

Urachal Cysts: A Report of Two Cases Highlighting Histopathological Diagnostic Challenges

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ABSTRACT

Urachal cysts are rare congenital anomalies arising from the incomplete obliteration of the urachus, an embryonic allantoic remnant that connects the foetal bladder dome to the umbilicus during 4-12 weeks of gestation. While the urachus normally involutes into the median umbilical ligament, failure of mid-urachal obliteration results in a cyst, which often predominates near the bladder due to gravity-dependent mucin accumulation. Although easily identified in infants via umbilical discharge, up to 35% of adult cases present as “silent” or enclosed cysts that mimic acute abdominal or urological pathologies. This case report highlights the diagnostic challenges through two adult cases, one was a 21-year-old male presenting with symptoms of lower abdominal pain and other was, a 49-year-old female presenting with symptoms of lower abdominal pain, burning micturition, and urinary frequency mimicking a urinary tract infection. Pathological examination in the latter revealed an urachal cyst with extensive granulomatous cystitis. This inflammation, featuring epithelioid granulomas and Langhans-type giant cells, presents a significant diagnostic pitfall, as it mimics genitourinary tuberculosis despite negative stains for acid-fast bacilli. Because these “diagnostic chameleons” can simulate conditions ranging from appendicitis to bladder malignancy, a high clinical suspicion and thorough histopathological evaluation are vital. Recognising urachal remnants in adults with atypical lower abdominal pain or recurrent urinary symptoms is essential to avoid diagnostic delays or unnecessary, long-term antitubercular therapy.

Keywords: Abdominal, Cysts, Granulation, Inflammation, Urachal remnants

CASE REPORT

Case 1

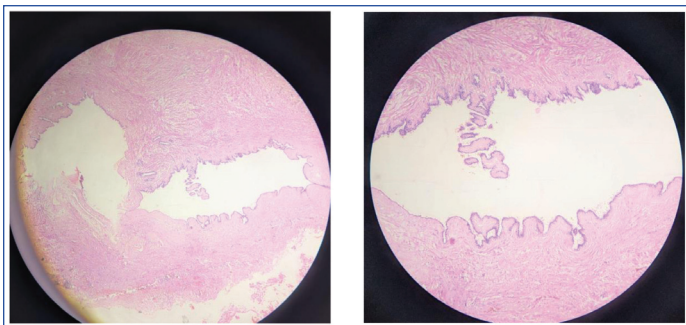
A 21-year-old male presented with lower abdominal pain associated with a gradually progressive infraumbilical/suprapubic swelling of varying duration for six months. Additional complaints included lower urinary tract symptoms, such as increased urinary frequency, dysuria, and urinary urgency for one month. Because the presentation closely mimicked other common abdominal conditions such as UTI, Bladder stone, Prostatitis. Routine blood investigations revealed a normal complete blood count (haemoglobin: 14.2 g/dL (reference range: 13.0-17.0 g/dL), total leucocyte count: 7,800/ μ L (reference range: 4,000-11,000/ μ L), platelet count: 2.5 times 10^5 / μ L (reference range: 1.5 - 4.5 times 10^5 / μ L) and normal renal function tests (serum urea: 22 mg/dL (reference range: 15-45 mg/dL), serum creatinine: 0.9 mg/dL (reference range: 0.7-1.3 mg/dL). Routine urine microscopy showed 2-3 pus cells/HPF without haematuria, and urine culture yielded no bacterial growth. Transabdominal Ultrasonography (USG) demonstrated a well-circumscribed, thin-walled, anechoic midline cystic lesion located in the preperitoneal space between the umbilicus and the bladder dome, measuring approximately 2.5 $\times$ 1.0 cm, without calcifications or internal septations. Cross-sectional imaging (CT/MRI) was not performed preoperatively as USG clearly delineated a benign-appearing simple cystic mass. The patient underwent open surgical exploration via a lower midline laparotomy. Intraoperatively, a well-encapsulated, extraperitoneal cystic structure measuring approximately 2.5 cm was identified in the midline within the preperitoneal space beneath the rectus sheath. The cyst was attached superiorly to the median umbilical ligament. Careful intraoperative dissection and luminal evaluation confirmed that the cyst did not communicate with the bladder lumen (no patent tract or defect at the bladder dome). Complete surgical excision of the urachal cyst along with the entire tract up to the bladder dome was performed. The true nature of the urachal cyst was only confirmed during surgical exploration.

Gross examination of the specimen revealed well-circumscribed cystic lesions measuring 2.3 $\times$ 0.8 $\times$ 0.4 cm [Table/Fig-1]. The specimens consisted of grey-white to grey-brown soft-tissue. On external examination, the cysts were smooth-surfaced with focal fibrofatty tissue adherent to the outer aspect. Cut-sections showed cystic cavities containing serous fluid. The cyst walls ranged from 0.1 to 0.2 cm in thickness and appeared grey-white, fibrous, and focally congested. No papillary excrescences, solid mural nodules, haemorrhage, or areas of necrosis were identified. Histopathologically, normal urachal remnants are predominantly lined by urothelium (transitional epithelium) in approximately 70% of cases, or columnar epithelium in up to 30% of cases [1]. However, progressive expansion of the cyst cavity or chronic inflammation can result in attenuation of the lining, yielding a single layer of cuboidal or flattened/atrophic epithelium, as observed in this case. Sections studied show a well-defined cystic lesion lined predominantly by a single layer of flattened to low cuboidal epithelium, consistent with urachal epithelial lining [Table/Fig-2,3].

The underlying cyst wall was composed of dense fibrocollagenous connective tissue with focal congested blood vessels [Table/Fig-2]. Mild chronic inflammatory cell infiltrate, composed predominantly of lymphocytes and occasional plasma cells, is noted within the



[Table/Fig-1]: A specimen consisting of a cystic structure revealed a grey-brown appearance measuring 2.3 $\times$ 0.8 $\times$ 0.4 cm.



[Table/Fig-2] Well-defined cystic lesion lined by flattened cuboidal epithelium. The underlying cyst wall is composed of dense fibrocollagenous connective tissue (H&E, X100). **[Table/Fig-3]:** Cyst lined by a single layer of flattened to low cuboidal epithelium (H&E, X400).

cyst wall. No evidence of epithelial dysplasia, intestinal metaplasia, squamous metaplasia, necrosis, granulomatous inflammation, or malignancy was identified. Final diagnosis was given as benign urachal cyst.

The patient had an uneventful postoperative recovery and was discharged on the third postoperative day in stable condition. At his postoperative follow-up visits, the patient remained completely asymptomatic, with total resolution of his lower abdominal pain and lower urinary tract symptoms (dysuria, frequency, and urgency). Physical examination showed a well-healed abdominal surgical scar with no evidence of umbilical discharge or palpable suprapubic masses. Follow-up transabdominal USG performed at one year demonstrated complete resolution of the preperitoneal cystic mass without any evidence of lesion recurrence or secondary pelvic collections.

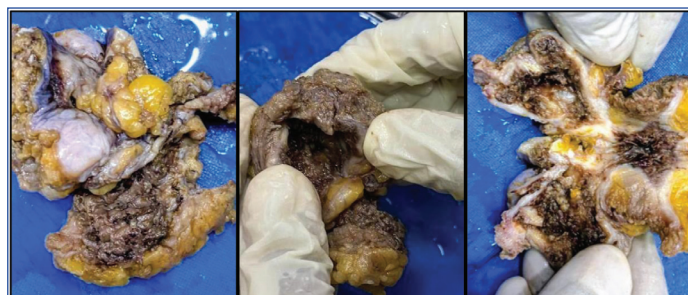
Case 2

A 49-year-old female presented with a triad of symptoms: lower abdominal pain, burning micturition, and urinary frequency for one month. There was no history of umbilical discharge, gross haematuria, significant weight loss, or previous abdominal trauma. This symptomatic presentation closely mimicked urinary tract infection or bladder pathology. Radiological evaluation demonstrated a cystic lesion in the midline between the umbilicus and the dome of the urinary bladder, raising the suspicion of an urachal cyst. Initial complete blood count demonstrated mild leucocytosis (total leucocyte count: 12,400/ μ L (reference range: 4,000-11,000/ μ L) with 78% neutrophils (reference range: 40-70%), while haemoglobin 12.8 g/dL (reference range: 12.0-15.0 g/dL) and renal function tests serum urea: 26 mg/dL (reference range: 15-45 mg/dL), serum creatinine: 0.8 mg/dL (reference range: 0.6-1.1 mg/dL) were within normal limits. Erythrocyte Sedimentation Rate (ESR) was elevated at 42 mm/hr (reference range: 0-20 mm/hr). Urine microscopy revealed 15-20 pus cells/HPF and 3-5 RBCs/HPF; however, repeated urine cultures showed no bacterial growth. USG: Revealed a thick-walled, multilocular, complex cystic lesion in the midline infraumbilical region abutting the anterosuperior aspect of the bladder dome, with internal low-level echo-debris suggesting infection or proteinaceous content. Contrast-Enhanced CT (CECT): Confirmed a well-defined, thick-walled midline cystic lesion measuring 7.2 $\times$ 4.8 cm located extraperitoneally between the umbilicus and the bladder dome. Perilesional fat stranding was noted along the cyst wall and superior bladder border, but there was no evidence of solid enhancement, calcification, or invasive pelvic mass.

The patient was scheduled for surgical intervention following a course of broad-spectrum antibiotics. Operative exploration via an infraumbilical median incision revealed a thick-walled, multiloculated cystic lesion surrounded by dense inflammatory adhesions connecting the posterior cyst wall firmly to the anterosuperior wall/dome of the urinary bladder. Although dense inflammatory adhesions bound the cyst to the bladder wall, there was no gross luminal communication into the bladder cavity (confirmed on

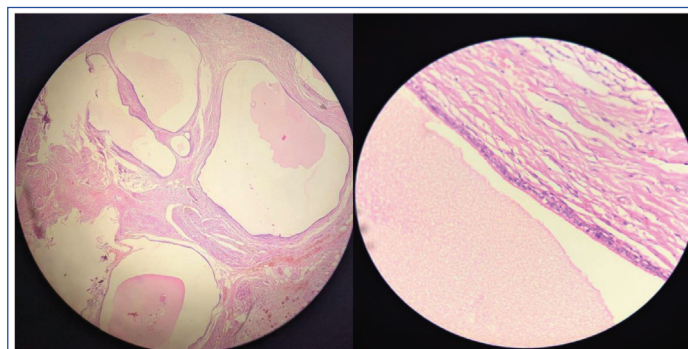
intraoperative bladder inspection and absence of urine leakage). Complete en bloc surgical excision of the urachal cyst along with a cuff of adjacent bladder wall tissue and closure of the bladder dome in two layers.

Gross examination of the specimen revealed a urachal cyst accompanied by a cuff of bladder tissue, measuring 7.5 $\times$ 5.0 $\times$ 2.5 cm in aggregate [Table/Fig-4]. The cyst was partially cut open (4.0 $\times$ 2.5 $\times$ 2.0 cm) and exhibited a wall thickness of 0.5 cm [Table/Fig-5]. Cut-sections showed unilocular to multilocular cystic cavities containing variable amounts of cloudy serous fluid. The cut surface varied from grey-brown to grey-black, with visible grey-yellow fibrofatty tissue [Table/Fig-6]. The cyst walls ranged from 0.2 to 0.5 cm in thickness and appeared grey-white, fibrous, and focally congested. No papillary excrescences, solid mural nodules, haemorrhage, or areas of necrosis were observed. The cyst was attached to a segment of the bladder wall with adjacent fibroadipose tissue and skeletal muscle; the overlying mucosal surface appeared unremarkable without ulceration or mass lesions. Serial sectioning demonstrated continuity of the cyst wall with the bladder wall but revealed no gross evidence of infiltrative growth or malignancy.



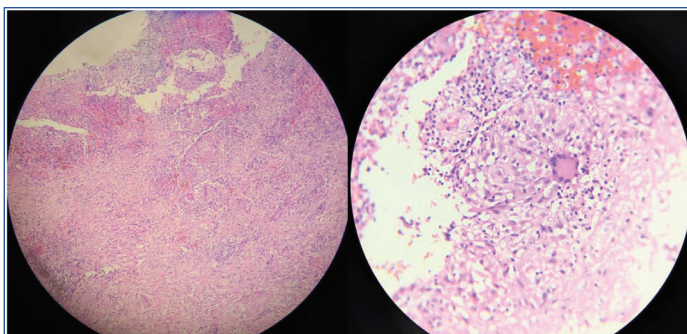
[Table/Fig-4]: The received specimen was a urachal cyst accompanied by a cuff of bladder tissue, measuring 7.5 $\times$ 5 $\times$ 2.5 cm in aggregate. **[Table/Fig-5]:** The cyst was partially cut open (4 $\times$ 2.5 $\times$ 2 cm) with a wall thickness of 0.5 cm. **[Table/Fig-6]:** Cut surface (C/S): Varied from grey-brown to grey-black, with visible grey-yellow fibrofatty tissue.

Microscopically, sections examined from the urachal cyst revealed a multiloculated cystic lesion lined by flattened to low cuboidal epithelium, supported by a fibrocollagenous wall [Table/Fig-7,8]. The cyst wall was closely associated with skeletal muscle bundles, confirming its attachment to the bladder wall. The surrounding fibrocollagenous tissue shows acute and chronic inflammatory infiltrates with granulation tissue formation [Table/Fig-9].



[Table/Fig-7]: Multiloculated cyst lined by flattened cuboidal epithelium (H&E, X100). **[Table/Fig-8]:** Fibrocollagenous tissue with a cystic lesion lined by flattened cuboidal epithelium (H&E, X400).

Sections from the adjacent bladder wall demonstrate extensive epithelioid cell granulomatous inflammation composed of well-formed granulomas containing epithelioid histiocytes and numerous Langhans-type multinucleated giant cells, accompanied by lymphocytes and plasma cells [Table/Fig-10]. No caseous necrosis is identified. Special stains for Acid-Fast Bacilli (Ziehl-Neelsen stain) and fungal organisms (PAS/GMS) are negative, excluding infective granulomatous aetiologies. No cytological atypia or evidence of malignancy is seen.



[Table/Fig-9]: The fibrocollagenous tissue and fibrotendinous tissue show areas of acute and chronic inflammatory granulation tissue (H&E, X100). **[Table/Fig-10]:** The bladder mucosa shows characteristic epithelioid granulomatous inflammation with Langhan's type of giant cell (H&E, X400).

Final diagnosis was given as histopathological features are consistent with a benign urachal cyst associated with granulomatous cystitis. (AFB and fungal stains are negative).

The patient's postoperative course was smooth and uneventful. The pelvic drain was removed on postoperative day 3, and she was discharged on day 5 with normal voiding function. At her 6-month and 12-month postoperative follow-up evaluations, she reported complete resolution of her lower abdominal pain, dysuria, and urinary frequency. Follow-up urinalysis and urine microscopy were normal without pyuria or haematuria. Repeated transabdominal USG at one year showed a well-healed bladder dome without wall thickening, recurrent cystic masses, or pelvic fluid collections.

DISCUSSION

The urachus is an embryological remnant extending from the dome of the urinary bladder towards the umbilicus. During normal development, it undergoes progressive obliteration and ultimately forms the median umbilical ligament. Failure of complete obliteration can result in several urachal anomalies, including patent urachus, urachal cyst, urachal sinus, and vesicourachal diverticulum [1-3]. Among these, a urachal cyst develops when the central portion of the urachus remains patent while the proximal and distal ends become obliterated. These lesions may remain asymptomatic for many years and may only become clinically apparent when they enlarge or become inflamed or infected [2-4].

Although urachal anomalies are predominantly recognised in children, their presentation in adults can be considerably more challenging. Adult patients generally do not present with the classical finding of umbilical urinary discharge. Instead, they may develop non-specific symptoms such as lower abdominal or suprapubic pain, dysuria, urinary frequency, urgency, haematuria, or a palpable midline mass [3,4]. This was clearly reflected in the present two cases. The 21-year-old male in Case 1 presented with lower abdominal pain and a gradually progressive infraumbilical/suprapubic swelling, followed by dysuria, frequency, and urgency. In Case 2, the 49-year-old female presented primarily with lower abdominal pain, burning micturition, and urinary frequency, clinically resembling a urinary tract infection. The absence of umbilical discharge in both patients could easily have diverted attention away from an urachal lesion.

Goldman IL et al., reported a similar diagnostic difficulty in their series of 10 infected urachal cysts, in which dysuria, severe lower abdominal pain, and fever were common presenting features. Some patients had initially been referred with alternative diagnoses such as Crohn's disease, bladder carcinoma, and pelvic inflammatory disease [4]. Index cases further illustrate this clinical variability, particularly because neither patient had the more recognisable presentation of umbilical discharge. Ekwueme KC and Parr NJ also described an adult man with a tender midline infraumbilical mass due to an infected urachal cyst. Their patient was diagnosed by cross-sectional imaging and subsequently underwent excision of the cyst and fibrous tract [5]. In comparison, the first patient had

a much smaller, uncomplicated cyst without evidence of overt infection, demonstrating that symptomatic urachal cysts need not necessarily be infected.

The second case had a much more inflammatory appearance and closely resembles the presentation described by El Menaoui O et in an adult woman with an infected urachal cyst [6]. Their patient presented with suprapubic pain and imaging showed a complicated inflammatory mass, with the final diagnosis being established at surgery. The second patient similarly had leucocytosis, raised ESR, pyuria, microscopic haematuria, and a thick-walled multiloculated cyst with surrounding inflammatory changes. The close adherence of the lesion to the bladder dome further increased the possibility of primary bladder or pelvic pathology. These similarities support the observation that an inflamed urachal cyst can closely mimic more common intra-abdominal and urinary tract conditions.

Imaging is therefore an important part of the diagnostic work-up. USG is usually a useful initial investigation because an urachal cyst characteristically appears as a cystic lesion along the midline between the umbilicus and bladder dome. CT provides better information regarding lesion size, wall characteristics, surrounding inflammatory changes, bladder involvement, and the presence of solid or calcified components. MRI may be particularly useful when the anatomy is unclear or when communication with the bladder needs to be assessed [3,7]. Parada Villavicencio C et al., highlighted the characteristic midline location of urachal lesions and described the wide range of imaging appearances associated with uncomplicated cysts, infection, haemorrhage, and neoplasia [7].

The imaging differences between index two cases are particularly interesting. In Case 1, USG demonstrated a small, well-defined, thin-walled and anechoic cyst measuring approximately 2.5×1.0 cm. There were no septations, calcifications, or solid components, and therefore additional cross-sectional imaging was not considered necessary before surgery. In contrast, Case 2 showed a larger 7.2×4.8 cm thick-walled multiloculated lesion containing internal debris and associated with perilesional fat stranding. CT was therefore important in defining the extent of the lesion and its close relationship to the bladder dome. This difference between the two cases demonstrated that the radiological appearance of urachal cysts may vary considerably depending on their size and inflammatory status.

Cilento BG et al., also emphasised the heterogeneous clinical and imaging presentation of urachal abnormalities and the importance of selecting the imaging modality according to the clinical situation [8]. Our experience supports this approach. A simple cyst in a young patient may be adequately characterised by USG, whereas a large or complex lesion with inflammatory changes warrants CT or MRI to better define its relationship with surrounding structures and to assess for features suspicious for malignancy.

Histopathological examination remains essential for confirmation of the diagnosis. Schubert GE et al., in an examination of 122 adult urinary bladders, demonstrated tubular urachal remnants in approximately one-third of specimens and showed considerable variation in their epithelial lining, with transitional and columnar epithelium being identified [9]. This observation is important when evaluating urachal cysts because the epithelial lining is not necessarily uniform or characteristic in every specimen. In both of the cases, the cysts were lined predominantly by flattened to low cuboidal epithelium and were supported by dense fibrocollagenous tissue. The attenuated epithelial lining is compatible with a dilated urachal remnant and chronic reactive change. Neither case demonstrated dysplasia, destructive invasion, or malignant epithelial proliferation.

In Case 1, the histological findings were relatively straightforward. The cyst was lined by flattened to low cuboidal epithelium, with a dense fibrocollagenous wall and only mild chronic inflammatory infiltrates. No intestinal or squamous metaplasia, granulomatous inflammation, necrosis, or malignancy was identified. These findings, together

with the anatomical location and operative findings supported the diagnosis of a benign urachal cyst.

Case 2, however, presented a much greater histopathological challenge. Although the urachal cyst itself showed a flattened to low cuboidal epithelial lining, the adjacent bladder wall demonstrated extensive epithelioid granulomatous inflammation with numerous Langhans-type multinucleated giant cells. This finding immediately raises an important differential diagnosis, particularly in regions where genitourinary tuberculosis is prevalent. The absence of caseous necrosis and the negative Ziehl-Neelsen stain for acid-fast bacilli and PAS/GMS stains for fungal organisms argued against an identifiable mycobacterial or fungal infection in the examined tissue. Nevertheless, negative special stains alone cannot absolutely exclude infection, and the final interpretation should always be correlated with clinical and microbiological findings.

The presence of granulomatous inflammation is particularly relevant because it can create a diagnostic trap. McQuaid JW et al., described a granulomatous lesion initially suspected to represent an infected urachal cyst, which was ultimately associated with Bartonella infection [10]. Although their patient was a child and the underlying infection was different from that considered in index patient, the report illustrates how granulomatous inflammation may complicate the diagnosis of urachal lesions. In index case, the combination of epithelioid granulomas and Langhans-type giant cells could potentially have led to a diagnosis of tuberculosis if the morphology had been interpreted without adequate clinical and ancillary correlation. The negative AFB and fungal stains and absence of caseation therefore provided important supportive evidence for a non-necrotising granulomatous inflammatory process rather than an established infectious diagnosis.

Another important differential diagnosis in an inflamed urachal lesion is xanthogranulomatous cystitis. This is a benign inflammatory condition that can occur in association with urachal remnants and may clinically and radiologically mimic urachal carcinoma. Histologically, however, xanthogranulomatous cystitis is characterised predominantly by sheets of foamy, lipid-laden macrophages, often with multinucleated giant cells and chronic inflammatory cells. In contrast, the second case showed well-formed epithelioid granulomas and Langhans-type giant cells rather than a predominant foamy histiocytic infiltrate. Therefore, the findings were considered more consistent with granulomatous cystitis rather than xanthogranulomatous cystitis.

The differential diagnosis of a midline infraumbilical cystic lesion is broad. An omphalomesenteric duct remnant is generally associated with the gastrointestinal tract and may show intestinal or gastric-type epithelium. Epidermoid cysts show keratinising stratified squamous epithelium with luminal keratin. Mesenteric cysts may be lined by mesothelial or endothelial cells depending on their type. A bladder diverticulum, in contrast, maintains direct communication with the bladder lumen and is lined by urothelium [1,3,7]. Urachal sinus and vesicourachal diverticulum are differentiated primarily by their anatomical communication, either with the umbilicus or bladder, respectively. In both of the patients, intraoperative examination demonstrated no patent communication with the bladder lumen, supporting the diagnosis of an urachal cyst rather than a vesicourachal diverticulum.

An important consideration in adult urachal lesions is the possibility of malignancy. Urachal carcinoma is rare, but its anatomical location can allow a tumour to grow considerably before producing symptoms [11,12]. Sheldon CA et al., highlighted the clinically occult nature and locally advanced presentation of urachal malignancies [11]. Gopalan A et al., in a clinicopathological study of 24 urachal carcinomas, demonstrated a range of adenocarcinoma morphologies, including mucinous and enteric patterns, and emphasised the importance of careful pathological examination [12]. In the present cases, there were no papillary excrescences,

solid mural nodules, destructive invasion, significant cytological atypia, or tumour necrosis. These features, together with the benign epithelial lining, favoured a benign urachal cyst rather than urachal adenocarcinoma.

The distinction between urachal adenocarcinoma and colorectal adenocarcinoma can be particularly difficult when an enteric or mucinous morphology is present. Paner GP et al., demonstrated that urachal adenocarcinomas commonly express CK20 and CDX2, while CK7 expression is variable [13]. Therefore, a CK20-positive/CK7-negative immunophenotype should not by itself be considered diagnostic of urachal origin. Immunohistochemistry should instead be interpreted as a panel and correlated with tumour morphology, anatomical location, radiological findings, and exclusion of a primary gastrointestinal malignancy [13,14]. In the present cases, immunohistochemistry was not required because no malignant epithelial proliferation was identified histologically.

The possibility of malignant transformation should therefore be considered cautiously. Although urachal carcinoma is a well-recognised malignant complication of urachal remnants, the absolute risk of malignant transformation of an incidental benign urachal cyst is uncertain. It would therefore be inappropriate to suggest that every urachal cyst is a premalignant lesion. Rather, the important clinical issue is that a complex urachal lesion in an adult may occasionally represent malignancy, and suspicious features such as a solid component, irregular wall thickening, calcification, haematuria, or local invasion should prompt careful evaluation [11-14].

Surgical excision remains the definitive treatment for symptomatic urachal cysts, particularly when infection, persistent symptoms, or diagnostic uncertainty is present [4,5,15]. Goldman IL et al., reported both single-stage and staged surgical management in patients with infected urachal cysts, depending on the severity of infection [4]. Ekwueme KC and Parr NJ similarly treated an infected adult urachal cyst with antibiotics followed by complete surgical excision [5]. Yoo KH et al., also demonstrated favourable outcomes following surgical treatment of infected urachal cysts [15]. In the first patient, complete excision of the cyst together with the urachal tract up to the bladder dome was achieved without bladder communication. In the second patient, dense inflammatory adhesions required en bloc excision of the cyst with a cuff of adjacent bladder wall, followed by two-layer closure. The different operative approaches in the two cases reflect the importance of tailoring surgery to the anatomical relationship and degree of inflammation.

The postoperative outcome in both patients was favourable. The first patient remained asymptomatic during follow-up, with complete resolution of abdominal and urinary symptoms and no recurrence on one-year USG. The second patient similarly experienced complete resolution of pain, dysuria, and urinary frequency, with normal subsequent urinalysis and no evidence of recurrent cyst or pelvic collection at one year. These outcomes are consistent with previous reports in which complete excision of symptomatic urachal cysts was associated with good clinical recovery [5,6,15].

When the two cases are considered together, they demonstrate two different faces of adult urachal cyst disease. The first case represents a relatively uncomplicated urachal cyst with a simple radiological appearance and minimal chronic inflammation. The second case, in contrast, represents a large and complex inflammatory lesion with dense adherence to the bladder and extensive granulomatous cystitis. The comparison with previous studies strengthens this observation. Goldman IL et al., Ekwueme KC and Parr NJ, and El Menaoui O et al., have shown that urachal cysts can present with abdominal pain, urinary symptoms, infection, and inflammatory masses [4-6]. Schubert GE et al., demonstrated the variability of the epithelial lining in adult urachal remnants [9], while Villavicencio P et al., and Cilento BG et al., highlighted the value of imaging in defining the characteristic location and extent of urachal lesions [7,8]. McQuaid JW et al., further demonstrated the diagnostic difficulty that can arise

when granulomatous inflammation is associated with a suspected urachal lesion [10]. Finally, Gopalan A et al., and Paner GP et al., emphasised the importance of careful histopathological evaluation when excluding urachal adenocarcinoma and distinguishing it from other glandular malignancies [12,13].

The unusual feature of the second case is the extensive non-necrotising granulomatous cystitis associated with a benign urachal cyst. While granulomatous inflammation is not, by itself, diagnostic of tuberculosis, its presence in the bladder of a patient with urinary symptoms can create a significant diagnostic dilemma. In such circumstances, morphology, special stains, clinical history, microbiological investigations, and radiological findings must be considered together. In the second patient, the absence of caseous necrosis and the failure to demonstrate acid-fast or fungal organisms on the performed stains supported the final diagnosis of benign urachal cyst with granulomatous cystitis.

Overall, these two cases emphasise that adult urachal cysts should remain in the differential diagnosis of unexplained midline infraumbilical or suprapubic pain, swelling, or recurrent irritative urinary symptoms. A lack of umbilical discharge should not exclude the diagnosis. USG can provide an initial diagnosis in uncomplicated lesions, while CT or MRI becomes particularly useful for larger, complex, or inflammatory lesions. Most importantly, histopathological examination is necessary not only to confirm the benign urachal origin but also to exclude infection, inflammatory mimics, and malignancy. Recognition of the urachal origin and awareness of the histopathological pitfalls, particularly granulomatous inflammation, can prevent diagnostic delay and avoid inappropriate prolonged treatment for presumed infectious diseases such as genitourinary tuberculosis.

Adult urachal cysts are uncommon but clinically important lesions that may present in deceptively different ways. The first case highlights the relatively simple end of the spectrum, whereas the second demonstrated how marked inflammation and granulomatous cystitis can obscure the underlying diagnosis. Correlation of clinical findings, imaging, operative anatomy, and histopathology is therefore essential. Awareness of these “diagnostic chameleons” can help clinicians and pathologists recognise urachal cysts earlier, distinguish them from common urinary and abdominal disorders, and provide appropriate definitive treatment.

CONCLUSION(S)

Urachal remnants are rare but clinically significant. The present cases illustrate that adults presenting with lower abdominal or urinary symptoms must be evaluated for these “chameleons.” Histopathological diligence, particularly in excluding infectious granulomas, is essential to prevent morbidity from unnecessary medical treatments like anti-tubercular therapy. Consistent clinical correlation and appropriate use of the IHC panel discussed above remains the cornerstone of accurate diagnosis.

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