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Case Study

# Rare Presentation of Primary Uterine Teratoma with Congenital Unilateral Renal Agenesis: A Case Report

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## I N F O

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## A B S T R A C T

*Introduction:* Uterine teratomas are a rare occurrence in gynaecology. The presentation can be elusive due to non-specific signs and symptoms. Its coexistence with Congenital Unilateral Renal Agenesis (CURA) is extremely rare. We report a rare case of extragonadal uterine teratoma with congenital unilateral renal agenesis in a 20-year-old nulliparous patient, who presented with non-specific signs and symptoms at a tertiary care centre, eastern Uganda, and review the literature.

*Case Presentation:* A 20-year-old nulliparous referral from a district hospital presented with a four year history of urinary obstruction that was followed by symptoms of overflow incontinency and hesitancy. She later developed symptoms of abnormal uterine bleeding, dysmenorrhoea, and menorrhagia. On examination, she appeared ill, severely pale, with non-tender bilateral pitting oedema, and blood pressure = 150/90 mmHg. She was found to have chronic renal failure with obstructive uropathy and congenital unilateral renal agenesis, and abnormal uterine bleeding with severe anaemia secondary to uterine teratoma.

She was managed on repeated blood transfusions and empirical management with antihypertensive drugs, salt and fluid restriction, and antibiotics for chronic renal disease with obstructive uropathy.

*Conclusion:* Although a few cases of uterine teratoma involving corpus, cervix, and fundus have been described, its association with congenital unilateral renal agenesis is rare. Moreover, renal agenesis cases have been mainly reported to coexist with Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome. We, therefore advise that gynaecologists should be mindful of uterine teratoma as a cause of abnormal uterine bleeding in women of reproductive age and presentation with urinary bladder obstruction and features of uropathy should prompt one to investigate for congenital urinary disorders. Corroborative management with a urologist should be considered.

**Keywords:** Unilateral Renal Agenesis, Uterine Teratoma, Case Report

## Background

Teratoma is a tumour with elements representing differentiation from the three embryonic germ layers. It varies in both maturity and organization.[1] It was introduced by Virchow (1863) after coining it from two Greek words teras meaning monster, and the suffix-oma (from onkoma-swelling) to demonstrate its neoplastic nature. It is used to describe both benign and malignant tumours composed of haphazardly intermixed tissues originating from actual or potential pluripotent stem cells.[2]

Although teratomas are the most common Germ Cell Tumours (GCT), primary ones involving the uterine corpus are rare[3] despite first descriptions of the entity predating modern times.[2,4] Further, still the presentation of a primary uterine teratoma with Congenital Unilateral Renal Agenesis (CURA) compounds the rarity of the case. Moreover, there is no clear protocol regarding the treatment of teratomas.

We present a unique case of primary uterine teratoma with congenital unilateral renal agenesis diagnosed in a 20-year-old nulliparous that presented to our hospital with symptoms of urinary urgency that were followed by hesitancy, urinary outflow obstruction, and overflow incontinence for four years, and intermittent cephalo-caudal pattern of body swelling, dysmenorrhoea, and menorrhagia for about three and a half years. We also review and compare literature on the different treatment modalities for uterine teratomas and challenges of diagnosis in a resource-limited setting.

## Case Presentation

We present a case of a 20-year-old nulliparous lady of Black African race from eastern Uganda. She was a primary seven graduate, unemployed and unmarried. She presented to the Gynaecology emergency ward of Mbale Regional Referral and Teaching hospital on 6 January 2020 with a 4 year history of difficulty of passing urine, dysmenorrhoea and menorrhagia, and intermittent body swelling for 3.5 years.

## History of Presenting Complaint

She was a 20-year-old, Human Immune Virus (HIV) seronegative, nulliparous, and unmarried lady who came in as a referral from a district hospital for blood transfusion and further management. She had been reportedly been unwell for about 4 years. According to the referral letter, the patient had arrived at the district hospital on that very day and had had Complete Blood Count (CBC) done and indicated a haemoglobin concentration of 6.8g/dl. However, she was referred after collapsing while coming from the washrooms. She further revealed that she had been readmitted at a district hospital following discharge about 10 days ago with a history of failure to pass urine and had had urethral catheterization done to relieve the urine retention. She had also had been started on daily 20 mg of oral nifedipine and 40 mg of oral frusemide.

She reported that she had been unwell for the past 4 years with difficulty in passing urine, painful and increased menstrual flow (dysmenorrhoea and menorrhagia respectively), and intermittent body swelling for 3.5 years. The changes in urinary habits were preceded by urgency and later hesitancy. The mother estimated that her daughter would spend about 15 minutes while urinating. Moreover, several months prior to admission, she reported episodes of complete urinary obstruction that would only be relieved by urethral catheterization (this was done on several occasions by lower health centres). On several occasions, a catheter would be left in situ for some days for the patient to later return for its removal. Although initially, she would require catheterization to relieve urinary retention at least once in 2 months, the situation had worsened over the past 5 months with a need for catheterization almost on a weekly basis. The mother reported getting used to the situation, knowing that her daughter suffered from a disease that was treated by passing a catheter, so she often made frequent visits to clinics for the procedure. She also reported episodes of overflow incontinence during the obstruction. Furthermore, she reported a history suggestive of haematuria and/ or haemoglobinuria, and pyuria. Moreover, this was associated with urinary urgency, lower abdominal swelling and pain, and vomiting. The abdominal swelling was progressive in nature and more marked at the lower abdomen, worsened by the inability to pass urine and partially relieved by urethral catheterization. Although the swelling was initially painless, it later became painful, especially during her menses and scored 9/ 10 on the virtual pain scale. This was associated with menorrhagia. She also had a history of intermenstrual bleeding three months prior to admission. She had her menarche at 14 years. Menses were initially regularly regular with bleeding lasting for 3 days and usage of two pads a day on an average. She denied any involvement in penetrative vaginal intercourse or suffering from sexually transmitted diseases, and stated no history of use of contraceptives.

About 3 years and 6 months ago, she noticed intermittent body swelling of cephalo-caudal pattern with diurnal variation. It was neither associated with palpitations, easy fatigability, difficulty in breathing, cough, nor chest pain.

There was an associated loss of appetite and vomiting regardless of feeding, and episodes of fever that were treated as malaria, but with no relief. No history of early satiety, constipation, diarrhoea, eyes turning yellow, or body itching was reported.

Medical, family, and psycho-social history including relevant genetic information history was unremarkable.

## Examination

### General Examination

She was a sick looking bedridden young lady lying in bed, in severe pain, had a puffy face with naevi on the right cheek. She was febrile with a temperature of $37.8^0$ Celsius, had moderate pallor of the mucous membranes, no features suggestive of any bleeding tendency, and $SPO_2$ = 93% on room air. She had non-tender bilateral pitting pedal oedema.

### Systemic Examination

**Cardiovascular System:** Radial pulse was 80 beats/ min, Blood pressure = 150/ 90 mm Hg, taken on the left arm in lying position.

**Respiratory System:** Respiratory rate = 24 breaths/minute. No feature of respiratory distress.

**Abdominal Examination Inspection:** The abdomen was moderately distended especially in the hypogastric region, and the umbilicus was inverted.

On palpation, there was tenderness at the hypogastric region and renal angles, and a 10x9 cm suprapubic mass originating from the pelvis. The mass was moderately tender, firm, smooth, round, moved with respiration, and was not associated with any bruit.

**Vaginal Examination:** She had a urethral catheter in situ passing straw-coloured urine. The vagina and vulva were normal. No evidence of cervical bleeding or any cervical lesions was found.

## Investigations

Liver and renal function tests done on 7 January 2020 showed low albumin, elevated alkaline phosphatases = 140U/L (40 - 129), elevated ASAT/ GPT = 65U/L (8 - 48), elevated creatinine = 323 umol/liters (60 - 125) and Blood Urea Nitrogen (BUN) = 7.8 mmol/L (2.7 - 7.8), $K^+$ = 4.4 mmol/L (3.5 - 5.5), $Na^+$ = 135.9 mmol/L (135 - 150), and $Cl^-$ = 102.4 mmol/L (95 - 115) -Clinical chemistry tests done on 23 January 2020 showed low albumin 2.82 (3.8 - 5.1), elevated liver enzymes (ALT = 135 U/L, AST = 58 U/L), elevated urea = 158.7 mg/dl (10 - 50), and elevated creatinine = 9.94 mg/dl (0.5 - 0.9).

Pre-transfusion Complete Blood Count (CBC) indicated a haemoglobin concentration of 6.8 g/dl with microcytic hypochromic anaemia (Mean Corpuscular Volume, MCV = 70.1), and marked leucopenia (both total and differential count).

- Abdominal ultrasound scan done on 11 January 2020 showed a pelvic tumour and left hydronephrosis
- Abdominal CT scan done on 14 January 2020 indicated a pelvic tumour, left hydronephrosis, and right renal agenesis
- Non-contrast and contrast axial CT scan of the abdomen were done m (1.0 mm and 1.5 mm)

**Report:** There is a large ovoid heterogeneous solid mass 112x100 mm in the pelvis continuous with and displacing the uterine body/ fundus superiorly. The mass is posterior to the urinary bladder and anterior to the rectum.

Contrast scans showed a heterogeneous enhancement of the mass. The uterine cervix was not well-depicted and there was no clear plane of separation between the mass and the uterus. There was dilatation of the left pelvicalyceal system and ureter up to its distal end. Right ureters and kidney were not visualized. A pelvic mass (teratoma) with right renal agenesis was found.

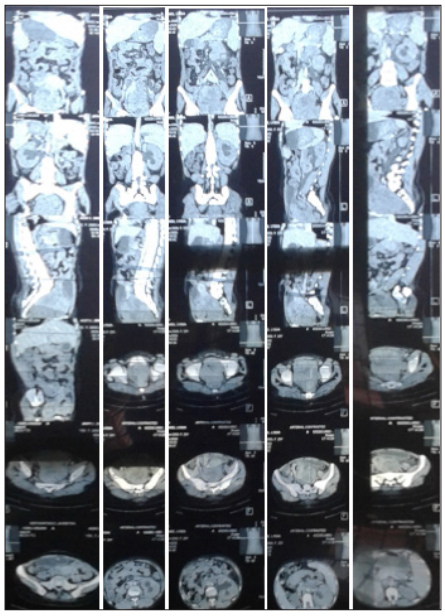

**Figure I**

## Impression

A 20-year-old nulliparous with:

- Abnormal uterine bleeding secondary to a uterine teratoma mass measuring 112x100 mm
- Congenital unilateral renal agenesis with chronic renal failure (secondary to chronic kidney disease and obstructive uropathy)

## Treatment

She had 9 blood transfusions to correct anaemia, intravenous tranexamic acid 500 mg 12 hrly for 5 days (to control bleeding), tablet Fefol (combination of 65 mg iron and 400 micrograms of folic acid), every 12 hours for iron and folic acid replenishment, intravenous (IV) iron sucrose 20 mg in 100 ml of 5% dextrose, tab nifedipine 20 mg 12 hrly, tabs captopril 6.25 mg once and IV frusemide 20 mg once daily (this was to control hypertension and relieve oedema and ascites), caps TRAP (tramadol hydrochloride and paracetamol) one tablet 12 hrly for 5 days (as analgesic), intravenous metoclopramide 10 mg 12 hrly for 5 days (this was given as an antiemetic) and intravenous ceftriaxone 2 g

once daily for five days (this is a broad-spectrum antibiotic majorly targeting gram-negative and some gram-positive organisms), intravenous metronidazole 500 mg 8 hrly for 5 days (this is to target the anaerobic organisms), and was advised limited salt intake and precaution against added table salt.

## Surgical Intervention

Under general anaesthesia, she underwent exploratory laparotomy and total abdominal hysterectomy. At laparotomy, we found about 2 litres of straw-coloured peritoneal fluid with non-offensive smell, enlarged uterus extending out of the pelvic cavity, with an easily friable, cheese-like mass (soft consistency, and yellow colour) involving the anterior uterine wall of the uterus. The posterior uterine wall, the ovaries, and the oviducts were macroscopically normal. There was no evidence of gliomatosis peritonei. A simple Total Abdominal Hysterectomy (TAH) was done and the whole uterus specimen was preserved in formalin for histology. TAH was important in reducing the pressure effects, relieving the obstructive symptoms caused by the tumour, and then obtaining histology results.

## Follow Up

### 1st day post-operative

The patient was admitted in a High Dependence Unit (HDU). She was fully conscious but was in pain.

- $SPO_2$ = 98% on room air, pulse = 68 beats/min, regular, normal volume, BP = 140/90 mmHg, RR = 19 breaths per minute, temperature = 37.1 °C
- She had moderate pallor of the conjunctiva and mucous membranes, had a puffy face, no jaundice, no cyanosis, and no dehydration. Weight was not taken because the patient was too weak to stand

**Per Abdomen:** Severely tender but bowel sounds present.

### Days 2-3 Post-Operative

The patient stayed a further 3 days in the ward in a fair condition but developed sepsis and surgical site infection on the third post-operative day. She had markedly high temperature of 38.6°C, tachycardia with a radial pulse rate of 110 bpm, BP = 148/100 mmHg, respiratory rate = 20 breaths/min. Urethral catheter was in situ and had drained 1 litre of clear urine in 24 hours.

We substituted IV ceftriaxone with IV cefotaxime 3g once daily but continued with the rest of the treatment. We opened alternate sutures to allow pus drainage and a sample was taken for gram staining, culture, and sensitivity. Urine sample was also taken for gram staining, culture, and sensitivity.

She was later referred to the Mulago National Referral Hospital (only public facility with oncology unit and specialized renal unit) for management of Chronic Kidney Disease (CKD) and follow up in the Gynaeoncology unit on the fourth post-operative day. She had not processed the histology results since this is a paid-for service and her family had no resources at that moment.

### Days 4-24 Post-Operative

She reportedly died three weeks after referral.

## Limitations

Histology services are out-of-pocket expenditure for our patients and the parents did not have the money for sample processing. Histological analysis and the subsequent classification of teratoma (mature or immature) were therefore not done. Nevertheless, she was referred with her sample. Unfortunately, they reportedly decided to go back to the village because of resource constraints.

## Discussion

Teratomas are the most common germ cell tumours. They can be either monodermal or can consist of two or three germ layers (ectoderm, endoderm, and mesoderm), derived from a pluripotential malignant precursor cell. Although the recognition of teratomas stretches way back to the seventeenth century with scattered descriptions in ancient times, followed by increasingly frequent gross anatomical observations[2], primary teratomas of the uterus have rarely been reported since Mann's first description in 1929.[3,4]

Clinical observations of the biological behaviour and presentation of teratomas have as well advanced from isolated descriptions of patients and case series with both extragonadal and gonadal tumours alike. The understanding of teratomas was initially attributed to demons and various forms of sexual misbehaviour[5], then to an irregular conglomerate mass containing tissues and fragments of viscera belonging to a suppressed foetus (parasitic foetus) attached to an otherwise normal individual (there is a lack of axiation in teratomas barring a few rare exceptions) because of lack of metameric segmentation or delamination of germ cell layers[2], and later to the composition of teratomas being composed of various germ layer cells through a number of mechanisms[6].

Moreover, teratomas can be classified as mature or immature on the basis of the presence or absence of immature neuroectodermal tissues. Mature teratomas consist of adult-type differentiated components such as cartilage and glandular epithelium whereas the immature teratomas contain tissue with partial somatic differentiation similar to that in foetal tissue.[7] We were unable to do histology and therefore we could not classify our case.

Teratomas can also be classified as either gonadal (if present in ovaries in females and testes in males) or extragonadal

(especially at the sites of primordial germ cell migration along the body axis - from the pineal gland to the coccyx).[8] Other sites' involvement is rare.[2] Extragonadal teratomas are rare and represent 1-2%[9] of all the germ cell tumours. They commonly develop in midline structures and are mostly retroperitoneal or mediastinal with visceral localizations hard to come by.[10] Moreover, uterine teratomas are extremely rare.[7,11]

In this case report, the tumour was extragonadal and was most likely a solid mature teratoma given the intra-operative findings.

Teratomas of the uterus should be differentiated from other tumours that can present with more than one germ layer, such as a mixed Müllerian tumour, and from perforated ovarian teratomas. Neuroectodermal tumours also need to be excluded.

Regarding the origin/ aetiology of teratomas, theories have been advanced.[12] The first theory or gastrulation theory elucidates that teratomas arise from the remnants of the primitive streak or primitive node. During week 3 of development, midline cells at the caudal end of the embryo divide rapidly by the process of "gastrulation" giving rise to all the three germ layers of the embryo.[13] By the end of week 3, the primitive streak shortens and disappears.

The second/ parthenogenetic (from the Greek: parthenos - virgin, genesis - origin, interpreted as "virgin birth") theory postulates that teratomas originate from totipotent primordial germ cells (PGCs)[14] that normally develop among the endodermal cells of the yolk sac near the origin of the allantois and migrate to the gonadal ridges during weeks 4 and 5 of gestation. It is postulated that some cells may miss their target destination and produce a teratoma.[15,16]

The third theory is incomplete twinning or blastomeric theory.[2] This has however received little support since the karyotype of the teratoma is always 46,XX.

This 20-year-old patient was nulliparous and therefore the uterine teratoma development, in this case, does not support the blastomeric theory. This is similar to a study by Tyagi et al.[17] Parthenogenetic theory (virgin birth) has been much postulated as a possible mechanism of development of such teratomas including but not limited to ovarian teratomas.[15,16] Molecular genotyping can help answer the question of origin.[18] We, therefore, envisage that this origin followed the parthenogenetic pathway.

The presentation of uterine teratomas with abnormal vaginal bleeding has been elucidated in various cases.[3,7,19-22] This is similar to our case in terms of presentation. Our patient presented with menorrhagia and severe anaemia. However other non-specific symptoms are also common.[3,7] The initial symptoms in our case were urinary urgency, hesitancy, urinary bladder obstruction, and periodic overflow incontinence. This presentation was similar to that of the postmenopausal patient in Morocco[3] and differed from a case in Korea in which leucorrhoea was predominant.[20] Other cases have been asymptomatic and were discovered incidentally.[23]

Radiological diagnosis of uterine teratomas can be a challenge in low resource settings where Computed Tomography (CT) scan and Magnetic Resonance Imaging (MRI) are largely a luxury. Our patient's radiological imaging revealed a pelvic mass which could be any swelling ranging from a pelvic abscess. This is similar to a case in Tanzania in which the teratoma was diagnosed as a pelvic abscess but on an exploratory laparotomy and histopathological analysis of the excised bulky uterus, a diagnosis of teratoma was made.[19] In facilities where health care workers can access CT and MRI, a correct diagnosis is more likely because of their higher accuracy compared to the ultrasound imaging as was in our case.[7] However, a Colour Doppler ultrasound is noted to be superior to other imaging modalities with the highest positive predictive value of 9.6 compared to 7.6 for MRI and 3.6 for CT.[24] In the case of this patient, a CT scan was used for diagnosis before surgery.

This patient also presented with Congenital Unilateral Renal Agenesis (CURA). The development of kidney begins in the fourth week of Intrauterine Life (IUL) from intraembryonic mesoderm. Nephrogenic cord derived from intermediate mesoderm forms a longitudinal ridge on the posterior abdominal wall on each side of the dorsal aorta and extends from the cervical to the sacral region.[25] Human renal development begins in the fifth gestational week and is dependent on highly coordinated interactions between the outgrowing ureteric bud of the mesonephric duct and the metanephric mesenchyme.[26] Renal agenesis occurs when the ureteric bud fails to form the ureter, renal pelvis, collecting ducts, and the renal mesenchyme to form nephrons. It seems to be linked to a failure of the GDNF (glial-derived neurotrophic factor) - RET (rearranged during transfection) signalling. The activation of GDNF in the metanephric mesenchyme is controlled by a complex molecular network that includes regulation by EYA1 (Eyes-absent homologue 1).[26] CURA is defined as the one-sided congenital absence of renal tissue resulting from the failure of embryonic kidney formation.[27]

Although Congenital Bilateral Renal Agenesis (CBRA) occurs in 1 in 3000 births and is 2.5 times more common in males than in females[28] as compared to CURA that has an incidence rate of 4.0/10,000[29], the latter is more common because the former is incompatible with life, with the longest surviving child having lived for only 39 days.[30] Congenital solitary functioning kidney in one study was associated with a 53% incidence of absence of the left kidney, and 60% were found with other anomalies with urological anomalies

being the single most common at 37%, while non-urological anomalies were detected in 44% of the cases (with cardiac anomalies being the most common ones).[31] In another study done to estimate congenital unilateral renal agenesis (CURA)associated abnormalities, 31% were found to have extrarenal anomalies. Hypertension was found in 16% and microalbuminaemia was found in 21% of the patients.[32] Our patient too had hypertension and hypoalbuminaemia.

CURA has been associated with gynaecological abnormalities such as Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome[33-36], sacrococcygeal teratomas[34], and ovarian agenesis.[37] Cases of Herlyn-Werner-Wunderlich (HWW) syndrome - a rare congenital disorder characterised by uterus didelphys, obstructed hemivagina, and renal agenesis (acronym OHVIRA syndrome), have been described.[38,39] Our patient did not have any of these abnormalities.

Moreover, in agreement with our findings, patients with renal abnormalities are likely to have both upper and lower genital tumours. However, this is seen more in patients with simultaneous malformations of the genital and urinary tracts.[35-37] However, to the best of our knowledge, no uterine teratomas are documented in patients with CURA like ours.

## Management of Uterine Teratomas

The rare occurrence of uterine teratomas is further complicated by a lack of standardized forms of management. However, a review of the literature seems to suggest that in most cases, total excision and hysterectomy are sufficient, although cases of relapse necessitating the use of chemotherapy have been reported.[3,7,19,22,23,40,41]

By review of the literature, the presentation, site, histological types and management methods, relapses and treatment of relapses have been summarized (Table 1).

**Table 1.Clinical and Histopathological Characteristics of Patients with Primary Uterine Teratomas and Mode of Management per Literature**

| Author | Age (years) | Symptoms | Site of the Tumour | Histology | Treatment | Relapse (months) | Treatment of Relapse |
|---|---|---|---|---|---|---|---|
| Our case | 20 | Nulliparous with recurrent urinary obstruction, urinary urgency and later overflow incontinence. Body swelling, ascites and high blood pressure, menorrhagia, dysmenorrhoea, and severe anaemia | Corpus | Not done | Hysterectomy and referred to National referral hospital | - | - |
| Kamgobe et al.[19] | 21 | Abdominal distention | Corpus | Mature teratoma | Hysterectomy | None | - |
| Meryam Ben et al.[3] | 56 | P1 + 0 with a history of dysuria, burning urination, and progressive lower abdominal distention | Corpus | Immature teratoma | Hysterectomy | Yes (3) | bleomycin, etoposide, and cisplatin-containing chemotherapy |
| Newsom-Davis et al.[7] | 82 | Vaginal bleeding | Corpus | Immature teratoma | Hysterectomy and bilateral salpingo-oophorectomy | Yes (6) | EPx1, ETx1, TPx1 + surgery |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Lim et al.[20] | 27 | Cervical polyp | Cervix | Mature teratoma with lymphoid hyperplasia | Excision | No | - |
| Cappello et al.[23] | 55 | Uterine leiomyoma | Corpus | Mature teratoma with thyroid differentiation | Hysterectomy | No | - |
| Wang et al.[21] | 46 | Abnormal uterine bleeding | Corpus | Mature cystic teratoma | Hysterectomy | No | - |
| Papadia et al. | 58 | Abnormal uterine bleeding | Corpus | Mature cystic teratoma | Excision | No | - |
| Gomez-Lobo et al.[22] | | Nulliparous with prolonged vaginal bleeding, severe abdominal pain, symptomatic anaemia (nonpuerperal uterine inversion) | Not indicated | Immature teratoma, high grade | Excision and chemotherapy | Not specified | - |
| Iwanaga et al.[41] | 36 | Pelvic pain and lower abdominal distention | Fundus | Immature teratoma, grade 3 | Hysterectomy and | No | - |
| Ansah-Boateng et al.[42] | 37 | Vaginal bleeding | Not specified | Immature teratoma, grade 3 | Hysterectomy and radiotherapy | No | - |

## Strength and Limitations

We were able to provide medical care based on minimal investigations, relieve the obstructive uropathy symptoms, and stop the bleeding. However, complete workup in terms of diagnosis and follow up of this patient was not possible due to the financial burden involved both in terms of indirect and direct medical costs such as the need to outsource tests, medications, and feeding. Symptoms of obstructive uropathy that had been accelerated by congenital unilateral renal agenesis probably needed dialysis. The death of this patient further emphasizes the socio-economic aspect of disease and how it affects the outcome.

## Conclusion

Despite its rarity, the possibility of teratoma should be kept in mind in the differential diagnosis of uterine corpus tumours with abnormal uterine bleeding and urinary bladder obstruction. One needs to rule out congenital urogenital anomalies. Regarding management of the uterine teratoma, a simple total abdominal hysterectomy is sufficient in most cases but follow up to exclude recurrence is vital.

## Patient Perspective

She was able to appreciate the relief of abdominal distention and easy passage of urine through the catheter but regretted the loss of her uterus mainly because of her nulliparity status. She hoped that the cancer had not spread.

List of Abbreviations: BEP: bleomycin, etoposide, cisplatin; CT: Computed tomography scan; CBRA: Congenital bilateral renal agenesis, CURA: Congenital unilateral renal agenesis; GDNF: glial-derived neurotrophic factor; EP: etoposide, cisplatin; ET: etoposide, paclitaxel; PGCs: primordial germ cells, HWW: Herlyn-Werner-Wunderlich syndrome; IUL: intrauterine life; MRKH: Mayer-Rokitansky-Kuster-Hauser syndrome; MRI: Magnetic Resonance Imaging; OHVIRA: obstructed hemivagina and ipsilateral renal agenesis; RET: rearranged during transfection; TP: paclitaxel, cisplatin; VAC: vincristine, actinomycin D, cyclophosphamide.

## Declarations

Ethics Approval and Consent to Participate

This case report does not involve any active intervention on patients, therefore, ethics approval is not applicable.

## Consent for Publication

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

## Availability of Data and Material

Data sharing is not applicable to this article as no datasets were generated or analyzed for this case report.

## Authors' Contributions

SS and NJ wrote the case report. NJ wrote the first manuscript. All authors read and approved the final manuscript.

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**Conflict of Interest:** None.

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