# A Case of Hydropyometra Secondary to Vaginal Atresia: A Case Report

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## Abstract

Hydrometrocolpos refers to the accumulation of secretions within the endometrial and endovaginal canal. The causes of retention of cervico-vaginal secretions are varied. Herein, we report a case of a seven-day-old female child presented to us for follow up as antenatal ultrasound done at nine months which had showed round cystic lesion with internal echoes in fetal lower abdomen. With the help of clinical examination and diagnostic imaging, the case was diagnosed as hydropyometra secondary to vaginal atresia and managed successfully by surgical intervention.

## INTRODUCTION

Neonatal hydrometrocolpos is a rare condition which requires a high index of suspicion for diagnosis. It occurs secondary to a combination of stimulated secretions as well as distal vaginal obstruction.[1,2] The causes of retention of cervico-vaginal secretions are varied and include imperforate hymen, transverse vaginal septum, abnormal vaginal opening, vaginal atresia and malformations of cloaca including urogenital sinus.[3] A detailed prenatal ultrasound focusing on the fetal pelvic anatomy will provide anatomic details and facilitate appropriate prenatal counseling to parents.[4] Early ultrasonological diagnosis improves the prognosis especially in children with associated complication of obstructive uropathy.[5] We report a case of a seven-day-old female child presented to us for follow up as antenatal ultrasound showing round cystic lesion with internal echoes in fetal lower abdomen.

## CASE REPORT

A seven-day-old female child with history of a full term, lower segment caesarean section (LSCS) for previous LSCS presented to us with pustulosis. There was a history of antenatal ultrasound done at nine months showing round cystic lesion with internal echoes in fetal lower abdomen, likely ovarian cyst, associated with left moderate hydronephrosis. The pregnancy was uncomplicated and previous three ultrasonograms done until five months of intrauterine age did not detect any abnormality. The child had passed meconium and was micturating normally since birth. On physical examination, the child was of appropriate weight for gestational age and had no dysmorphic features.

On clinical examination, the child had multiple pustules in abdomen over periumbilical region, groin and back, which were 20 - 30 in number. There was no palpable mass in abdomen. On clinical examination of the vaginal introitus

and canal, vulva looked normal, no vaginal opening could be seen which was suggestive of outlet obstruction / vaginal atresia. The child was referred to the Department of Radiodiagnosis for evaluation of the abdominal mass. On ultrasound examination, there was a cystic space occupying lesion in pelvic cavity with internal hypoechoic content and left mild hydroureteronephrosis (Figure 1).

The child underwent computer tomography (CT) scan of the abdomen and pelvis, which showed approximately 7.3 x 7.2 x 5.2 cm sized hypodense collection with pear shaped wall tapering inferiorly noted involving the abdomen and pelvis (Figure 2). The inferior aspect was noted between rectum and urinary bladder. The uterus was not separately visualized. It was anteriorly displacing urinary bladder, superiorly displacing the bowel loops and abutting the psoas muscle and iliac vessel posteriorly. The bilateral ureters were laterally displaced and the mass effect was causing moderate upstream dilation on the left ureter and pelvicalyceal system. The features were suggestive of gross hydrometra with mild right and moderate left hydroureteronephrosis.

Figure 1. Ultrasound abdomen of the child showing the cystic space in pelvic cavity with internal hypoechoic content and left mild hydroureteronephrosis

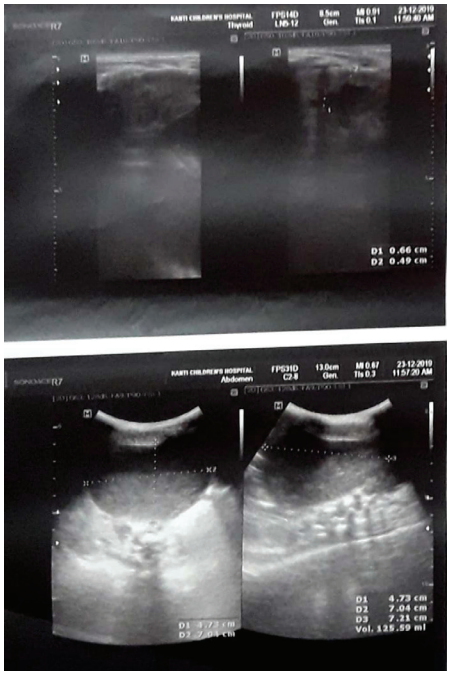
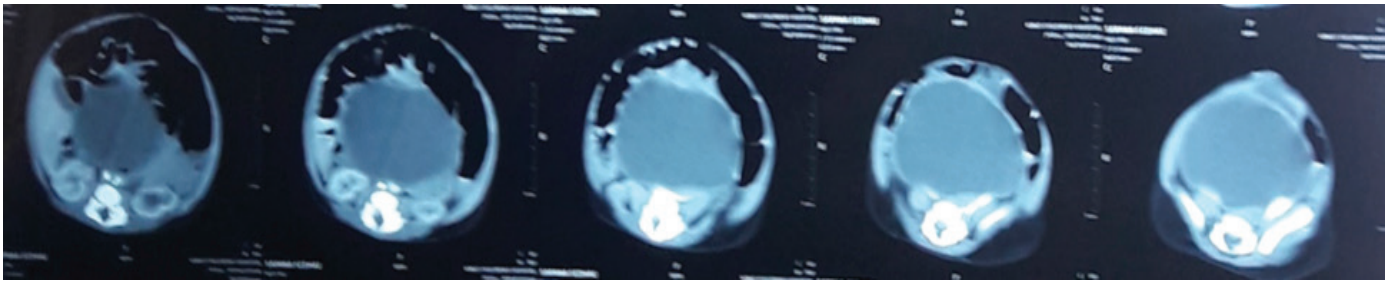


Figure 2. CT scan of the abdomen of child



CT Scan image showing hypodense collection with pear shaped wall tapering inferiorly noted involving the abdomen and pelvis.

With the findings from the radio imaging, a team of obstetrician and gynecologist was consulted. Under aseptic conditions, 120 ml serosanguinous fluid was aspirated from the uterine cavity. On examination of aspirated fluid, total leucocyte count was 1750 / cmm, with 10% neutrophils and 90% lymphocytes. No Acid-Fast Bacilli was detected. On gram staining, few pus cells, plenty of epithelial cells and plenty of gram negative bacilli were detected. Stenotrophomonas maltophilia sensitive to cotrimoxazole, ciprofloxacin, levofloxacin, ceftazidime, tigecycline and chloramphenicol was isolated. The organism was resistant to ampicillin / amoxicillin, gentamycin, amikacin, cefixime, aztreonam, imipenem, meropenem, piperacillin + tazobactam, cefepime, ampicillin sulbactam, doxycycline and amoxiclav. The ultrasound of the abdomen done after aspiration of fluid showed residual (approximately 8 ml) intrauterine collection.

## DISCUSSION

The final diagnosis was gross hydropyometra secondary to vaginal atresia with mild right and moderate left hydroureteronephrosis, and Stenotrophomonas maltophilia was isolated from the fluid. The initial diagnosis of pelvis mass in our patients was done by prenatal ultrasound. Although there was abdominal mass in the ultrasound, there was no palpable mass in the abdomen. Hammad FT et al reported that hydrometrocolpos was the cause in 23% of patients with infravesical obstruction and 39% of those cases presented at birth as a result of prenatal ultrasound diagnosis of pelvic pathology.[6]

The vaginal atresia can be associated with several syndromes like Mckusick-Kaufman syndrome and Bardet-Biedl syndrome. The vaginal septum can also be associated with syndromes associated with mullerian aplasia.[1] Our patient was eumorphic with no associated congenital anomalies. The infant had normal fallopian tubes and ovaries but uterus was not visualized separately on imaging studies. There was no family history of urogenital disorders and no genetic testing was performed.

The most common complication of hydrometrocolpos is compression of the bladder, leading to hydronephrosis, which can ultimately cause kidney damage.[7] The other complications including sepsis and pyocolpos have been reported in the literature.[7-9] Our case also had hydropyometra with mild right and moderate left hydroureteronephrosis, and Stenotrophomonas maltophilia was isolated from the fluid. It was anteriorly displacing urinary bladder, superiorly displacing the bowel loops and abutting the psoas muscle and iliac vessel posteriorly.

The complications of hydrometrocolpos can be decreased by timely intervention and drainage of accumulated fluid. The drainage of hydrometrocolpos dramatically improved the hydronephrosis in our patient. If patients had re-accumulation of fluid in vaginal vault, such patients would benefit from draining the hydrocolpos with an indwelling transabdominal vaginostomy tube for continuous drainage until the definitive repair. The transabdominal drainage of hydrocolpos with indwelling tube is more preferred than transvaginal drainage to prevent re-accumulation.[7] In general, infants with hydrocolpos and urogenital sinus have increased risk of sepsis due to collection of urine in vaginal vault. There have been reported deaths due to sepsis associated with hydrocolpos.[8,9] In an animal study by Balamurugan B et al, they treated a goat having hydrometra with synthetic prostaglandin F2α successfully.[10] In our case, transvaginally 120 ml serosanguinous fluid was aspirated from uterine cavity with minimal residual volume.

## CONCLUSIONS

Neonatal hydrometrocolpos is a rare condition. It should be suspected when a prenatal ultrasound identifies an abdominopelvic mass. The prenatal diagnosis during scan and early newborn imaging can lead to early detection and treatment of these cases. This can prevent complications like hydronephrosis and kidney damage secondary to compression and obstruction of surrounding structures.

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