



Case report

A large infected urachal mass in an adult: A case report in Tanzania

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ARTICLE INFO

Keywords:

Urachus
Urachal mass
Case report
Xanthoglanuloma

ABSTRACT

Introduction and importance: Urachal Mass results from a failure of obliteration of the urachal canal during fetal growth. The aetiology of urachal masses is ambiguous, being either of a cancerous or benign origin. Much literature is stipulated in children presenting with urachal-associated diseases but few in adult patients. This study aims at elucidating the existence of urachal mass with an abscess in a patient and the management modalities.

Presentation of case: We present a case report of a 52-year-old female patient with a two months history of abdominal pain and discomfort associated with intermittent low-grade fevers, anorexia and marked weight loss throughout her illness. An abdominal ultrasound revealed the presence of an intra-abdominal mass. A CT scan showed a multilobulated urachal mass. She eventually had a successful operation and quick recovery postoperatively.

Discussion: In the adult population, most urachal-associated diseases are malignant, with few being of benign origin. With different presentations between the two aetiologies, the most benign urachal masses may lead to infection and inflammation that typically present with a lower abdominal mass and fever. Diagnosis is made by ultrasound or CT scan of the abdomen. Surgical drainage and excision of the mass are the mainstay treatment modalities.

Conclusion: Urachal masses are rare in the adult population and are often missed in initial presentations. This will constitute poor management and outcome for patients. Physicians are to be alerted of the knowledge and make a clear assessment of patients perioperatively to avoid the delayed diagnosis, which may have consequent poor outcomes.

1. Introduction

The urachus is a canal that joins the umbilicus to the bladder and is essential during the first trimester of pregnancy as it drains urine from the bladder. It remains a remnant and obliterates during fetal development, forming the median umbilical ligament. In rare cases, the urachus fails to obliterate and may form a urachal mass. The aetiology is still unclear. Urachal masses are still a rare disease, especially in the adult population, with poor diagnostic accuracy [1]. The causes are diverse, with the most common being cancerous (67%) and the rest (33%) benign causes that contribute to cysts and abscesses [2]. We present a case report of a 52-year-old female patient and discuss the presentation,

management rationale, and prognosis.

This article is being reported following the SCARE criteria [3].

We present a case report of a patient at a tertiary hospital in Moshi Urban District, at the downhill of Mount Kilimanjaro, Kilimanjaro Region in the Northern zone of Tanzania. It is also a teaching hospital for the Kilimanjaro Christian Medical University College.

2. Presentation of case

We present to you a 52-year-old African female patient who is a known Diabetic and has been on her regular oral medications with good compliance. She came into a Tertiary Hospital at the emergency

Abbreviations: MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; CT scan, computed tomography scan; Lab, laboratory; HCT, hematocrit; GIST, gastrointestinal stromal tumors; LUTS, lower urinary tract symptoms.

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<https://doi.org/10.1016/j.ijscr.2022.107593>

Received 22 May 2022; Received in revised form 30 August 2022; Accepted 30 August 2022

Available online 5 September 2022

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department with a two months history of intermittent abdominal pain followed by a generalized body weakness that started gradually and worsened with time. Before this onset, she previously had on and off periumbilical abdominal pains in previous years. The abdominal pain was piercing in nature, radiating to her upper and left lower quadrants without umbilical discharge. This condition was associated with intermittent low-grade fevers, painful urination, abdominal discomfort, constipation, and anorexia for more than a week. She denied a history of early satiety and passing loose stools throughout her illness, nor any associated LUTS. However, she reported a positive history of weight loss of about 3Kgs in the previous month. She only reported a medical history of being a Diabetic at the time of presentation and reported no history of undergoing any surgeries previously. She also reported a positive history of Diabetes in her family. However, she denied being an alcoholic or a chronic smoker. On presentation, she was clinically ill-looking, mildly pale, and mildly dehydrated; however, her vitals were relatively stable.

Examining her abdomen; revealed an obese abdomen that moved concurrently with respiration. The abdomen was soft with a palpable fixed mass on the hypogastric region with tenderness on superficial and deep palpation. Her respiratory, cardiovascular, and central nervous system examinations were relatively uneventful. From her age, clinical presentation, and examination, a provisional diagnosis of an intra-abdominal mass was stipulated, with differentials of cecal tumors, GISTS, and Urachal mass. Moreover, an Abdominal ultrasound was then done and revealed a heterogenous intra-abdominal mass measuring $11 \times 8.8\text{cm}$ that was non-vascularized and an enlarged liver measuring 17.7cm . An Abdominal-pelvic CT scan showed a multilobulated thick-walled urachal mass measuring $7.4\text{cm} \times 5.6\text{cm} \times 8.7\text{cm}$ in size with multiple air locules superior to the urinary bladder along the midline of the anterior abdominal wall

which indents the superior urinary bladder wall. [Fig. 1].

The lab investigations revealed an average leucocyte count of $7.75 \times 10^9/\text{L}$. Moderate anaemia of $9.5\text{g}/\text{dl}$, HCT of 29.7% , microcytic hypochromic with an MCV of 71.7fl , MCH 22.9pg . Her Platelet count was $471 \times 10^9/\text{L}$. Mild hyponatremia of $131\text{mmol}/\text{L}$, the rest of the electrolytes and liver enzymes were within normal range. Her serum urea and creatinine levels were $40\text{umol}/\text{L}$ and a GFR of $155\text{ml}/\text{min}$. In the wards, the patient was resuscitated with crystalloids and received a unit of whole blood, and after that, scheduled for surgery which a General Surgeon at the hospital performed. During the surgery; A lower midline incision and the abdomen was incised in layers. A urachal mass with tract extending from anterosuperior dome of bladder to umbilicus with adhesions to ileum, mesentery, and anterior abdominal wall was found. The mass was discharging pus of about 20ml s. Pus was then drained, including adhesion lysis, and urachal mass was resected with its tract towards the bladder, in which a 1cm free margin was also resected. The bladder was then repaired in a double-layered fashion [Figs. 2, 3].

There were no complications intra-op. The patient had a good postoperative recovery, the drain was removed on the third-day post-surgery, and the patient was discharged on the fifth-day post-surgery. A sample was taken intra-operatively and for histology, which showed morphological features compatible with the urachus' xanthogranulomatous inflammation— [Figs. 4, 5].

3. Discussion

Urachal masses remain relatively uncommon in the general population, and they arise from various aetiologies, with the majority being

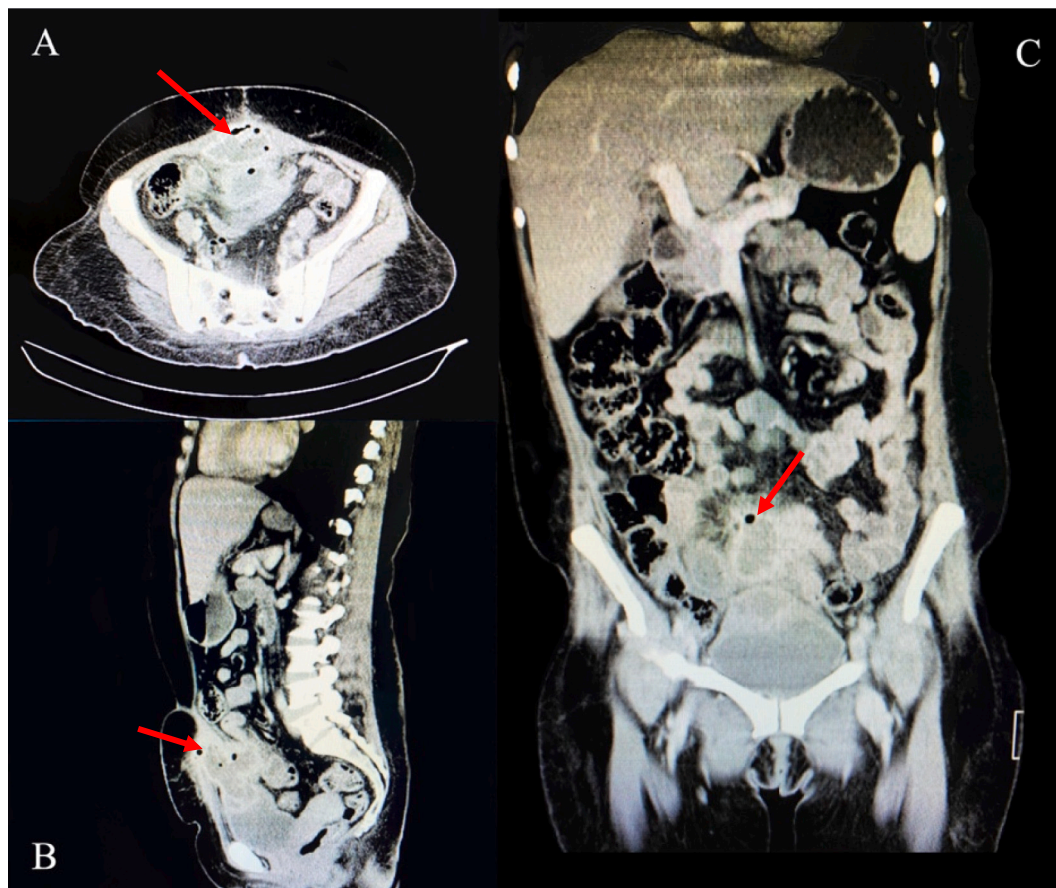


Fig. 1. Abdominal-pelvic CT scan images (A, B, C) showing a multilobulated thick-walled urachal mass measuring $7.4\text{cm} \times 5.6\text{cm} \times 8.7\text{cm}$ in size with multiple air locules superior to the urinary bladder along the midline of the anterior abdominal wall which indents the superior urinary bladder wall (red arrows). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

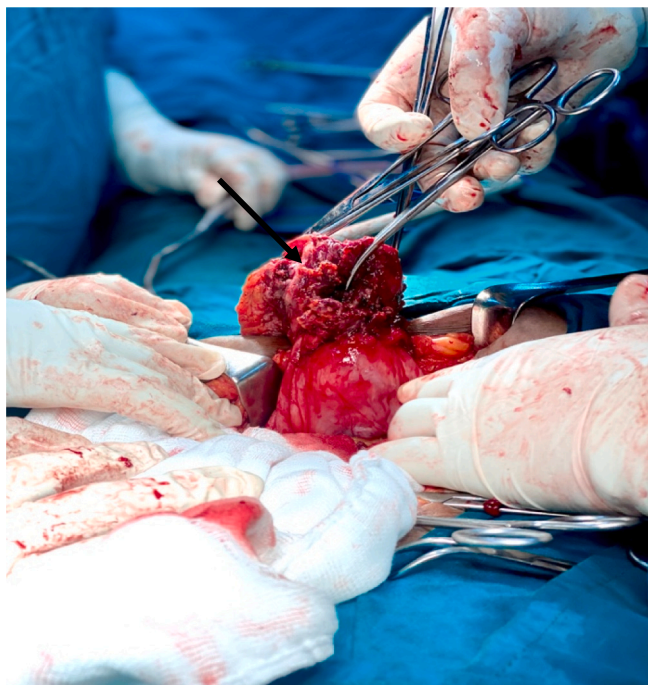


Fig. 2. Urachal mass attached to the anterosuperior aspect of the urinary bladder (Arrow).

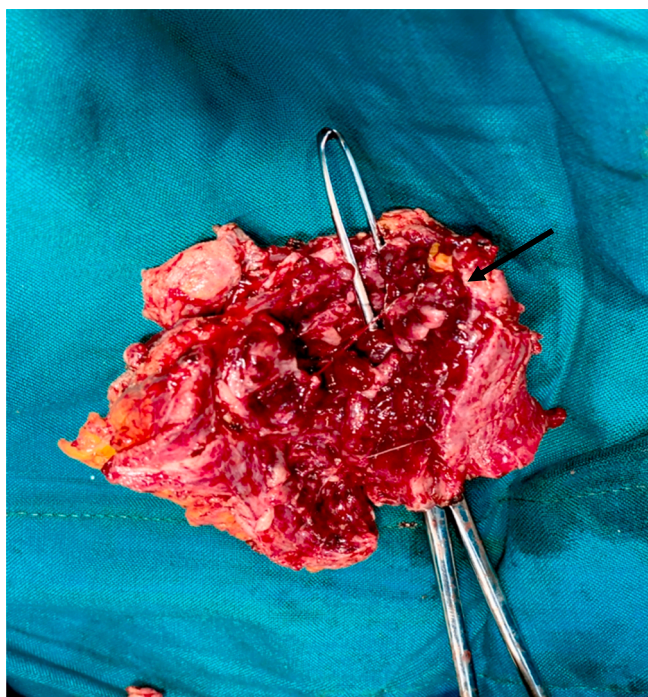


Fig. 3. Dissected urachal mass (arrow).

carcinomas and the rest being benign aetiology such as abscesses and cysts [2]. It is paramount to delineate the common benign and cancerous aetiologies to prompt an appropriate treatment modality. Urachal cysts usually develop when both ends of the urachal canals are obliterated, common in the lower third of the urachus [4]. Much literature has been well attested in children but not much in adults. The persistence of urachal-associated malformations to adulthood is evident and becomes of great concern when allied with infection and inflammation [5]. When

looking at the difference in presentations, a study by Xing Bi and colleagues [6] clearly illustrated the differences in clinical presentations of patients with benign and malignant urachal masses. Thirty patients had urachal masses of malignant aetiology, and 17 patients had benign aetiology. Of the 17 patients, 15 had infected urachal cysts with chronic inflammation, and 2 had xanthogranulomas. It is also pointed out that urachal masses are associated with infiltration of the Retzius space, while gross haematuria is commonly seen in urachal malignancies. Patients presenting with a clinical history of mucusuria are concurrent with being diagnosed with urachal adenocarcinomas [7]; consequently, it is essential to conduct a full urologic workup, including imaging, to elude missing urachal cancers.

Infected urachal cysts may present with numerous symptoms such as a lower abdominal mass with or without umbilical discharge, abdominal tenderness, fever, urinary tract infections, haematuria and peritonitis [8]. Various complexities of urachal cysts incorporate abscesses which may lead to septicæmia, fistulation into the urinary bladder, bowels or umbilicus. The most precise diagnosis of this entity is by abdominal ultrasound and a CT scan. Other tests such as Cystoscopies may also be used to cover a range of differentials that come with urachal mass-associated aetiologies. The management of urachal mass varies with age, and With children younger than one year, the urachal remnants might disappear; hence a surgical intervention is usually avoided. Antibiotic therapy is critical in managing infected urachal masses with drainage and surgical excisions, providing an excellent postoperative outcome and avoiding the disease's recurrence [9].

4. Conclusion

Urachus-associated diseases arise in any age group. They are most evident in children, however rare, but can also be seen in the adult population. Poor clinical presentation and an absence of quintessential imaging prove to be a challenging stepping stone in providing a precise diagnosis of urachal mass. Physicians are to be alerted of the knowledge and make a clear assessment of patients perioperatively to avoid the delayed diagnosis, which may have consequent poor outcomes.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Funding

No funding was provided/obtained towards this study.

Ethical approval

Ethical approval was obtained from the department of General surgery, KCMC Hospital.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Dennis Machaku – Participated in the surgery, reviewed medical records, conceptualizing and writing of the script.

Mathias Kimolo - Participated in the surgery, reviewed medical records and writing of the script.

Mugisha Nkoronko – Participated in the surgery, reviewed medical records and revising of the script.

Mujaheed Suleman – Participated in the surgery and reviewed

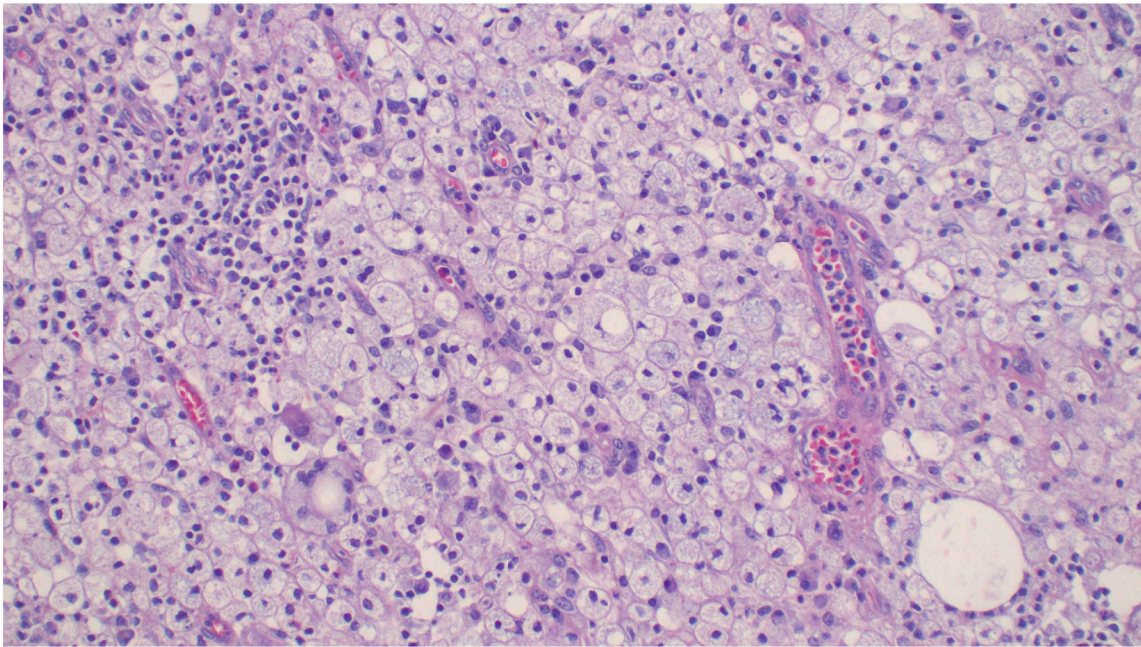


Fig. 4. Chronic Xanthogranulomatous inflammation of urachal mass, highlighting foamy histiocytes and lymphocytes (H&E, ×200).

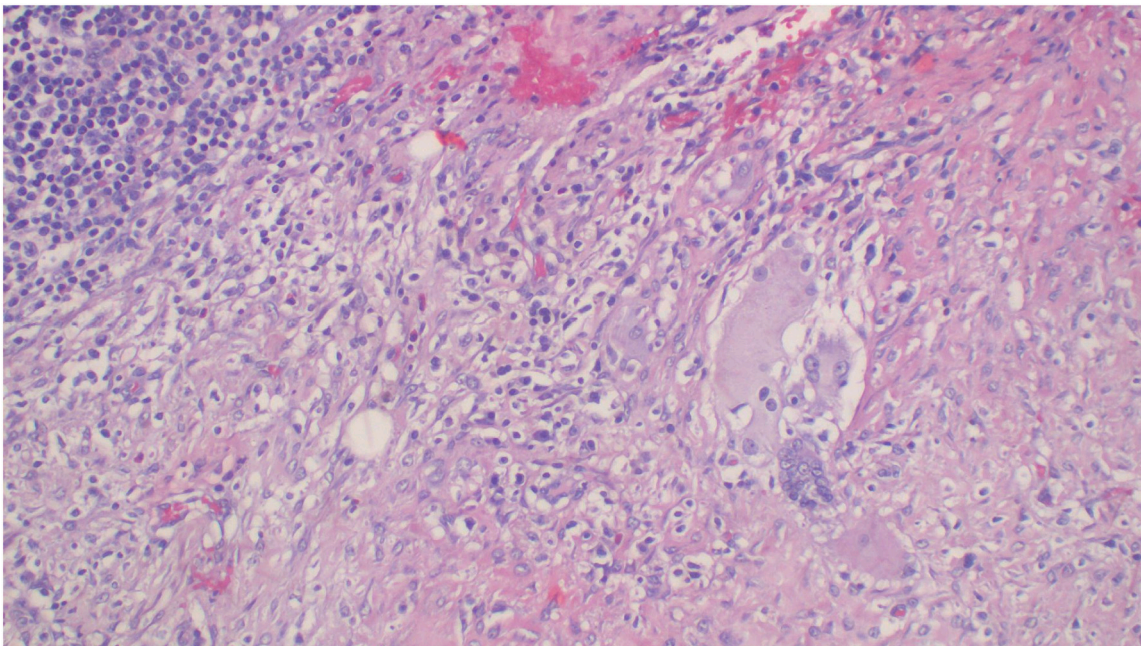


Fig. 5. Xanthogranulomatous inflammation of urachal mass, demonstrating foamy histiocytes, multi-nucleated giant cells, and lymphocytes (H&E, ×100).

medical records.

Alex Mremi – Collection of accurate histology findings and reviewed medical records.

Registration of research studies

Not applicable.

Guarantor

N/A.

Declaration of competing interest

Authors declare no potential conflicts of interest associated to this study.

Acknowledgement

The authors would like to thank the patient for permission to share her medical history for educational purposes and publication.

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