rest being normal. Hematological test were normal and urine microscopy revealed pus cells. Ultrasound showed features suggestive of urachal cyst of 4 cm × 3.8 cm. A computed tomography revealed a 40 cm × 38 mm low-density cyst image located

in midline cranial to the bladder apex, suggesting the diagnosis of urachal cyst (Figure 1).

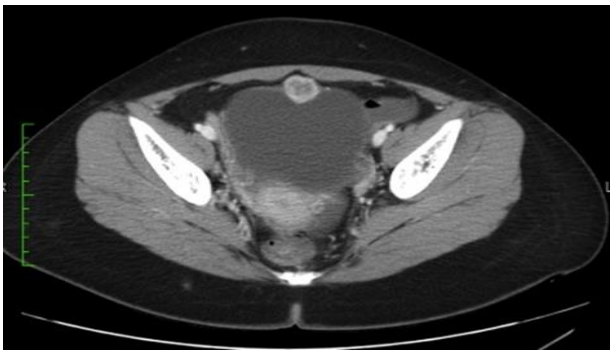

Figure 1: Image of a urachal cyst.

The preoperative laboratory tests were normal. A total laparoscopic preperitoneal excision of the urachal cyst was planned.

Laparoscopy surgery with a 10 mm trocar was inserted 4 cm over the umbilicus for 3D 30-degree laparoscope. A 4 cm preperitoneal cystic mass of the lower urachus was detected. Three accessory 5 mm trocars were placed, two in midclavicular line (1 cm supra-umbilical) and one placed in left iliac fossa (lateral to inferior epigastric vessel). Surgeon standing on left side of patient. First, the peritoneum was incised at the level of umbilicus cranial to the cyst and pre-peritoneal plane was created by harmonic. Dissection was then proceeded caudally and laterally up to space of Retzius. Harmonic was used for sealing and cold scissors allowed in-toto complete enucleation of the cyst and excision of the fibrotic tract located cephalad along with cuff of urinary bladder comprising the muscular and serosa layers of the bladder for the caudal limit. The bladder was sutured transversally in 2 layers, first layer continuous intracorporeal polygalactin 3–0 suture and second layer with interrupted intracorporeal polygalactin 3–0 suture. The specimen was removed in a bag through 10 mm camera port (Figure 2). Urinary bladder leak test showed no leak. Foleys was kept for 4 days post op and no abdominal drain was put. Postoperative course was uneventful (Figure 3).

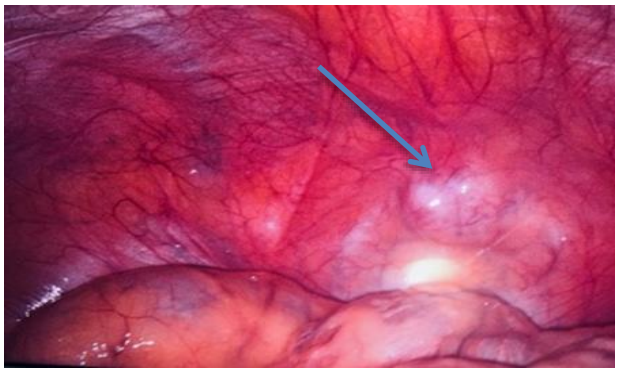

Figure 2: Intra operative view (arrow pointing towards the urachal cyst).

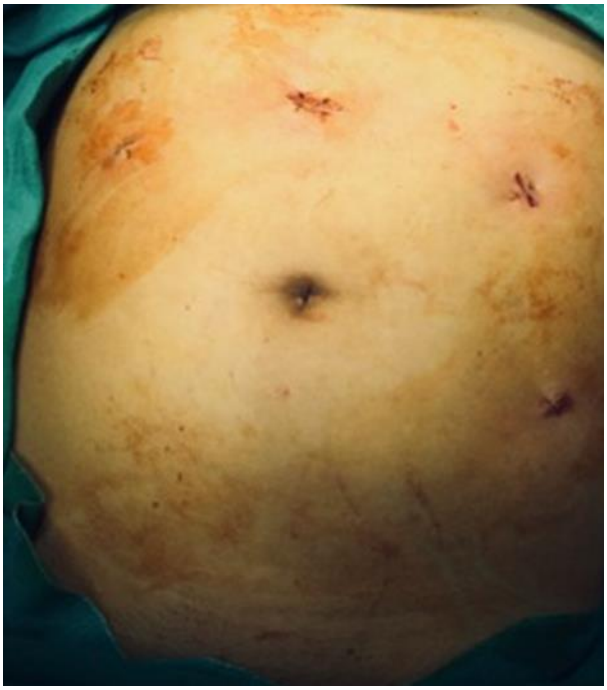

Figure 3: Port positions with final postoperative picture.

DISCUSSION

Urachal congenital anomalies are due to an abnormal involution of the allantois. The most common type of urachal remnant is a urachal cyst. The most relevant complications of urachal cysts include infection with possible rupture in the peritoneal cavity leading to peritonitis and the risk of malignant degeneration. The treatment for congenital patent urachus is the excision of the urachal tract, including the parietal peritoneum, from the umbilicus to the bladder.

Symptomatic urachal remnants have been traditionally managed by open surgery with midline infraumbilical incision. This approach is usually associated with morbidity of persistent pain and negative cosmetic results. The first laparoscopic excisions of a urachal cyst reported by Siegel et al in 1994.[14]

Two major laparoscopic techniques have been described for the surgical management of urachal remnants. First being transperitoneal (transabdominal) technique, which allows the examination of the abdominal cavity both to rule out other entities and to treat concomitant findings. Other being pre-peritoneal approach that Le Picard et al exploited as the unique preperitoneal localization of the urachal cyst at the Retzius space, with an easy blunt dissection and a very selective use of electrocoagulation, which remains a feasible option in cases of isolated urachal pathology.[15]

We did a transabdominal preperitoneal approach, which aided in both the purpose of diagnostic laparoscopy and also utilize the advantage of preperitoneal surgery.

CONCLUSION

Laparoscopic urachal surgery is safe, technically feasible and efficacious. Furthermore, it allows a short hospital stay and prompt recovery. The transabdominal preperitoneal approach, which aided in both the purpose of diagnostic laparoscopy and also utilizes the advantage of preperitoneal surgery, is a better technique to perform this surgery.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Blichert-Toft M, Nielsen OV. Diseases of the urachus simulating intra-abdominal disorders. Am J Surg. 1971;122:123-8.
2. Goldman IL, Caldamone AA, Gauderer M, Hampel N, Wesselhoeft CW, Elder JS. Infected urachal cyst: a review of 10 cases. J Urol. 1988;140:375-8.
3. Bunch PT, Kline-Fath BM, Imho VSC, Calvo-Garcia MA, Crombleholme TM, Donnelly LF. Allantoic cyst: a prenatal clue to patent urachus. Pediatr Radiol. 2006;36:1090-5.
4. Macneily AE, Koleilat N, Kiruluta HG, Homsy YL. Urachal abscesses: protean manifestations, their recognition and management. Urology. 1992;40:530-5.
5. Seo IY, Han DY, Oh SJ, Rim JS. Laparoscopic excision of a urachal cyst containing large stones in an adult. Yonsei Med J. 2008;49:869–71.
6. Cadeddu J, Boyle K, Fabrizio M, Schulam PG, Kavoussi LR. Laparoscopic management of urachal cysts in adulthood. J Urol. 2010;164:1536-9.
7. Navarrete S, Sanchez-Ismayel A, Sanchez-Salas RE, Sanchez R, Llopis SN. Treatment of urachal anomalies: a minimally invasive surgery technique. JSLS. 2005;9:422-5.
8. Blichert-Toft M, Nielsen OV. Diseases of the urachus simulating intra abdominal disorders. Am J Surg. 1971;122:123-8.
9. Chiarenza SF, Scarpa MG, D'Agostino S, Fabbro MA, Novek SJ, Musi L. Laparoscopic excision of urachal cyst in pediatric age: report of three cases and review of the literature. J Laparoendosc Adv Surg Tech A. 2009;19(1):183-6.
10. Yamzon J, Kokorowski P, De Filippo RE, Chang AY, Hardy BE, Koh CJ. Pediatric robot-assisted laparoscopic excision of urachal cyst and bladder cuff. J Endourol. 2008;22:2385-8.
11. Pesce C, Costa L, Musi L, Campobasso P, Zimbardo L. Relevance of infection in children with urachal cysts. Eur Urol. 2000;38:457-60.
12. Khurana S, Borzi PA. Laparoscopic management of complicated urachal disease in children. J Urol. 2002;168:1526-8.
13. Stone NN, Garden RJ, Weber H. Laparoscopic excision of a urachal cyst. Urology. 1995;45:161-4.
14. Siegel JF, Winfield H, Valderrama E, Smith A. Laparoscopic excision of urachal cyst. J Urol. 1994;151:1631-3.
15. LePicard P, Carion G. Extraperitoneal laparoscopic treatment of urachal cyst. J Chir. 2002;139:286-7.

Cite this article as: Jadaon AS. Urachal cyst in adulthood: case report with detailed laparoscopic management and review of literature. Int Surg J. 2020;7(9):3124-6.