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Case Report

Retroperitoneal Cystic Lesion in Pregnancy Due to a Mega Ureter

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Abstract: Mega ureter can be divided into Primary and secondary mega ureter (PMU & SMU). Rarely PMU can present during pregnancy as non-obstructed, non-refluxing or as refluxing obstructed mega ureter. We report a case of mega ureter which incidentally found during pregnancy. **Case:** 23yr old, previously healthy primi gravida presented for the routine dating scan at 12th weeks of gestation was found to have a right sided unilocular large retroperitoneal cystic lesion filled with anechoic fluid. Rest of the scan findings were normal. She was asymptomatic except for usual pregnancy symptoms. Further evaluation confirmed presence of right sided mega ureter. She was managed conservatively together with Genitourinary surgical team. She was induced at term and had to undergo emergency caesarean delivery due to fetal distress. She was planned to review with CT-IVU after six weeks. **Discussion:** Crucial point in management is to differentiate PMU from SMU. Differential diagnoses are peripelvic cyst, congenital megacalyces, calyceal diverticula and capacious extra renal pelvis. Ordinary IVU or CT-IVU, MCUG will help to demonstrate reflux of urine at vesico-ureteral junction but can't be done during early pregnancy due to radiation to the fetus. Proper management should be done once the body physiology normalizes following delivery. Patients should be regularly screened and advised on prevention of UTI. Delivery should be planned via a multi-disciplinary team discussion. **Conclusion:** Even though asymptomatic mega ureter in pregnancy doesn't need treatment, patients should be kept under careful surveillance for the complications. Definitive treatment should be offered following delivery.
Keywords: Retroperitoneal, cyst, mega ureter, urinary tract infection.

Introduction

Mega ureter is a condition where ureters have dilated more than the usual and is not a diagnosis. It can be divided mainly into two, Primary and secondary mega ureter. Primary mega ureter is due to intrinsic problem of the ureter (Structural or functional) and secondary mega ureter is due to a secondary cause like posterior urethral valve or neurogenic bladder. Furthermore, primary mega ureter can be divided as refluxing mega ureter and primary obstructive mega ureter (POM). Refluxing mega ureter is due to expansion of the ureter due to reflux and POM is due to narrowing of the ureter at its entrance to the bladder causing a block and dilatation.

Rarely primary mega ureter can be present without any of the above (None obstructed, non-refluxing mega ureter) or combination of above (Refluxing obstructed mega ureter). Refluxing at vesicoureteral junction occur due to failure to maintain unidirectional flow. POM is generally not commonly seen in adults and occurs due to intrinsic abnormality of the lower segment of the ureter at vesicoureteral junction[1]. This is less common in females and 15-25% of cases are bilateral.

Generally, both these groups present with flank pain, hematuria, stone formation, urinary tract infections and chronic renal failure.

Investigations should be done to confirm the diagnosis and screen for the complications. Ultrasound scan (USS) of the abdomen and pelvis, intravenous urogram (IVU), micturition cystourethrogram (MCUG) and CT-IVU can be used to confirm the diagnosis and determine the type[2]. Urine full report, serum creatinine, blood urea, serum electrolytes can be used to screen for the complications. Hydro nephrosis and hydro ureter is more common than mega ureter during pregnancy as it is physiological in most cases due to compression of ureter at linea terminalis by the gravid uterus[3]. Most of the time this is reversible after six weeks of delivery. This is more common in primi gravida, in right side compare to left and only seen above the linea terminalis. But the mega ureter is starting from renal pelvis up to the vesicoureteral junction. Physiological hydro nephrosis and hydro ureter usually do not cause any symptoms during pregnancy.

Cases regarding mega ureter during pregnancy and its management are lacking in literature. This is a case of mega ureter which incidentally found during pregnancy.

Case

A 23-year-old primi gravida presented for the routine dating scan at 12th weeks of gestation and found to have a right sided unilocular large retroperitoneal cystic lesion filled with anechoic fluid. Rest of the scan findings was compatible with the 12 weeks ongoing pregnancy. Other than usual pregnancy symptoms in first trimester, she remains asymptomatic. She didn't have features of urinary tract infection, hematuria or previous history suggestive of chronic kidney disease. She denied any past history of undergoing ultra sound examination.

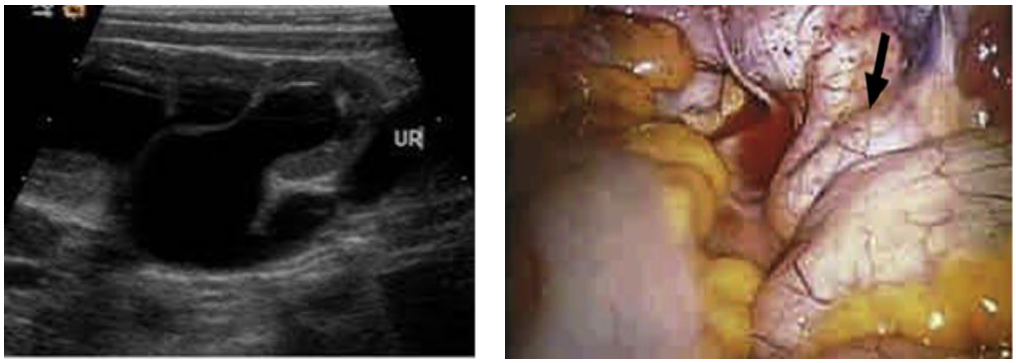

Figure 1: Ultra sound appearance of mega ureter (Left) and intra-operative view of mega ureter (Right)

This lesion was further evaluated by the consultant Radiologist and confirmed the right sided mega ureter. Her urine culture confirmed the absence of any ongoing urinary tract infection. Her blood urea, serum creatinine and serum electrolytes were normal. She was referred to Genitourinary surgical team and conservative management was opted until she delivers as she remains asymptomatic and not having any complications of mega ureter. She was induced at term and had to undergo emergency caesarean delivery due to fetal distress. Mega ureter was noted right lateral to the uterus. Her recovery was uneventful. She was planned to review with CT-IVU after six weeks.

Discussion

Incidence of retroperitoneal cystic lesions varies from 1 in 5750 to 1 in 250000 patients[4,5]. Approximately 30% of them are asymptomatic[6] and 50% of them may present with vague abdominal pain or distension[7]. As number of differential diagnoses is very high, the treatment modalities and their clinical implications differ greatly according to the patient's symptomatology and histological diagnosis of the cystic lesion. Cystic lesions in the retroperitoneal space may be arise from heterogeneous multiple embryological remnants, neuroectoderm, notochord and hind gut[8] which

gives arise to retroperitoneal cysts or mega ureter which gives a picture of a retroperitoneal cystic lesion. Ultrasonography, computerized tomography and magnetic resonance imaging can be used to describe the characteristics of the lesion (lesion shape, size, location, and the presence or absence of septa, calcifications, or fat) and come to a diagnosis or narrow down the differential diagnosis[9].

"Mega ureter" is a descriptive term rather than a diagnosis which used to describe many conditions[10]. Crucial point in management is to differentiate the primary mega ureter from secondary mega ureter. Primary mega ureter also called as congenital mega ureter[11]. Sometime primary mega ureter may associate with congenital megacalyces and ipsilateral renal dysplasia[12,13]. As this patient didn't have any features suggestive of bladder out flow tract obstruction or neurogenic bladder which lead to secondary mega ureter, this has to be considered as primary mega ureter even though it had not been detected before this. Presence of this retroperitoneal cystic lesion below the level of linea terminalis up to the bladder can be used to differentiate this from physiological hydro nephrosis in an advance pregnancy. Differential diagnoses which should be considered which related to urogenital tract are peripelvic cyst, congenital megacalyces, calyceal diverticula and capacious extra renal pelvis[2].

To find out the type of mega ureter she had to undergo ordinary IVU or CT-IVU. MCUG will help to demonstrate reflux of urine at vesico-ureteral junction. But none of these investigations can't be done during this early pregnancy due to risk of radiation to the fetus. Performing these investigations and come to a proper diagnosis at this stage is not urgent as she is currently asymptomatic and not having complications of the mega ureter. Yet, assessing the function of the affected kidney can't be performed with serum creatinine as other kidney compensate the function and also creatinine level falls during pregnancy due to increase renal plasma flow.

Workup plan and proper management should be started once the body comes back to normal physiology following delivery. Primary obstructing mega ureter management has been changed during last few decades. Even though ureteral reimplantation was the treatment of choice in the past, conservative treatment is now accepted as the mode of management which is successes in 85 to 90% of patients. As minimally invasive surgical options become more popular during last few years, endoscopic balloon dilatation has been achieved a great success in managing obstructing mega ureter in selected patients. But post-operative vesicoureteral reflux is a major complication in this method[10]. As pregnancy itself is a risk factor for urinary tract infections (UTI), she should be regularly screened for urinary tract infections during the rest of the pregnancy with the use of mid urine for culture. Other than that, she should be provided with general advices regarding prevention of UTI during pregnancy.

With the advance pregnancy, she may have increased flank pain due to compression of the mega ureter by gravid uterus. So, she needs to be regularly followed up by urological surgical team. Even though there is no obstetric indication for caesarean delivery in this case, delivery plan should be decided through a multi-disciplinary team discussion. She should have a repeat USS to assess the size and extent of the mega ureter. She should be provided reliable contraception to keep adequate space until next pregnancy as she need proper assessment and treatment for this condition. She should be advised regarding the importance of having pre-pregnancy counselling before the next pregnancy.

Conclusion

Even though asymptomatic mega ureter in pregnancy doesn't need treatment, she should be under careful surveillance for the complications. Definitive treatment should be planned following the delivery.

Declarations

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