

Ultrasonographic and Computed Tomographic Diagnosis of Seminal Vesicle Cyst Associated with Ipsilateral Renal Agenesis: A Case Report

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Citation

S Surana, D Al Refai, M Baj. *Ultrasonographic and Computed Tomographic Diagnosis of Seminal Vesicle Cyst Associated with Ipsilateral Renal Agenesis: A Case Report*. The Internet Journal of Radiology. 2005 Volume 4 Number 2.

Abstract

A rare case of seminal vesicle cyst associated with ipsilateral renal agenesis is reported. The role of ultrasonography and computed tomography in diagnosis and management is discussed.

Congenital malformations of the seminal vesicle are most uncommon and most of them are cystic malformation. Approximately two thirds of them are associated with ipsilateral renal agenesis, since both the ureteral bud and seminal vesicle originate from the mesonephric duct. These were first described by Zinner in 1914 and nearly 120 cases had been reported till 1993. Most patients with this anomaly are asymptomatic or present during early adulthood with non-specific symptoms such as prostatism, urinary urgency, dysuria, painful ejaculation and perineal discomfort. Usually the cysts are 5.0cm or less in diameter and are either a symptomatic or present during early adulthood with symptoms such as urgency, burning, haematuria and hypogastric pain mainly after coitus. Less frequently cysts larger than 8-10 cm occur and such giant cysts can result in colon or bladder obstruction with palpation of mass per rectum. Recent advances in imaging techniques allow a better visualization of the prostate and surrounding structures. The application of transrectal ultrasonography has assumed a significant role in the management of these lesions. There have been few reports of the usefulness of computed tomography (CT) scan in such cases. In this case report, we insist that non-invasive imaging with ultrasonography and CT scan would be sufficient to diagnose case of seminal vesicle cyst associated with renal agenesis for management.

CASE REPORT

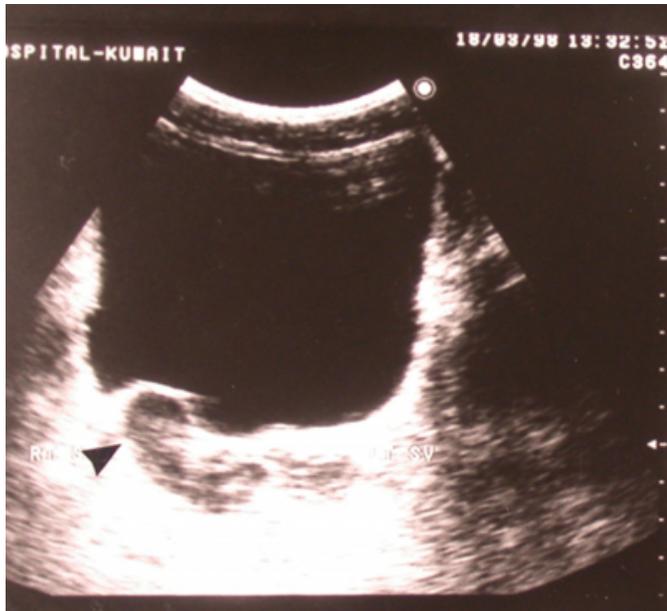
A 30-year-old man presented with complaints of right abdominal pain, abdominal distension, vomiting, irregular bowel movements, burning micturition and suprapubic pain. Patient had appendectomy 17 years ago. No other relevant previous surgical or medical condition recorded. On rectal digital examination, small nodular mass felt superior to prostate gland. Laboratory examinations revealed normal blood count, urine-analysis and semen-analysis. Plain X-ray of abdomen was unremarkable. Ultrasonography (trans-abdominal and trans-rectal) and Computed Tomography (CT) scan confirmed the presence of a cyst in right seminal vesicle associated with right renal agenesis. MRI was not considered due to non availability of endo-rectal surface coil. Also our experience suggests that non-invasive imaging modalities like ultrasonography and CT scan are invaluable in investigating cases with urogenital anomalies and renal agenesis.

Transabdominal ultrasonography revealed non-visualization of right kidney in the lumbar and pelvis regions with cystic

dilatation of right seminal vesicle protruding into right posterior bladder wall (Fig.1).

Figure 1

Figure 1: Transverse pelvic sonography demonstrate cystic dilatation of Rt. seminal vesicle protruding into the posterior bladder wall.



Transrectal ultrasonography showed better visualization of convoluted and distended right seminal vesicle revealing a cyst of 2.6 x 1.8cm in size. (Fig.2 & Fig.3)

Figure 2

Figure 2: Longitudinal transrectal ultrasonography showing a distended convoluted Rt. seminal vesicle with partial visualization of cyst.

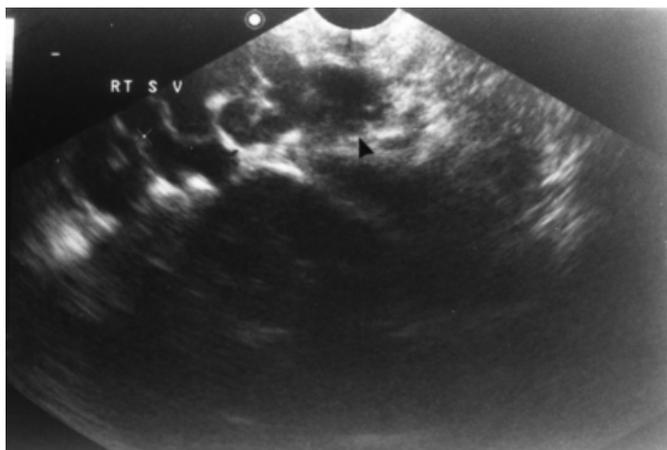
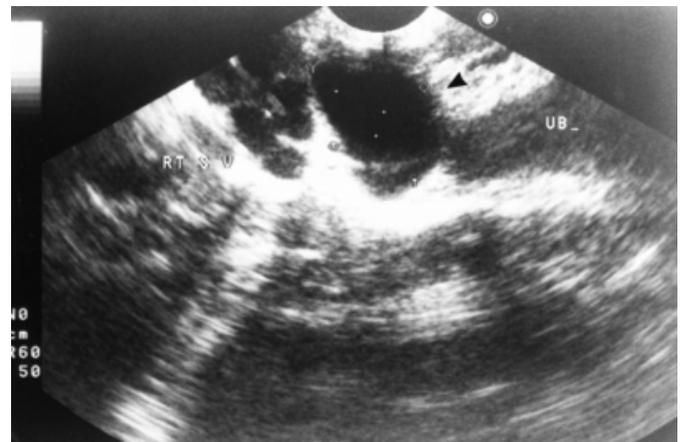


Figure 3

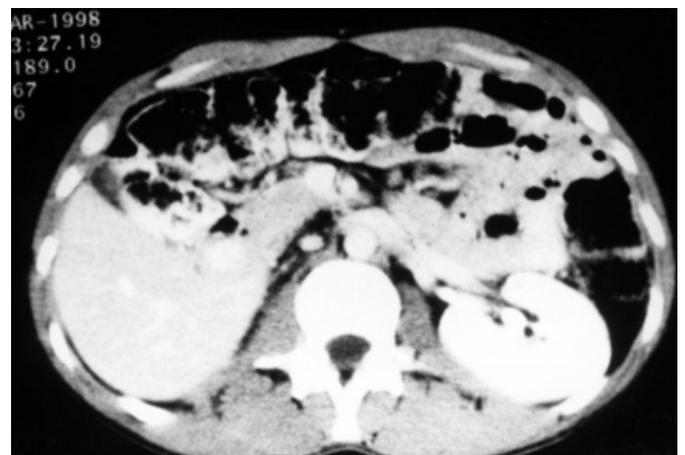
Figure 3: Longitudinal transrectal ultrasonography showing well defined Rt. seminal vesicle cyst.



Scrotal ultrasonography showed mild swollen right epididymis. Non-contrast and post iv contrast Computed tomography scan of the abdomen and pelvis revealed absence of right kidney (Fig.4).

Figure 4

Figure 4: CT scan show Rt. seminal vesicle cyst bulging posterior wall of bladder and anterior wall of rectum.



Absence of contrast filled or urine filled right ureter was also noted (Fig.5).

A hypodense lesion with fluid filled cystic pattern noted in right seminal vesicle, bulging into the postero-lateral wall of the urinary bladder and indenting over anterior wall of the air filled rectum was observed (Fig.6).

Figure 5

Figure 5: CT scan of upper abdomen showing absence of Rt. kidney.

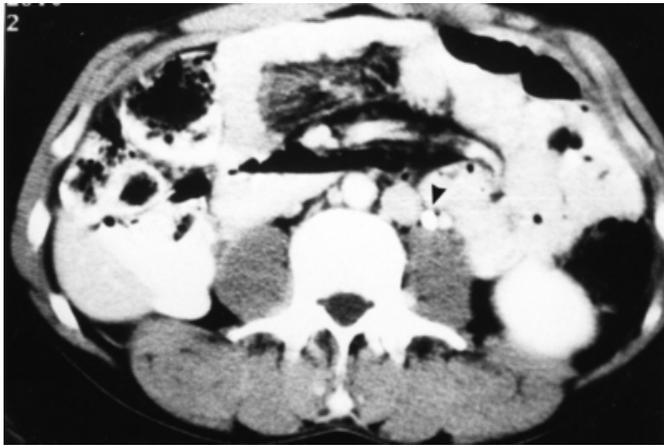
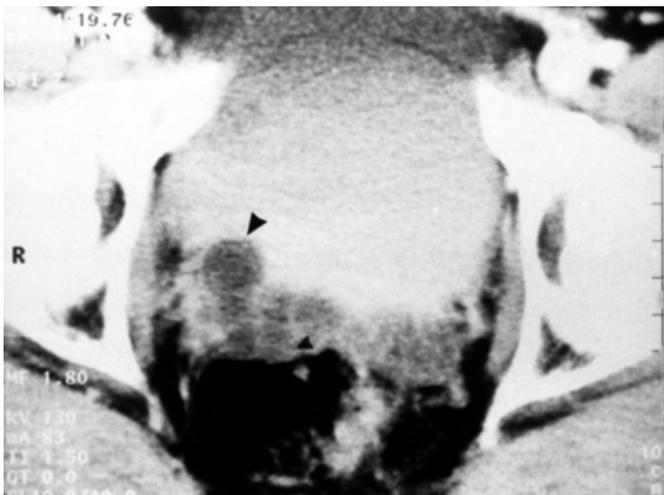


Figure 6

Figure 6: CT scan shows Rt. Seminal vesicle cyst bulging into the postero-lateral wall of the contrast filled urinary bladder indenting the anterior wall of the air filled rectum. (Arrow heads)



Diagnosis of right Seminal vesicle cyst associated with ipsilateral renal agenesis was made on the basis of ultrasonography and computed tomography findings

Patient was treated conservatively with antibiotics, analgesics and decongestive rectal suppositories. He was discharged in good condition with advice of periodic follow up for clinical and sonographic examination.

DISCUSSION

Cyst of the seminal vesicle is exceptionally rare. Most cystic lesions are congenital in origin and are usually associated with malformation or absence of the ipsilateral kidney and

ureter reflecting their embryological heritage. Ectopic insertion of a ureter to the seminal vesicle is also a well-recognized entity. If present, the ipsilateral kidney is usually non-functional.

Conventional radiographic studies (excretory urography, voiding urethrography, and cystoscopy) may demonstrate some abnormality, but usually are non-diagnostic. Percutaneous aspiration of the cyst with injection of contrast media is extremely useful, mainly because of the presence of spermatozoa in the fluid. Vaso-vesiculography can be diagnostic and this has been one of the most useful procedures for demonstrating anomalies of the seminal vesicle, vasdeferens and ectopic ureters. However these are invasive manoeuvre and not without complication.

Both ultrasonography and CT scan can delineate the retrovesicle structures quite clearly. These techniques also allow a distinction between solid and cystic structures.

Ultrasonography appears to be the first choice of imaging modality for the screening of such genito-urinary developmental malformation due to its capability of visualizing the lumbar and pelvic regions simultaneously.

Tansrectal Ultrasonography (TRUS) has assumed a significant role not only in diagnostic evaluation but also in the management of cystic dilations of the internal urogenital system. This imaging modality is non-invasive as compared to vasography and and other invasive procedures. TRUS is more readily available and economical to Computed tomography and Magnetic resonance Imaging (MRI). TRUS not only reveals information about the cyst itself, for example location, size, shape and relationships, but it also delivers valuable information about the prostate and seminal vesicles. Ultrasonographically guided transperineal needle aspiration is well tolerated by the patients and provides fluid from cyst for microscopic and bacteriological examination. The same needle can be used for cystography, an injection of contrast material to cyst.

CT scan depicts the anatomical relationship of the neighbouring structures of internal urogenital system. The value of CT scan in investigating suspected anomalies of the mesonephric duct has been well documented. Presence or absence of the kidney can be determined even if it is non-functional. The urine filled ureter can be followed on sequential contiguous sections to determine its site of drainage, despite lack of function of the kidney. Pelvic anatomy is well displayed by CT. The site of drainage of the

ureter is accurately shown in cases of ectopic insertion. Although, sometimes Sonography might be inadequate because bowel gas may obscure the distal ureter.

If genitourinary cystic dilatations with ipsilateral renal agenesis or dysplasia are discovered in an a symptomatic patient through mass screening or if the patient is only mildly symptomatic, surgical treatment may not be necessary. The choice of treating seminal vesicle cysts depends on symptoms that related to size and location.

Since sonography is non-invasive modality, it can serve as a tool for long term follow up of such non-operative patients for the evidence of genitourinary tract infections and the status of the functional solitary kidney.

Diagnosis by non-invasive methods would be appropriate if conservative management is planned.

Magnetic Resonance Imaging (MRI) using body coil and endorectal surface-coil has become the excellent mode of demonstrating cystic lesions of pelvic urogenital system and ectopic ureter. Seminal vesicle cysts have characteristic increased signal intensity on T1 and T2 weighted images due

to presence of old haemorrhage and high concentration of protein in the fluid. MRI provides full anatomic definition and has same diagnostic significance as invasive vasovesiculography procedure. MRI should be reserved for more complex situations and pre-surgical intervention.

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