

FROM DIAGNOSIS TO RECOVERY: A CASE REPORT OF AN INFECTED URACHAL CYST IN AN ELDERLY MALE

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ABSTRACT

Objective: This case report was aimed to present an infected urachal cysts in an elderly male. **Case(s) Presentation:** We are presenting a case of an infected urachal cyst actively draining pus through the umbilicus in a 72-year-old male. He was managed by surgical excision of that urachal cyst completely along with omphalectomy after initial intravenous antibiotics and investigations. **Discussion:** In this instance, the patient complained of suprapubic discomfort, exudation of pus from the umbilical cord, and fever. Due to the variety of manifestations, the urachal cyst can frequently be interpreted as Meckel diverticulitis, pelvic inflammatory disorder, appendicitis, or infection of the urinary system. The probability of cancer ought to be weighed up while addressing an elderly with a urachal cyst. Urachal malignant tumor, which develops from the remaining epithelia of the urachal abnormalities, has an awful prognosis. The most typical presentation is hematuria. **Conclusion:** This case emphasizes the need for the inclusion of urachal anomalies in the differential diagnosis of abdominal discomfort with umbilical discharge even in the elderly patients.

Keywords: Urachal cyst, elderly male, excision.

ABSTRAK

Tujuan: Laporan kasus ini bertujuan untuk menyajikan kista urachal yang terinfeksi pada seorang pria lanjut usia. **Presentasi Kasus:** Kami menyajikan kasus kista urachal yang terinfeksi secara aktif mengeluarkan nanah melalui umbilikus pada seorang pria berusia 72 tahun. Ia ditangani dengan eksisi bedah kista urachal secara tuntas dengan omphalektomi setelah pemberian antibiotik intravena awal dan pemeriksaan penunjang. **Diskusi:** Dalam kasus ini, pasien mengeluhkan ketidaknyamanan suprapubik, eksudasi nanah dari tali pusar, dan demam. Karena beragamnya manifestasi, kista urachal sering kali dapat diartikan sebagai divertikulitis Meckel, gangguan radang panggul, radang usus buntu, atau infeksi saluran kemih. Kemungkinan kanker harus dipertimbangkan saat menangani seorang lanjut usia dengan kista urachal. Tumor ganas urachal, yang berkembang dari epitel yang tersisa dari kelainan urachal, memiliki prognosis yang buruk. Presentasi yang paling umum adalah hematuria. **Simpulan:** Kasus ini menekankan perlunya mempertimbangkan anomali urachal dalam mendiagnosis ketidaknyamanan perut dengan keluarnya cairan dari pusar pada pasien lanjut usia.

Kata kunci: Kista urakal, pria lanjut usia, eksisi.

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INTRODUCTION

Urachal cysts are uncommon in the elderly age group patients. They normally present in early infancy or may reach elderly age in very few cases. The allantois is connected with the urinary bladder (UB) during early growth and development. The luminal cavity amid the umbilical cord (UC) and the bladder's apex is obliterated to become a thick cord. The cord fibrosis develops and the "umbilical ligament" (median) is formed in adults.¹

The urachus typically obliterates amidst the 4th and 5th months of conception.² These malformations are categorized into 4 distinct groups concerning the persistence of the lumen of the allantois during embryonic development. Urachal Cyst, urachal Sinus, urachal fistula, and urachovesical diverticulum are the malformations.²

Urachal defects left unattended during a child's development may become evident as a scenario known as urachal residual diseases (acquired), which can manifest as an infection or a

malignancy.³ These anomalies are more common in men.² These anomalies occur at 1:5000 in adults and 1:1.50.000 in infants.³

The most expected urachal abnormality is patent urachus, followed by the urachal cyst.⁴ In most situations, surgery is implied for persistent urachal remains that have been exacerbated by infection or cancer in later life.

Various imaging techniques are employed to evaluate suspected urachal anomalies, with Ultrasonography (USG) being the initial choice. If ultrasonography is not feasible, other imaging techniques like computed tomography scan(CT), fistulogram, and magnetic resonance imaging (MRI), are considered alternatives.⁵

CASE(S) PRESENTATION

A 72-year-old elderly male with a previous history of hypertension along with ischemic heart disease came to the outpatient facility with complaints of discomfort in the abdomen, exudation of pus from the umbilicus (Figure 1) and high grade fever over 2 weeks.



Figure 1. Showing purulent discharge from umbilicus.

Upon clinical evaluation, the patient had a fever of 39.3 degrees Celsius and an infra-umbilicallump measuring four centimeters in diameter that had been present for fourteen days. Laboratory findings show a leukocyte count of 16.500 cells/microliter with 84% neutrophils. Ultrasonography and contrast-enhanced computed tomography of the abdomen and pelvis revealed a peripherally enhancing collection spanning 2.6x4.5x4.6 cm, containing several air pockets

below the umbilicus, along the midline, and restricted to the area outside the peritoneum (Figure 2). This collection extends to the skin's surface through the umbilicus with no apparent link to the urinary bladder.

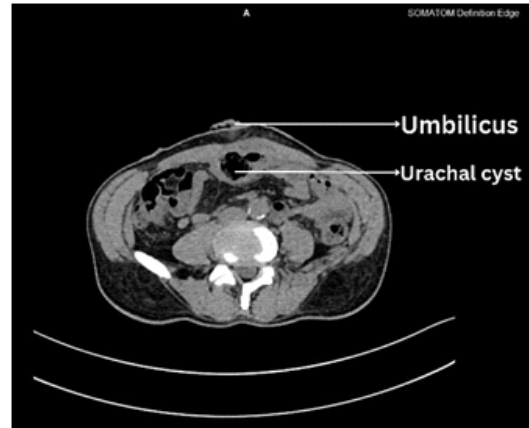


Figure 2. A Computed tomography (CT) image showing the urachal cyst below the umbilicus confined to the pre-peritoneum.

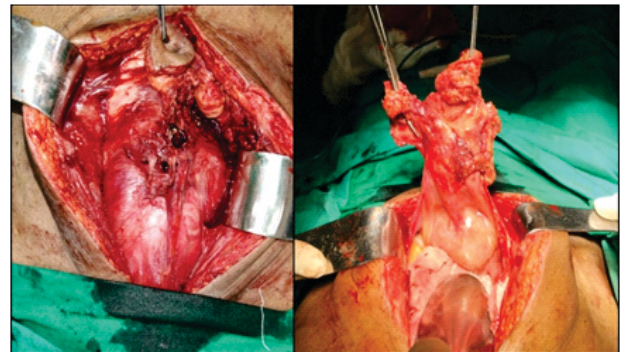


Figure 3. Showing urachal cyst with umbilicus and urinary bladder.

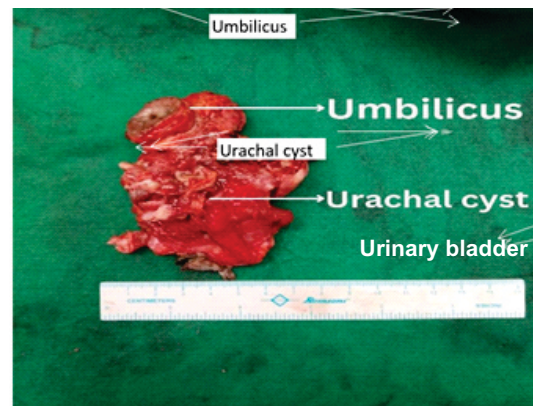


Figure 4. Specimen of urachal cyst.

Upon clinical evaluation, the patient had a fever of 39.3 degrees Celsius and an infra-umbilical lump measuring four centimeters in diameter that had been present for fourteen days. Laboratory findings show a leukocyte count of 16,500 cells/microliter with 84% neutrophils. Ultrasonography and contrast-enhanced computed tomography of the abdomen and pelvis revealed a peripherally enhancing collection spanning 2.6x4.5x4.6 cm, containing several air pockets below the umbilicus, along the midline, and restricted to the area outside the peritoneum (Figure 2). This collection extends to the skin's surface through the umbilicus with no apparent link to the urinary bladder.

The patient's histopathology analysis describes a urachal cyst spanning 7x5x3 centimeters with an attached umbilicus. The analyzed sections reveal hemorrhagic and necrotic patches encircled by greyish-white tissue. The microscopic view reveals denuded benign urothelium with ulcerated epithelium lining and extensive heterogeneous inflammatory infiltration, with no indications of atypical lesions or malignancy, indicating an infected urachal cyst. After a six-month follow-up, the patient was asymptomatic.

DISCUSSION

Urachal cyst is a congenital deformity that manifests seldom in adulthood. At the early stages of growth and development, allantois form a

thick cord, followed by fibrosis that creates the median umbilical ligament.¹ The urachal cyst is typically non-symptomatic till the cyst develops an invasion by a pathogen and manifests with signs and symptoms of suprapubic discomfort, hyperpyrexia, agony while passing urine, exudation of pus from the umbilicus, emesis, bloody urine.⁷ In this instance, the patient complained of suprapubic discomfort, exudation of pus from the umbilical cord, and fever. Due to the variety of manifestations, the urachal cyst can frequently be interpreted as Meckel diverticulitis, pelvic inflammatory disorder, appendicitis, or infection of the urinary system.⁷

Infected urachal cyst complications comprise bladder's fistula development, cyst breakdown, inflammation of peritoneum, and septicemia caused by *E. coli*, *Enterococcus faecium*, *Fusobacterium*, *Proteus*, *S. viridans*, *Klebsiella*.⁸ Open management may be classified into two types of approaches.

1) Two-stage technique: In this strategy, the root cause of infection was addressed first with intravenous antimicrobials, then the infectious cystic cavity was incised and drained, subsequently receiving the definitive procedure. The first phase is often performed under ultrasound guidance. The initial step of reducing the source of infection then follows the final care, which involves cyst removal.

2) Surgery Alone approach- In this procedure, the cyst is resected directly without the contents being drained first.

Table 1. Showing previous case reports of Urachal cyst in adults.

No.	Previous Case Reports	Age and sex of the patient	Presentation	Management
1.	Kingsley C Ekwueme et al ⁹	32 years/ male	Tender, midline, infraumbilical mass and purulent umbilical discharge.	Initially with broad spectrum antibiotics in order to allow sepsis to resolve prior to surgical excision of the cyst and fibrous tract
2.	Marta Pinto Dias et al ¹⁰	70 years/ male	Periumbilical pain, swelling, and purulent discharge	After giving intravenous antibiotics, Surgical drainage and subsequent elective umbilical amputation
3.	Asma Sghaier et al ¹¹	-26years/male -27years female	Both patients had clear fluid draining from the base of the umbilicus	Both the cases had undergone laparoscopic resection of urachus cysts.
4.	Present case	72 years/ male	Umbilical pus discharge with leukocytosis	Intravenous antibiotics, optimization of patient and then laparoscopic converted to open complete excision of urachal cyst.

When the urachal cyst is accompanied by rupture, an extensively spread abscess, or septicemia, a two-stage procedure is typically used. This strategy frequently shortens the inpatient stay and minimizes the number of complications that accompany the surgical procedure.⁹ A laparoscopic method also has the potential to treat patients with infected urachal cysts, which is normally carried out in two stages. The laparoscopic procedure is typically associated with lower morbidity, shorter hospitalization, and earlier mobility. Few case reports^{9,10,11} of umbilical sinus in adults, along with their presentation and managements have been mentioned in Table 1.

The probability of cancer ought to be weighed up while addressing an elderly with a urachal cyst. Urachal malignant tumor, which develops from the remaining epithelia of the urachal abnormalities, has an awful prognosis. The most typical presentation is hematuria.¹² A study of 130 adult patients from 1951 to 2005 found that 51% of urachal specimens collected were cancerous.¹³

CONCLUSION

Infected urachal cysts in the elderly are uncommon, but they necessitate immediate surgical procedures owing to the danger of complications and the possibility of cancer. Early detection and adequate treatment, such as surgical removal and antibiotics, are critical for successful results. Regular follow-ups are required to check for recurrences or complications. This case scenario emphasizes the need to include urachal anomalies in the differential diagnosis of abdominal discomfort and umbilical discharge. Vigilance for malignancy is key in elderly patients.

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