Waves

WAVES: THE OFFICIAL PERIODICAL OF CALCUTTA ACADEMY OF RADIOLOGY
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INSIDE THIS ISSUE

Waves : The official name of this periodical.

Dear friends, colleagues, juniors & seniors; we are happy to publish 19th. Edition of CAR periodical.

In medical imaging, we use various types of waves such as electromagnetic waves (X-rays, gamma rays), sound waves (Ultrasound), and radio waves (MRI) to create images of internal organs and tissues in the body. So, our whole Radiology is basically dependent on some sort of wave to create images. So, we have aptly named our periodical as **WAVES.** I hope you will also like the official name of our periodical.

We are planning to publish Waves in a professional manner and we would like to involve each and every fellow Radiologist to make it more informative and educative, so that it helps Residents as well as practicing Radiologists. We will look forward to every Radiologist to submit their articles to our periodical.

We all know the uses of different waves in medical imaging. In spite of that a short recap is presented herewith.

Ultrasound waves are sound waves with frequencies higher than 20 kHz, which are beyond the range of human hearing. Ultrasound waves can penetrate soft tissues and reflect off boundaries between different types of tissues or organs. By measuring the time and intensity of the reflected waves, an image of the internal structures of the body is created.

X-ray waves are electromagnetic waves with very short wavelengths and high frequencies. X-ray waves can pass through most materials, but they are absorbed or scattered by dense materials, such as bones or metal. By placing a detector behind the body part that is being examined, an X-ray image can be obtained.

MRI waves are radio waves with frequencies ranging from 3 kHz to 300 GHz. MRI waves can interact with hydrogen atoms in water molecules. By applying a strong magnetic field to align the nuclei in a certain direction, and then applying a radio wave pulse to change their alignment, an MRI machine can measure the time and frequency of the signals emitted by the nuclei when they return to their original alignment. By varying the strength and direction of the magnetic field and the radio wave pulse, an MRI machine can create detailed images of different slices of the body.

This issue would not have been possible without the help of Dr. Bhavin Jankharia, who has provided cases for all the 19 issues of this periodical. We are indebted to him.

Joint Editors: Dr. Viral Parekh, Dr. Bijon Kundu and Dr. Anup Sadhu

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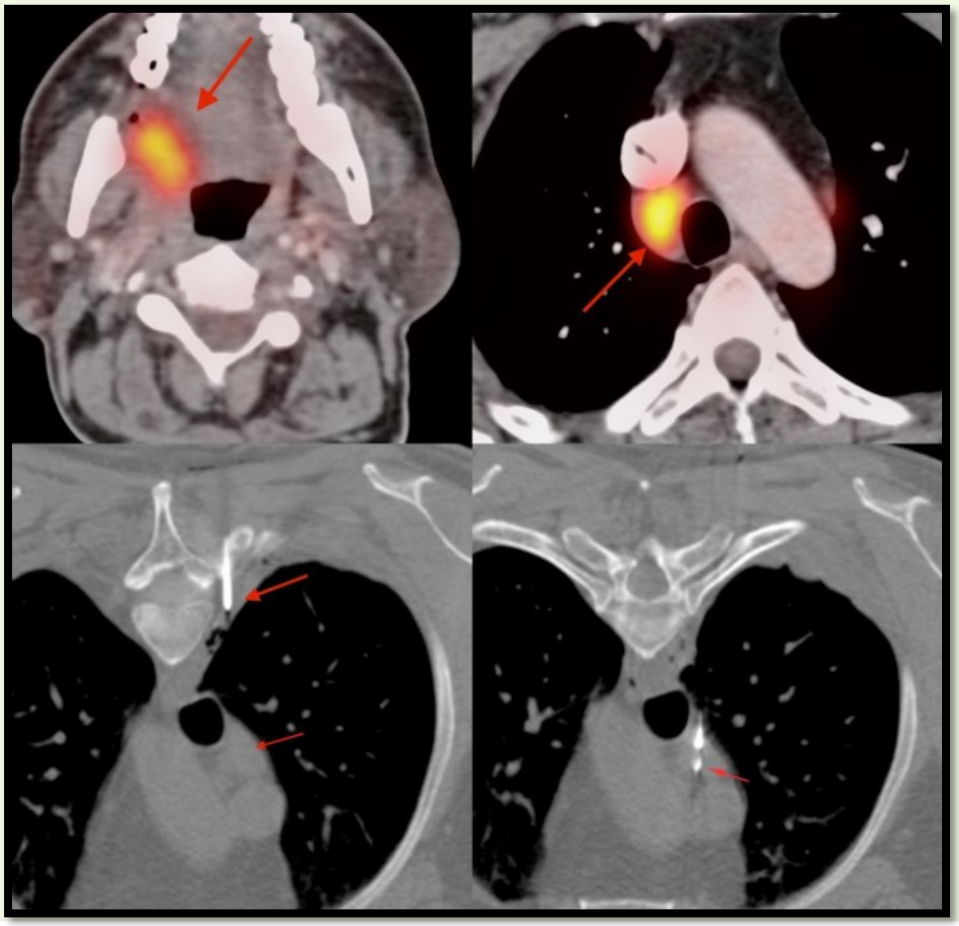
Dr. Bhavin Jankharia needs no introduction to the Radiology fraternity. As you all know he is a renowned Radiologist and academician and has contributed immensely in propagating Radiology education. Presently, he is a Consultant Radiologist at Picture This by Jankharia. He is also a Trustee of Radiology Education Foundation. He has consented to share some of his work with us, which will help all the Residents as well as practicing Radiologists. Here is some information about him in brief.

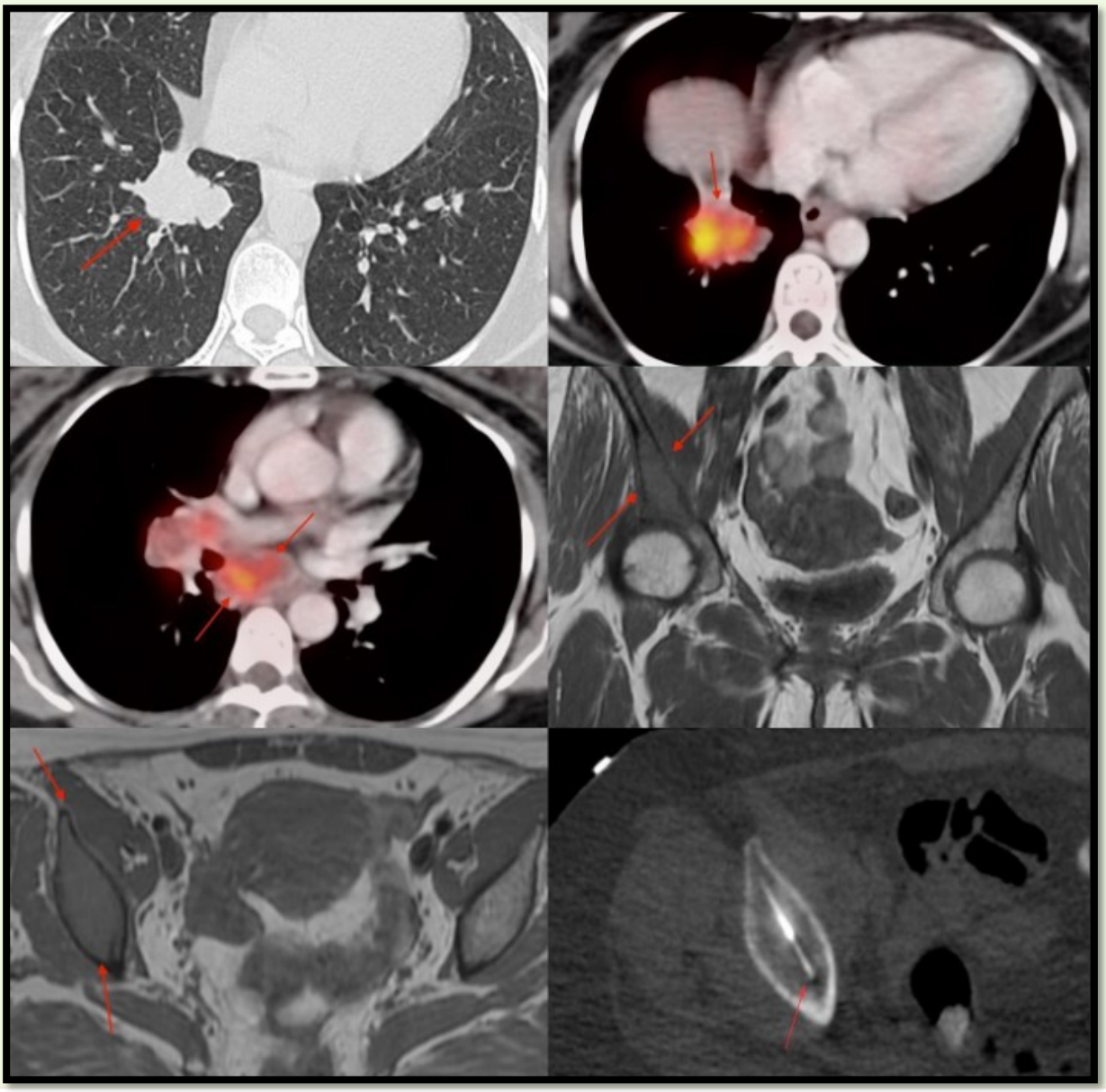
- He has written 5 books, 35 chapters, 57 articles (PubMed listed)
- Presented 32 posters
- More than 1500 invited lectures over 27 years
- Editor-in-Chief, Indian Journal of Radiology & Imaging (2007-2012)
- Latest Book (2019): Computed Tomography of Interstitial Lung Diseases
- Hon. Visiting Consultant – Radiology – Tata Medical Centre, Kolkata

Case I - The Reason We Biopsy - When Carcinoma and Tuberculosis Coexist.



This is a 50-years old man with carcinoma tongue.
This PET scan showed improvement of the lesion with chemotherapy with no change in the mediastinal node, which had been assumed to be metastatic. The absence of change suggested that this may be an unrelated etiology.
A biopsy of the right paratracheal node was performed in the prone position. An extrapleural approach was tried, but didn't work, so a trans-pulmonary approach was used with a 20G coaxial biopsy gun.
The diagnosis was MTB positive tuberculosis. The PCR was negative, but the histopathology and 6-weeks culture were positive for the diagnosis.In this case, this now became non-metastatic local disease, completely changing the management and prognosis.

Case II - What Does One Biopsy - Bone or Lung ?

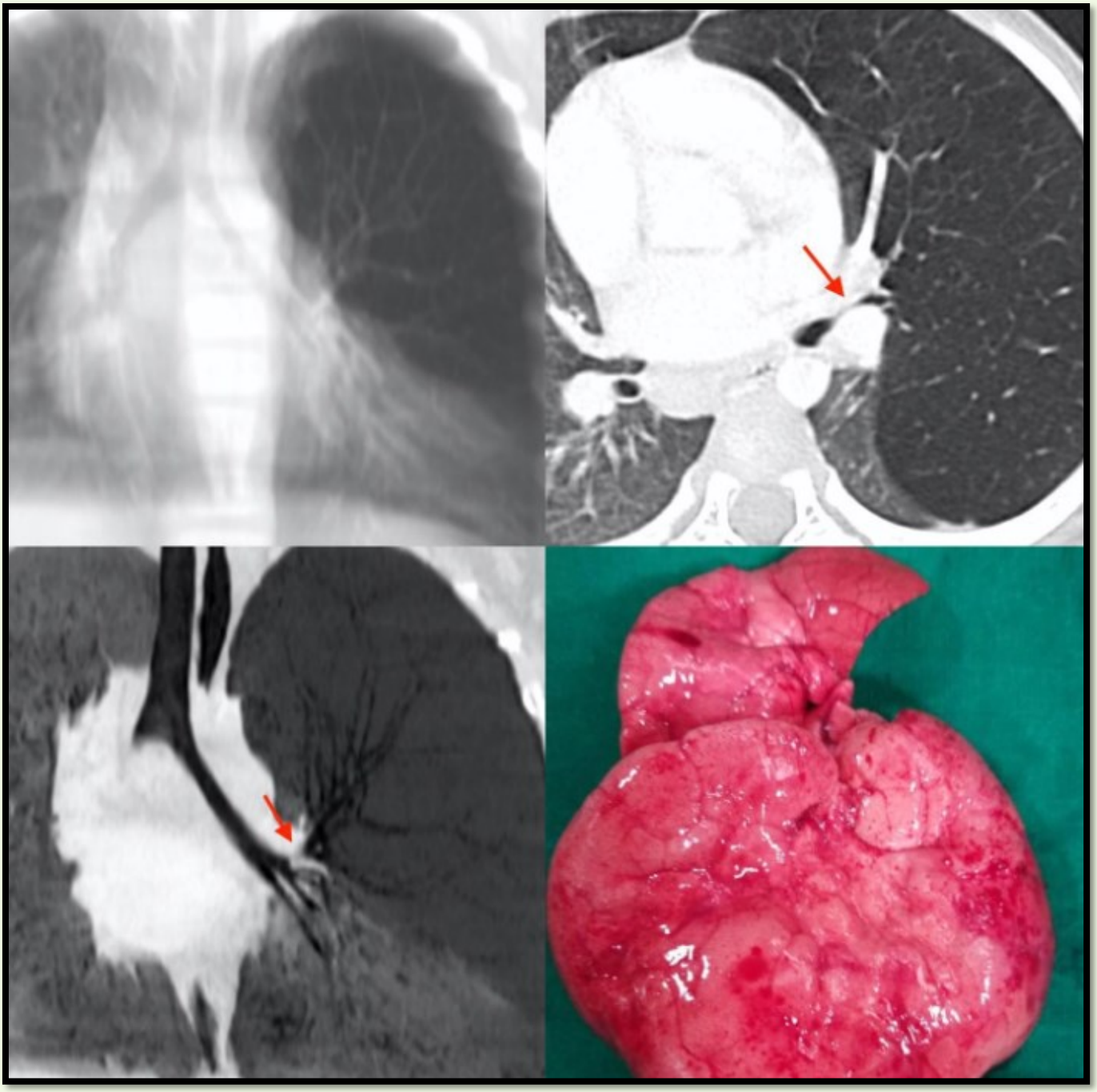


This 46 years old lady had an active lung mass, with active, necrotic subcarinal nodes and a lesion in the right iliac bone. Her initial presentation was pain in the right hip region and after the MRI a PET was done to look for other lesions in the body and this is what we found. There are some oncologists who only want material from the primary site of the malignant neoplasm. There are others who are fine with material from a metastatic site. In this case, assuming this to be metastatic stage IV lung cancer, we would need material for EGFR, ALK, ROS1, PDL1, etc as well and in this patient, it would be easy to get a lot of material from the bone lesion without any complication.

I did a bone biopsy through the antero-inferior iliac spine with an 18G coaxial biopsy gun. This is a simple biopsy to do and she had adenocarcinoma metastasis from carcinoma lung and the material was enough for EGFR and ALK, which is what was asked for at that time. However, we would have to do what is asked for. If the physician or oncologist insisted on a lung lesion biopsy then that is what I would have done. But if we assume that doing the simplest biopsy where the chance of a complication is the lowest and the material obtained is good enough, is also an acceptable dictum, then the iliac bone biopsy was fine as well.

Dr. Bhavin Jankharia, MD

Case III - An Unusual Fibular Fibro-Osseous Lesion



This 3 years old boy came with sudden breathlessness. A simulated radiograph from the CT scan images shows increased lucency of the left upper and mid-zones, which on the axial CT scan is seen a left upper lobe overinflation due to a high-grade stenosis of the left upper lobe bronchus (arrow). The minIP image shows this well (arrow). The operated overinflated lung is seen in the last panel.

Dr. Bhavin Jankharia, MD

PEDIATRIC RENAL TUMOURS

Approach to the pediatric tumors

- Ultrasound is a standard first-line modality; CT and MRI often are used to delineate extent of disease.
- Different tumor types share radiographic features; histologic diagnosis is the gold standard
- Trends based on age, distribution of metastases, and appearance aid radiographic differentiation.
- Categorical approaches include age (infancy vs childhood), severity (benign vs malignant), and structure (solid vs cystic).

Distribution by age

Infancy

- Nephroblastomatosis
- Mesoblasticnephroma
- Wilms (less frequent)
- Rhabdoid
- Ossifying renal tumor of infancy

Childhood

- Wilms tumor
- Clear cell sarcoma
- Renal cell carcinoma
- Multilocular cystic nephroma
- Angiomyolipoma
- Lymphoma (NHL)
- Renal medullary carcinoma
- Rhabdomyosarcoma (pelvis)

Distribution by severity

Benign

- Nephroblastomatosis
- Mesoblasticnephroma
- Multilocular cystic nephroma
- Angiomyolipoma
- Ossifying renal tumor of infancy

Malignant

- Wilms'
- Clear cell sarcoma
- Renal cell carcinoma
- Rhabdoid
- Lymphoma
- Renal medullary carcinoma
- Rhabdomyosarcoma

Dr. Bijon Kundu & Dr. Kanchanmani

Renal cystic disease in children

Polycystic disease

- Infantile (Potter type I, autosomal recessive)
- Juvenile (same as infantile)
- Adult (Potter type III, autosomal dominant)

Multicystic disease

• Multicystic-dysplastic kidney (Potter type II)

Multilocular cyst

- benign cystic nephroblastoma,
- cystic Wilm'stumor,
- polycycticnephroma)

Medullary cysts

- Medullary sponge kidney
- Medullary cystic disease; uremic (juvenile nephrophthisis)

Solitary cyst

- Simple cyst
- Hydrocalycosis,
- pelvicalyceal cyst,
- calyceal diverticulum

Miscellaneous cysts (cortical)

- Conradi's Disease, Zellweger Syndrome, trisomies, Turner's Syndrome
- Tuberous sclerosis
- Cortical with obstructive hydronephrosis (Potter type IV)
- Cortical without obstructive hydronephrosis
- Autosomal Recessive Polycystic Renal Disease (infantile)

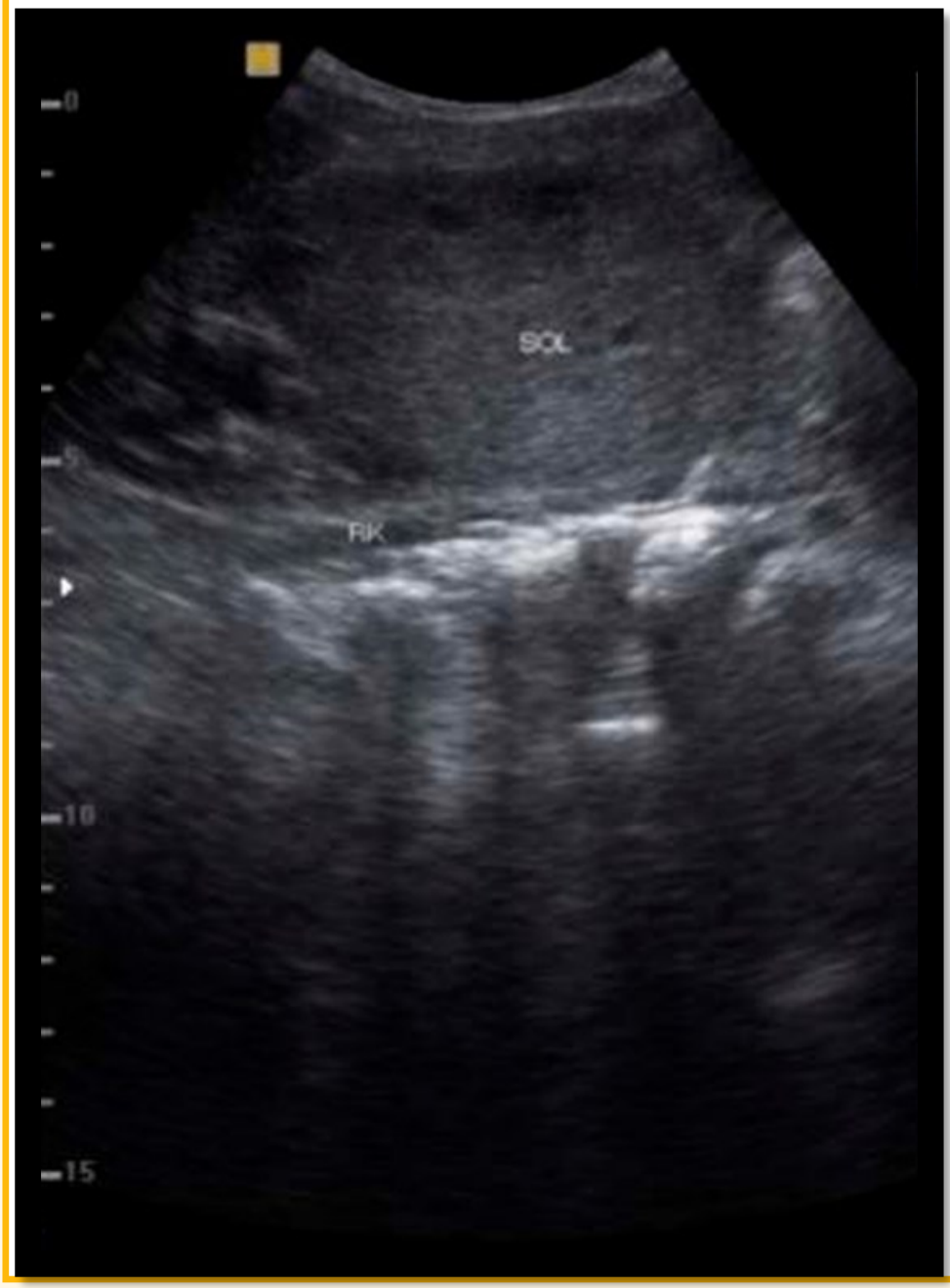
WILM'S TUMOR

Epidemiology:

It accounts for 90% of pediatric renal tumors. Peak incidence is at 3 years (<1-10). Most often these are sporadic and unilateral,1% are familial (16% of familial cases are bilateral) and10% bilateral (2/3 synchronous, 1/3 metachronous). There is an increased risk for Wilms' Tumor with persistence of embryonic renal tissue (nephrogenic rests = nephroblastomas).

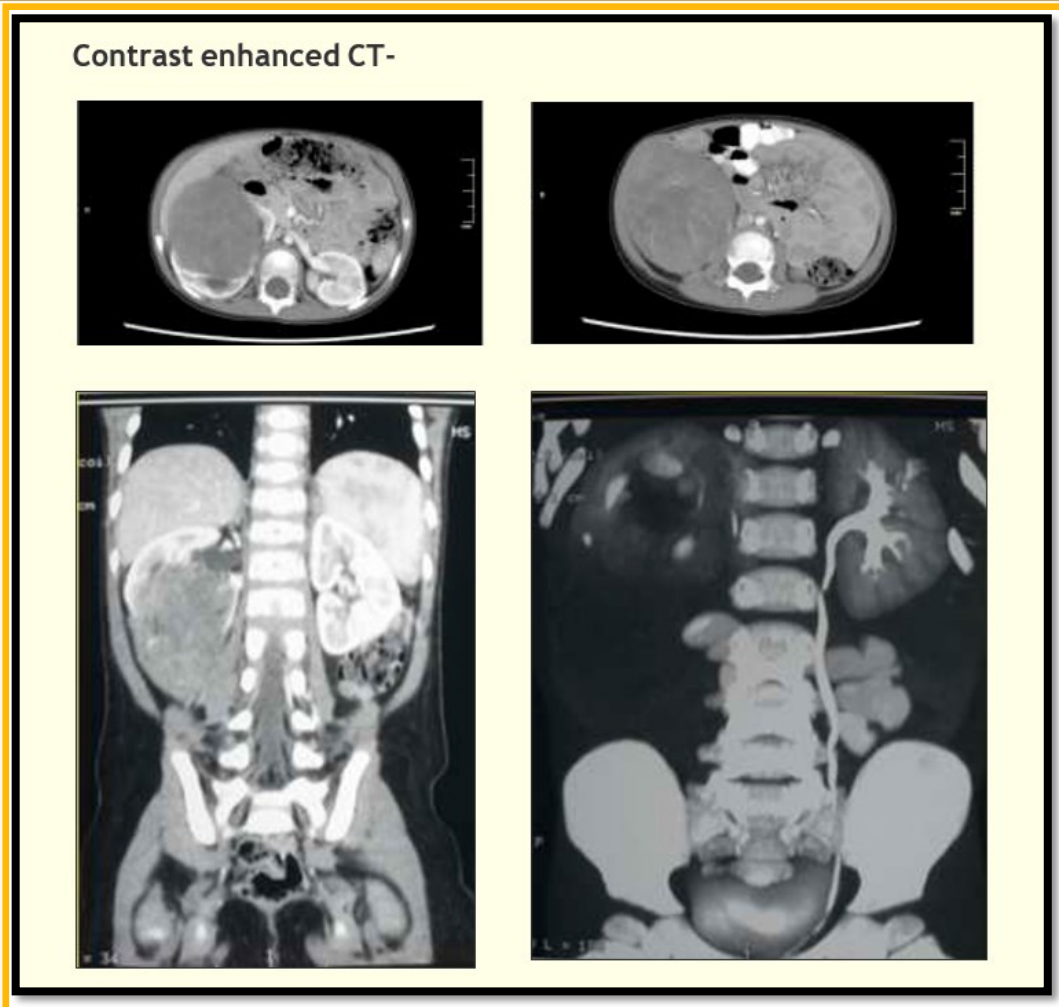
Features:

Ultrasound- is useful for initial diagnosis and in obtaining important information such as extension into inferior vena cava and tumor in another kidney. The tumor is usually solid and echogenic tumor necrosis and cyst like areas may be seen. Focal hydronephrosis can also be seen. The 'Claw sign' i.e., normal renal tissue cupping the tumor helps in identifying the renal origin. In right upper quadrant, differentiation from liver and kidney origin can be done by 'sliding sign'in which the uninvolved organ is seen to slide over the tumor.



USG demonstrates exophytic tumor of lower pole.

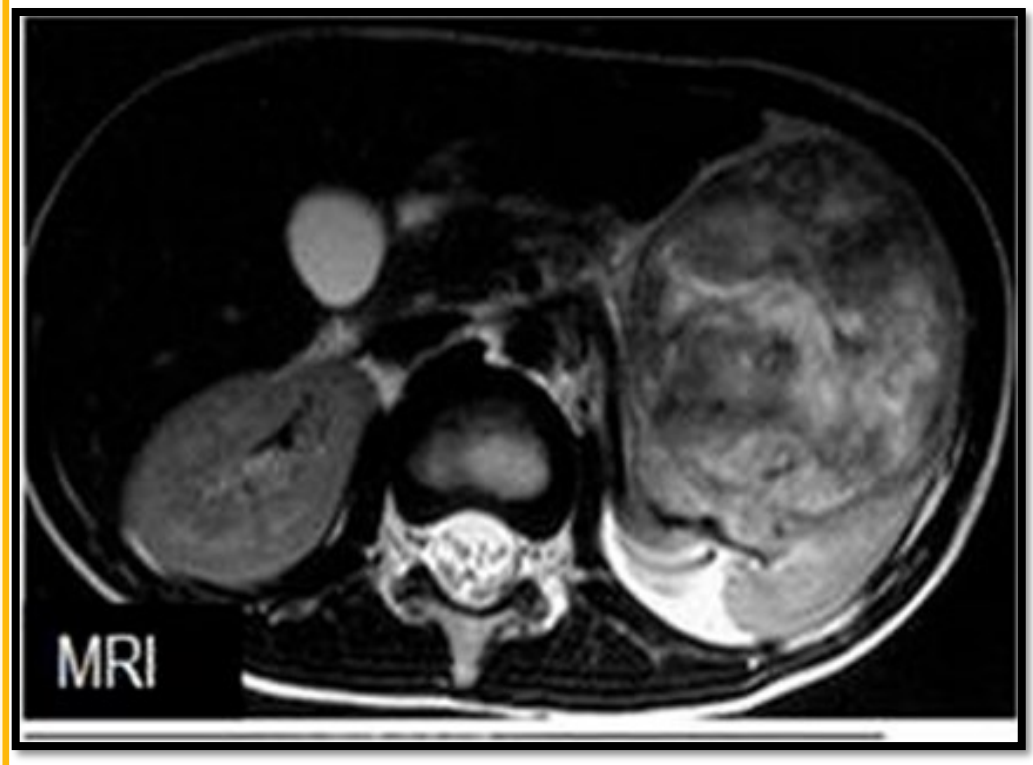
Dr. Bijon Kundu & Dr. Kanchanmani



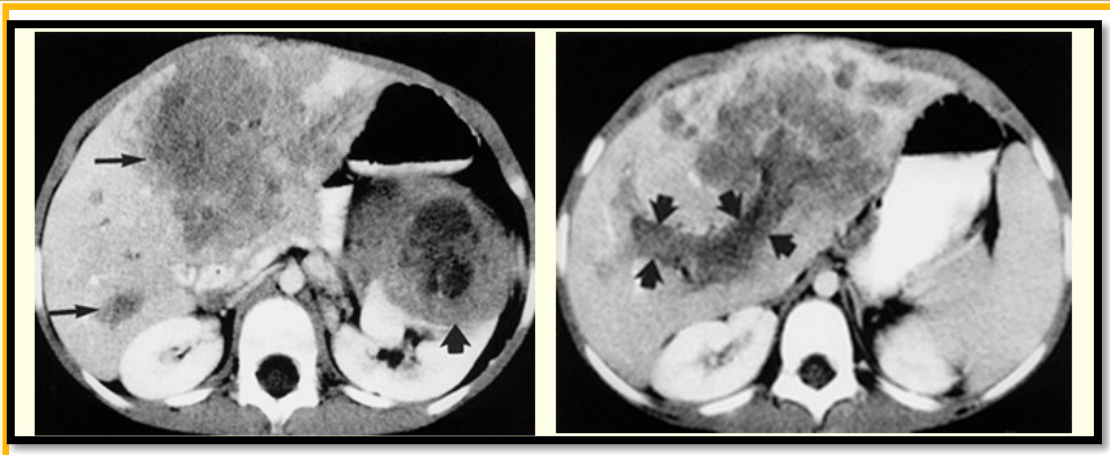
Well circumscribed, lobulated, heterogeneously enhancing exophytic mass extending from inferior pole of right kidney.

MRI

The tumor produces medium signal on T1W images. On T2W images signal increases markedly. Intracardiac and intracaval thrombosis can be identified with ultrasound, CT, or MRI, but MRI may be best for mapping extensive thrombi.



Wilms' is variably hyperintense on T2 images.



Wilms' in L kidney of 4-year-old with hepatic mets Tumor thrombus of portal vein in same patient.

With ultrasound difficult to differentiate simple compression of the inferior vena cava from true intraluminal extension, contrast enhanced CT or MRI is more useful in this regard. The metastases to bones are best evaluated with nuclear scintigraphy and plain film radiography.

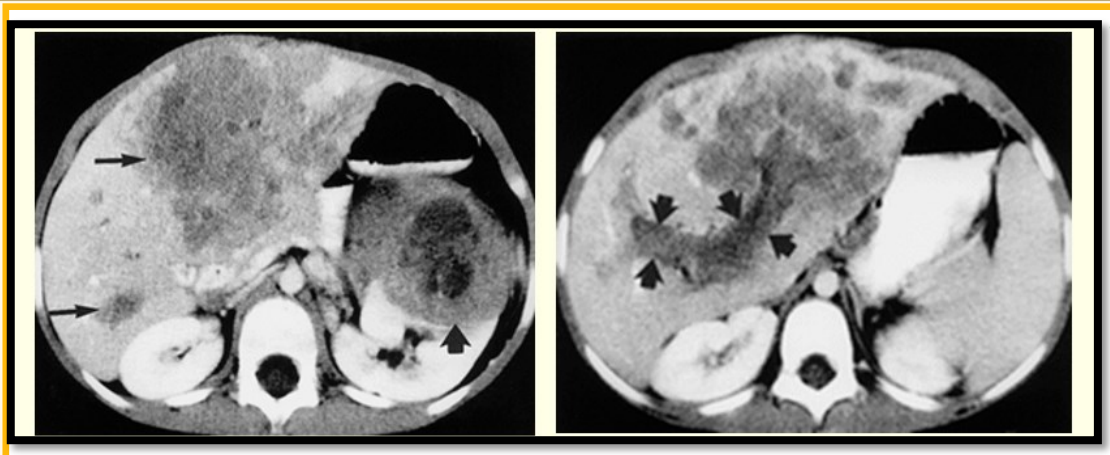
Associations of Wilm'stumor

1. Molecular Associations-2 known tumor suppressor genes on chromosome 11
2. WT-1-assoc w/ WAGR (Wilms, aniridia, GU anomalies, retardation)
3. WT-2-loss of heterozygosity associated with Beckwith-Wiedemann
4. Associated conditions:
5. Beckwith-Wiedemann (omphalocele, gigantism, macroglossia)
6. Hemihypertrophy,
7. Denys-Drash (pseudohermaphroditism, glomerulonephritis)
8. Sporadic aniridia (1/3 develop Wilms')
9. Sotos (cerebral gigantism),
10. Bloom Syndrome (facial telangiectasias, GI tumors)
11. Perlman syndrome (visceromegaly, gigantism, cryptorchidism)
12.

Recommended US screening every 3-6 months for first 7 years; however, of uncertain benefit in overall survival. 15% of Wilm'stumor patients have other genitourinary anomalies (cryptorchidism, horseshoe kidney).

WILMS' TUMOR STAGING

1. Stage I: Confined to kidney without capsular or IVC involvement; completely resectable with capsule intact.
2. Stage II: Tumor extends beyond renal capsule or infiltrates vessels, resected tumor with confined local spillage
3. Stage III: Residual tumor confined to abdomen, including positive abdominal nodes, positive surgical margins, diffuse peritoneal contamination, or residual nonresected tumor
4. Stage IV: Hematogenous spread (lungs, nodes, liver)
5. Stage V: Bilateral disease.



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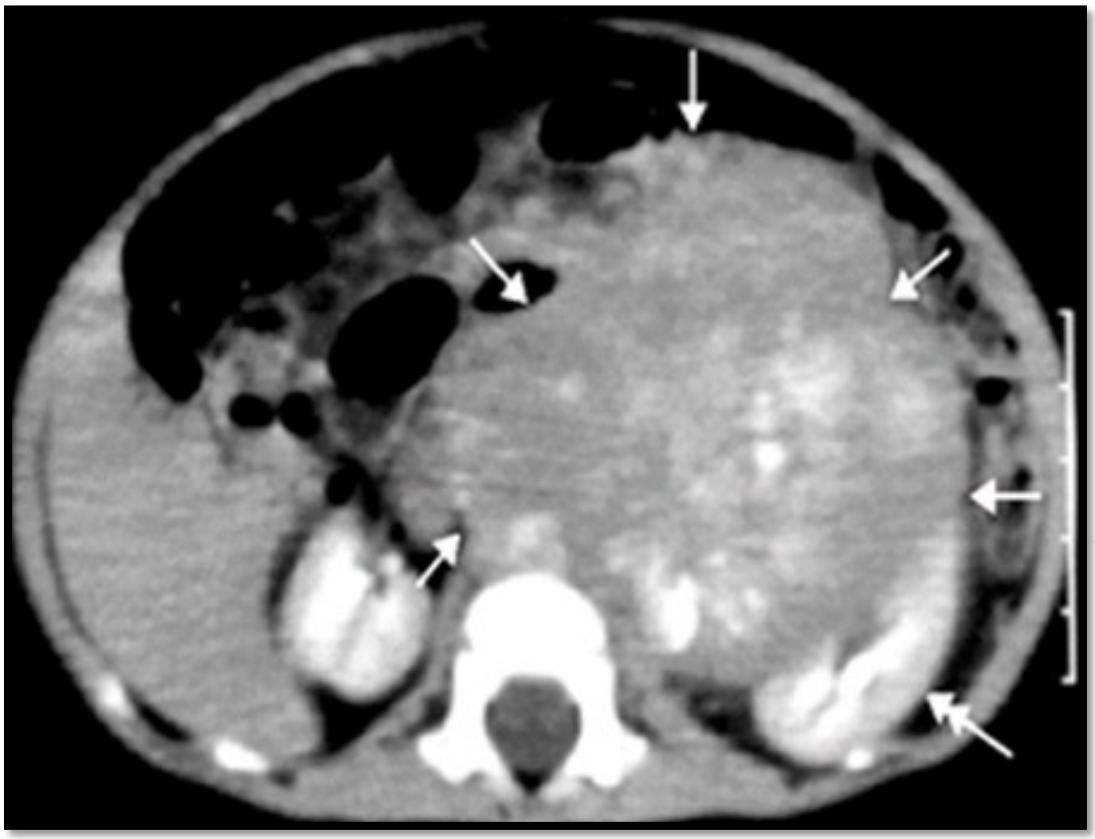
Differences from neuroblastoma

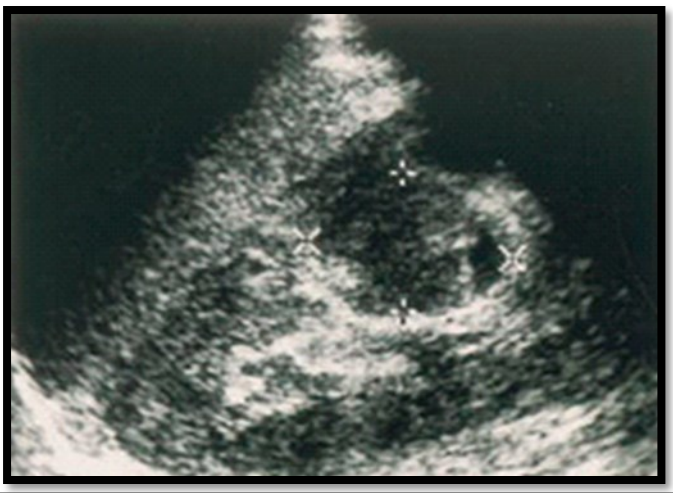
Neuroblastoma arises from anywhere along the sympathetic chain or adrenal medulla. It is the most common cancer of infancy and most common extracranial solid tumor of childhood (90% dx <5 years; median age at dx 2 years); 65% are intra-abdominal and they may invade renal tissue. Determining adrenal vs renal origin is difficult when there is no clear plane of separation. Whereas the Wilms tumors are<10% calcified; more often a curvilinear pattern with occasional local para-aortic adenopathy (less common than with neuroblastoma) IVC invasion has high positive predictive value and mets to lungs common. Whereas neuroblastomata are often calcified, scattered patterns are found throughout the mass with large regional adenopathy. There is a high predictive value with encasement of great vessels, spinal canal invasion and paravertebral mass. There is moderate predictive value with extension across midline, displacement of great vessels. Mets to liver and bone are common.



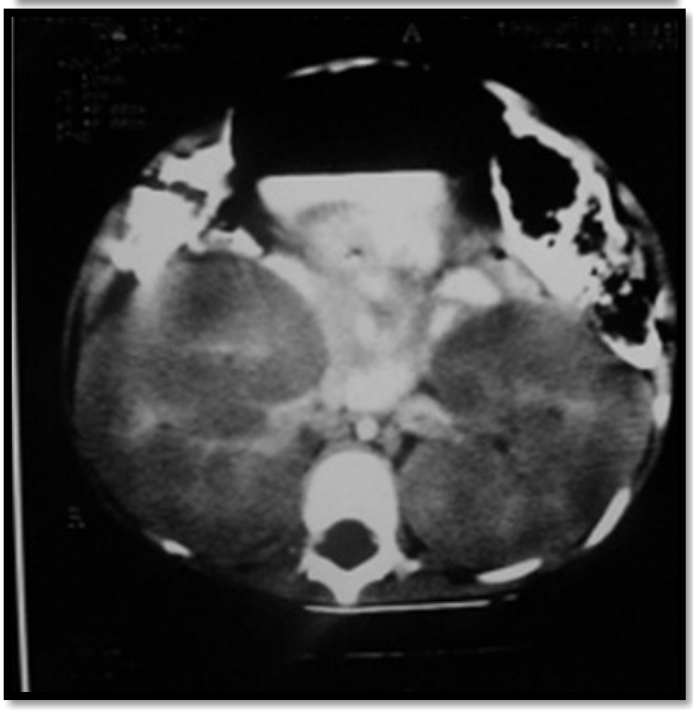
Contrast enhanced CT scan showing left sided neuroblastoma.

Nephroblastomatosis (Nodular renal blastema)

This is characterized by diffuse or multifocal kidney involvement of metanephric rests (embryonic renal tissue persisting beyond 36 weeks), homogenous subcapsularhypodense regions on contrast CT. There is an increased risk for Wilms' tumor. Present in 41% of unilateral cases of Wilm'stumor, 94% of metachronous WTand 99% of synchronus bilateral Wilm'stumors. It has similar associations as with Wilms' Tumor (e.g., Beckwith-Wiedemann). Treatment is controversial as 99% resolve spontaneously; serial screening recommended with assoc. syndrome. Ultrasound shows the kidneys afflicted with nephroblastomatosis appear large and show disorganized architecture with increased echogenicity. On CT scanning and MRI, the large kidneys, with their associated splayed and compressed calyces, also are readily identified.



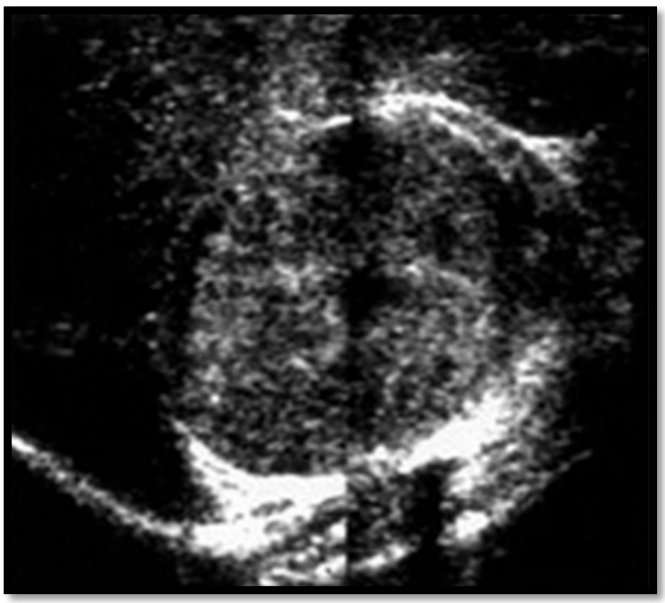
US of nephroblastomatosis.



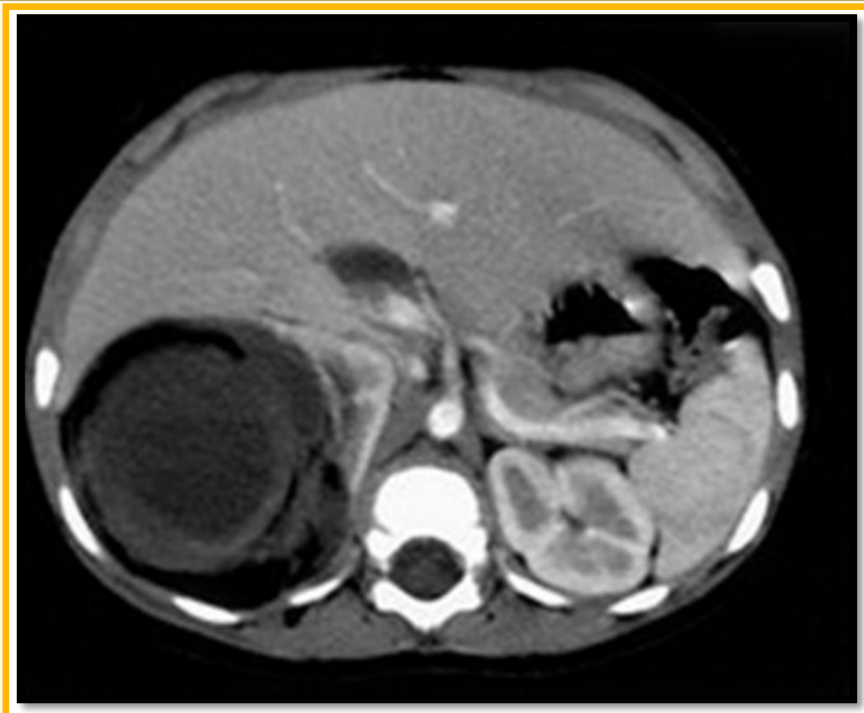
Both kidneys show diffuse metanephric rests.

Mesoblastic nephroma

Also known as Bolandes Tumor, it is the most common renal tumor of neonates. The findings on ultrasound, CT or MRI cannot differentiate it from Wilms Tumor.



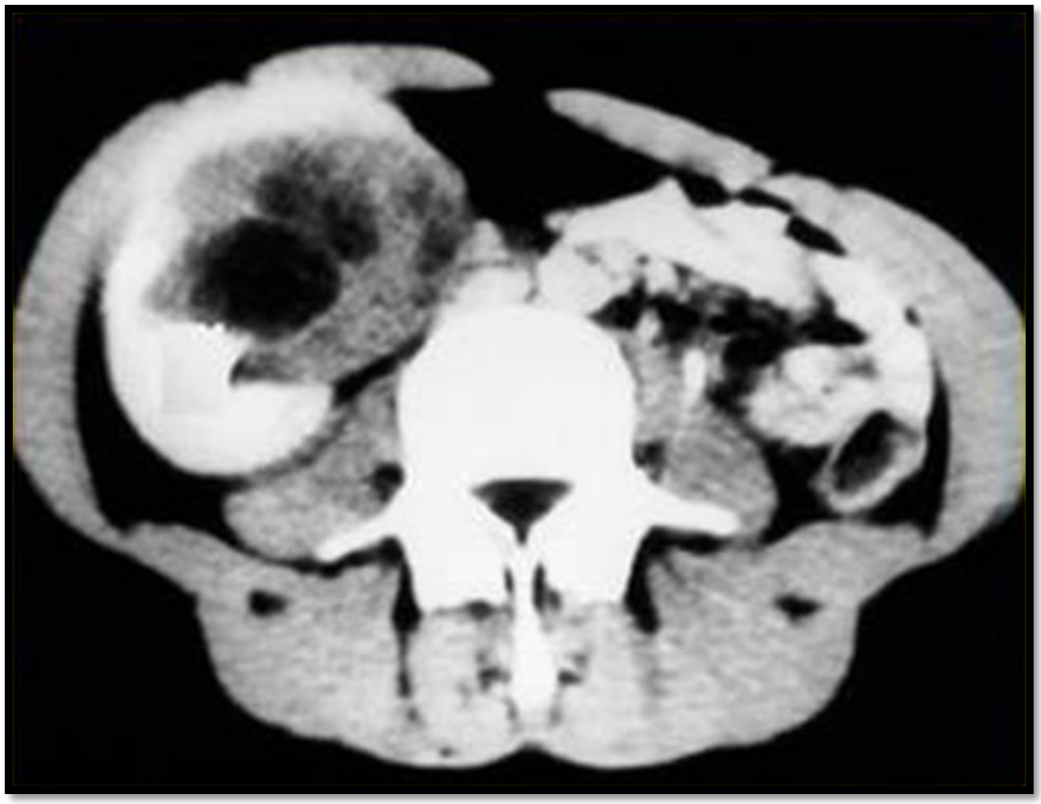
USG showing Mesoblastic nephroma Prenatally diagnosed destructive renal mass; rim of capsule-like parenchyma diagnosis made after nephrectomy



CT with contrast in same patient; rim of renal parenchyma ventromedially; well-defined mass surrounded by fat.

Has ill-defined margins and no capsule, thus needs wide surgical margins. It does not invade vascular pedicle or metastasize. Ultrasound shows large, solid mass with low echogenicity. CT scan shows soft tissue attenuation and enhances less than surrounding parenchyma after contrast.

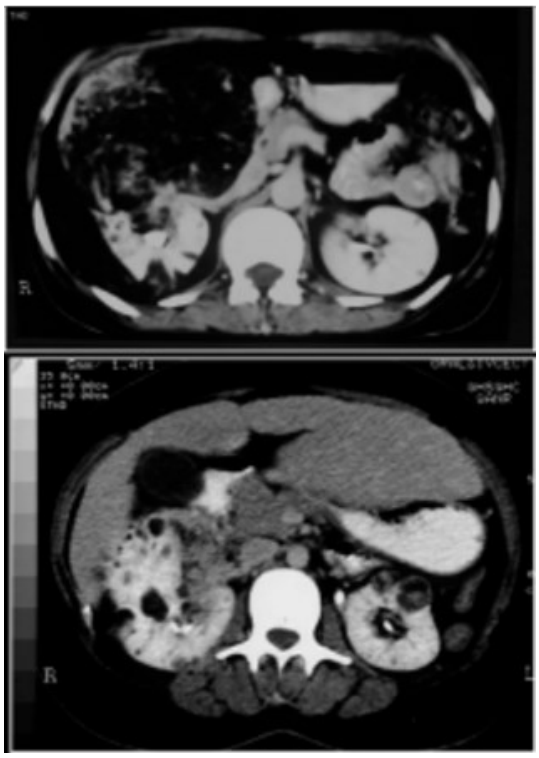
Multilocular cystic nephroma

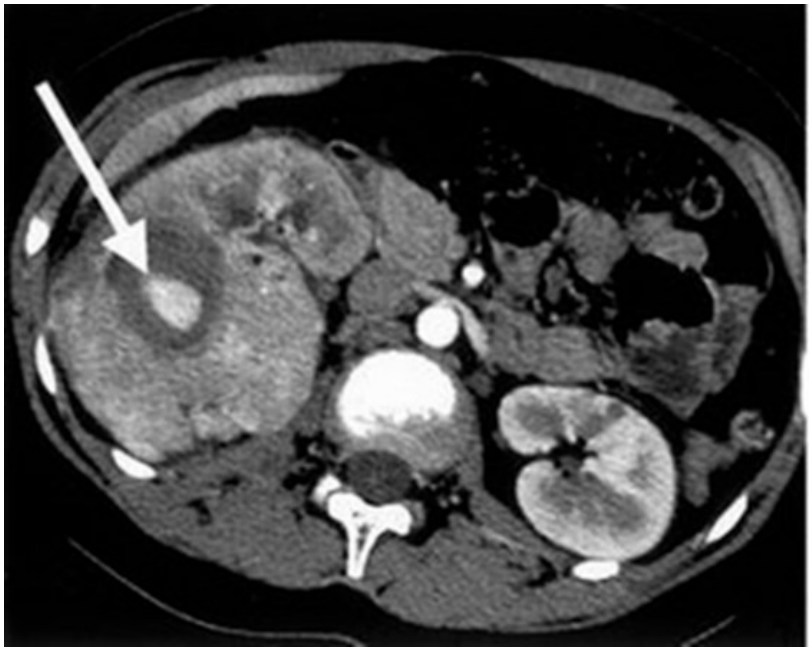


CT scan showing right sided multilocular cystic nephroma
Tumor contains cystic lesions lined by epithelial cells and fibrous septae (septae are the only solid component of tumor). Lining may contain blastema cells (cystic partially differentiated nephroblastoma), which may have malignant potential. It has bimodal distribution (boys < 4years; women 40-60 years.

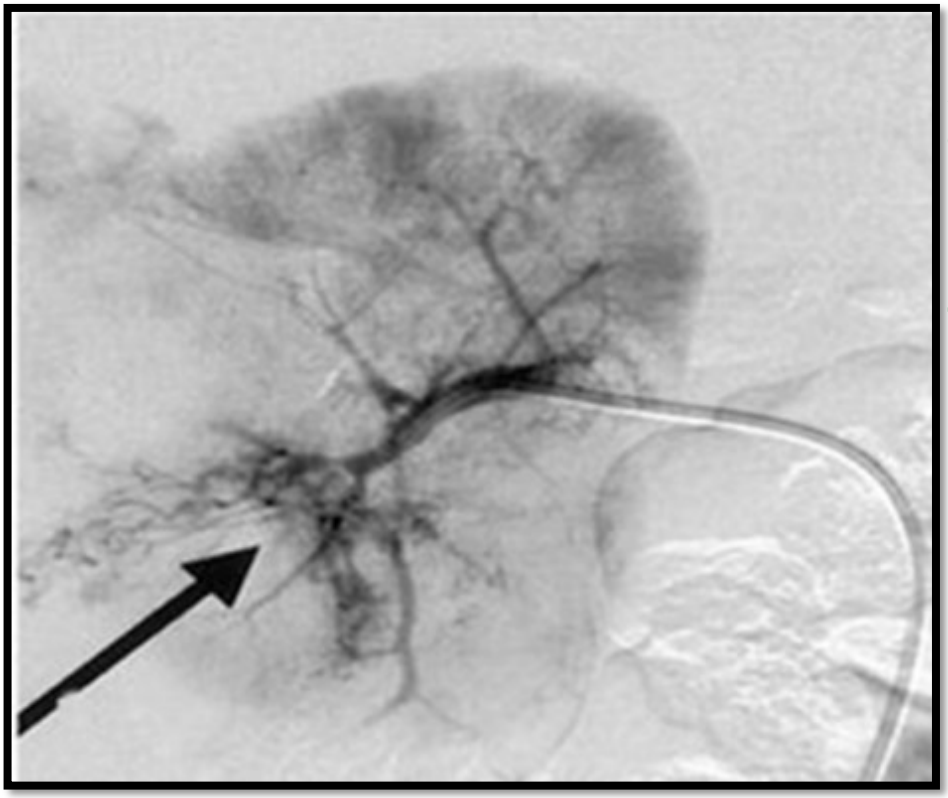
Angiomyolipoma

Rare in children, unless patient has tuberous sclerosis.80% of tuberous sclerosis patients have renal angiomyolipomas by age 10 years. These are hamartomatous lesions comprised of fat, smooth muscle, and blood vessels. In tuberous sclerosis small, bilateral, multifocal nodules are noted, typically cortical in location. There is tendency towards aneurysm formation with spontaneous bleeding in aneurysms >4 cm. Treatment is only indicated to manage hemorrhage. Ultrasound shows highly echogenic, non-shadowing foci correlating with fat content. CT shows SOL with fat content.





Multiple angiomyolipomas Acute hemorrhage of angiomyolipoma on contrast CT.

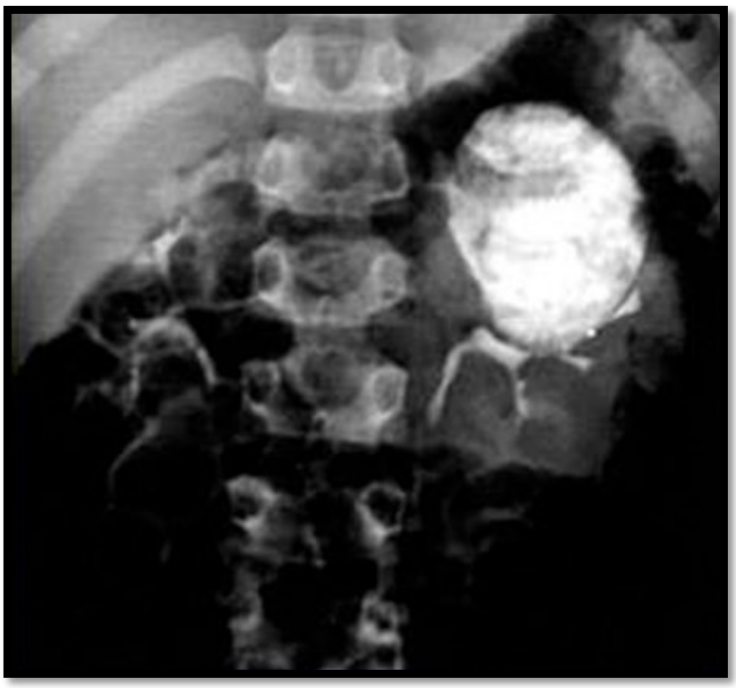


Selective digital subtraction angiography; increased irregular vascularity in area of angiomyolipoma (arrow); leaked contrast defines area of hemorrhage in pole.

Dr. Bijon Kundu & Dr. Kanchanmani

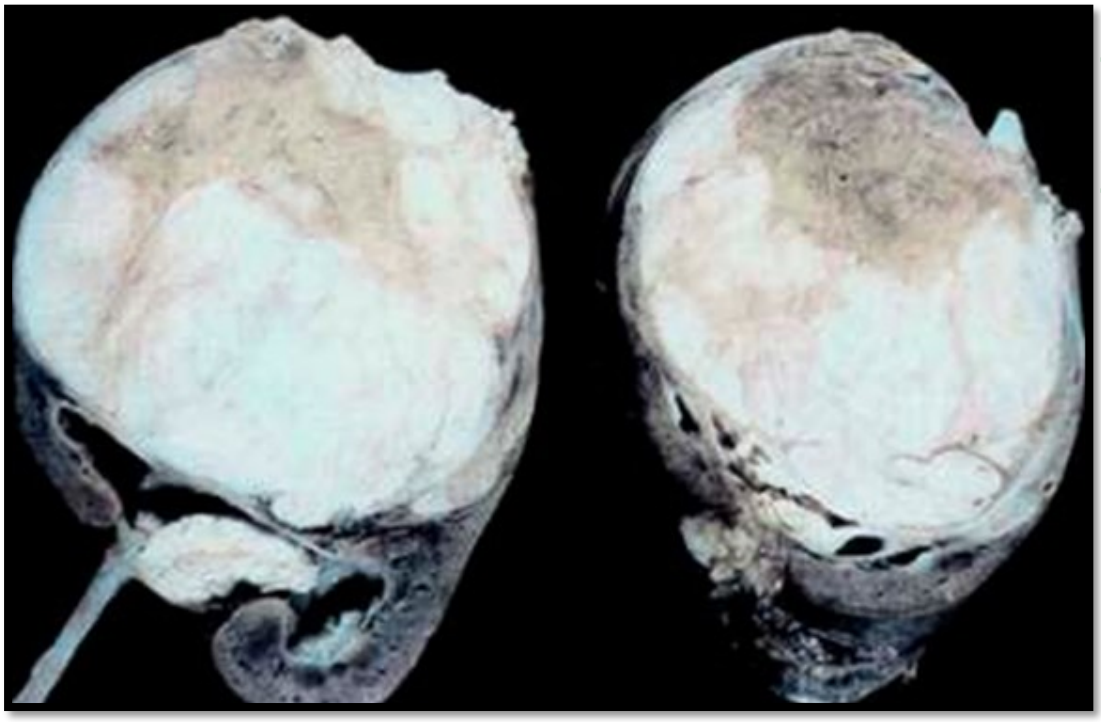
Ossifying renal tumor of infancy:

It is a rare tumor, diagnosed in 1st year with calcified renal hamartomas. Soft tissue mass arising from medulla, occupies part of collecting duct. It can cause obstruction and hematuria.



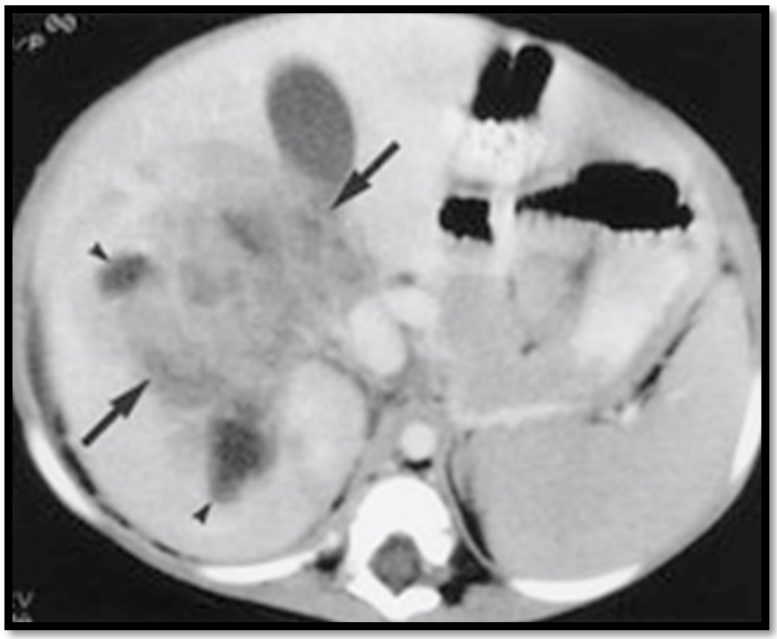
Malignant renal neoplasms

- **Wilms'**
- **Clear cell sarcoma**
- **Renal cell carcinoma**
- **Rhabdoid**
- **Lymphoma**
- **Renal medullary carcinoma**
- **Rhabdomyosarcoma.**



Gross examination of Wilms' tumor exhibiting extension into the renal pelvis.

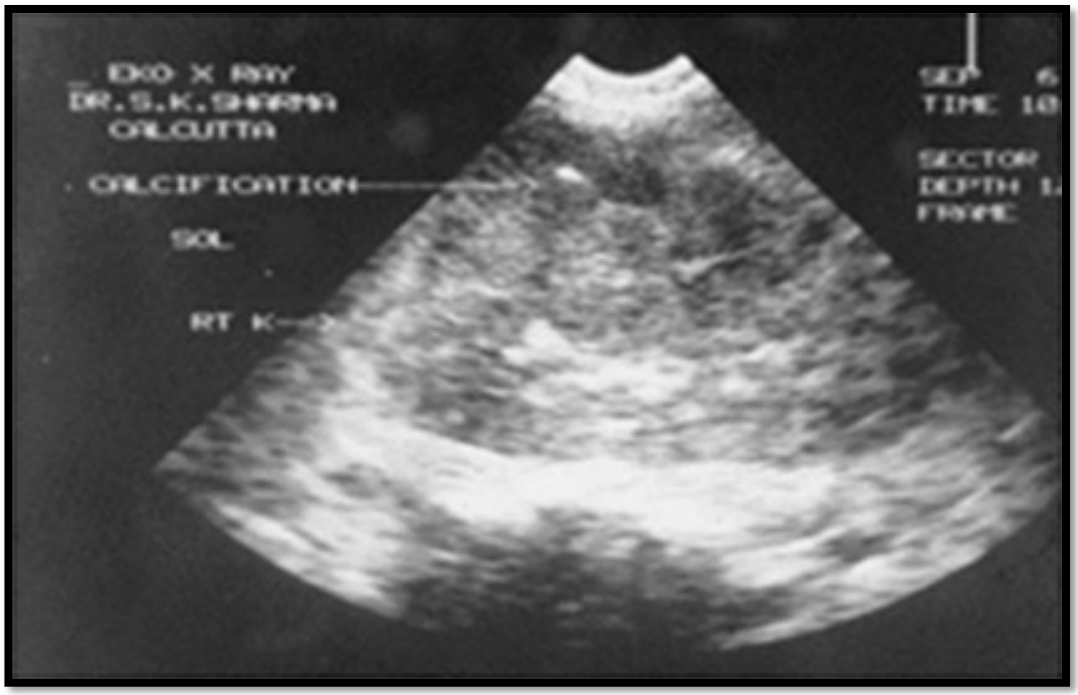
Clear cell sarcoma



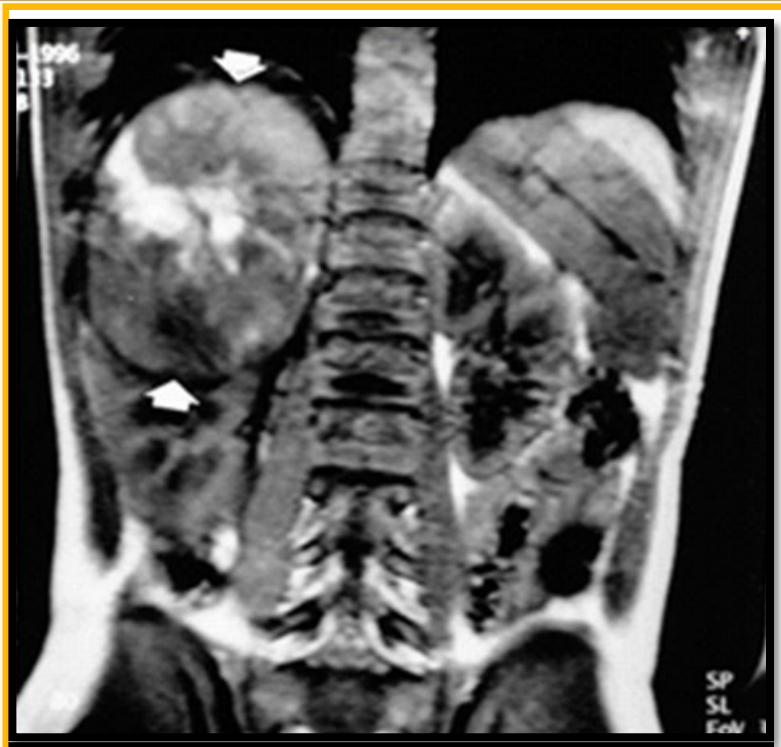
CT in 13-month-old with right renal mass showing extensive central necrosis (arrow) and hydronephrosis of adjacent calices (arrowheads).

These constitute 4% of pediatric renal neoplasms. Age distribution is similar to Wilms' tumor (peak 3-5 years). There are no features that are radiologically distinct from Wilms tumor (solid mass compressing, distorting surrounding parenchyma with and without cystic areas and necrosis.)20% have bony metastases (bone scan recommended). It can also metastasize to lung, brain, liver.

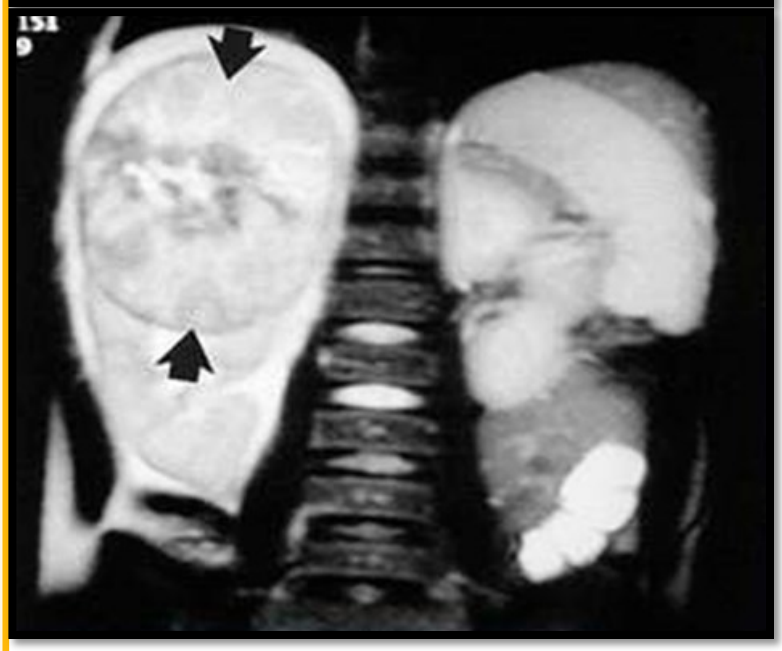
Renal cell carcinoma



USG showing renal cell carcinoma with internal calcifications.



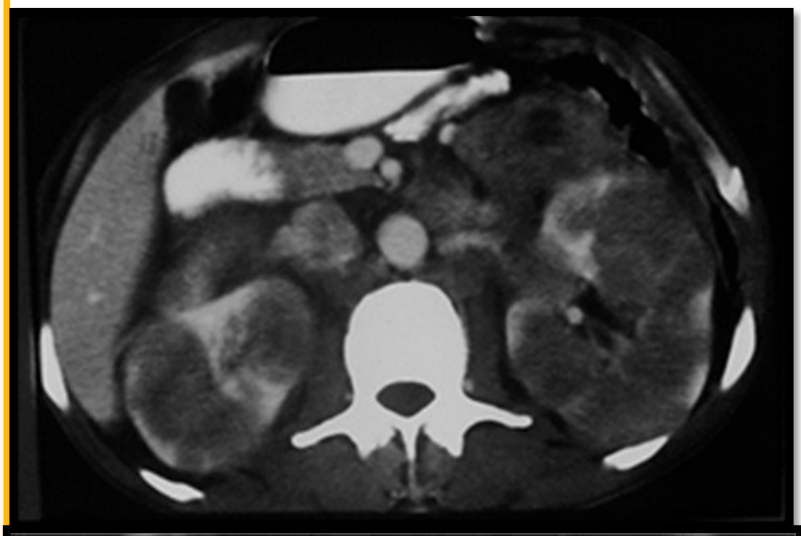
Coronal T1 MRI of renal cell carcinoma.



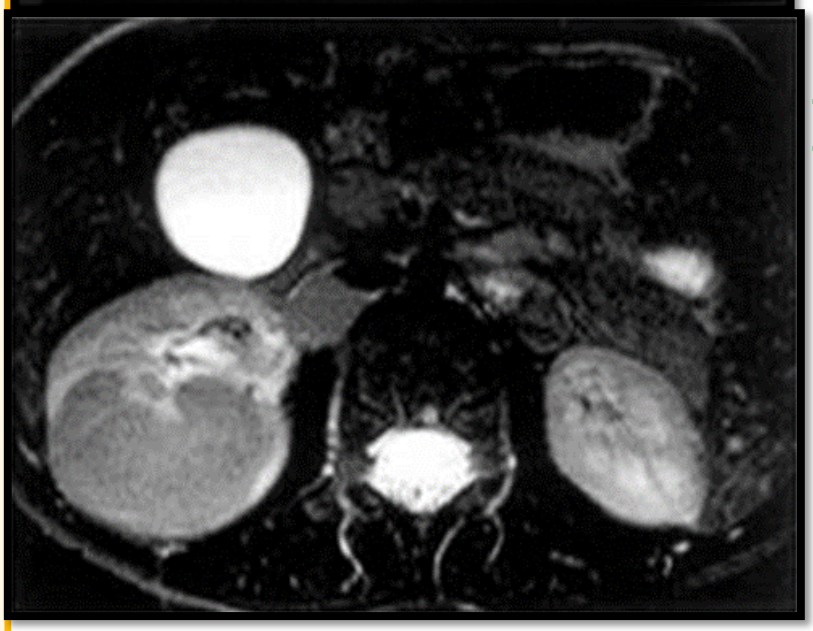
Gadolinium enhanced MRI.

The mean age in children is 9 years. These constitute about 1% of pediatric renal tumors. Wilms tumor is 30 times more frequent in children overall; however, Wilms tumor incidence is equal to RCC in 2nd decade. These are more frequent with Von Hippel-Lindau disease. These are generally smaller than Wilms tumor at presentation, otherwise radiographically indistinct from Wilms tumor. Approximately 25% have internal calcifications (<10% in Wilms tumor). The lumbar aortic adenopathy is common.

Lymphoma



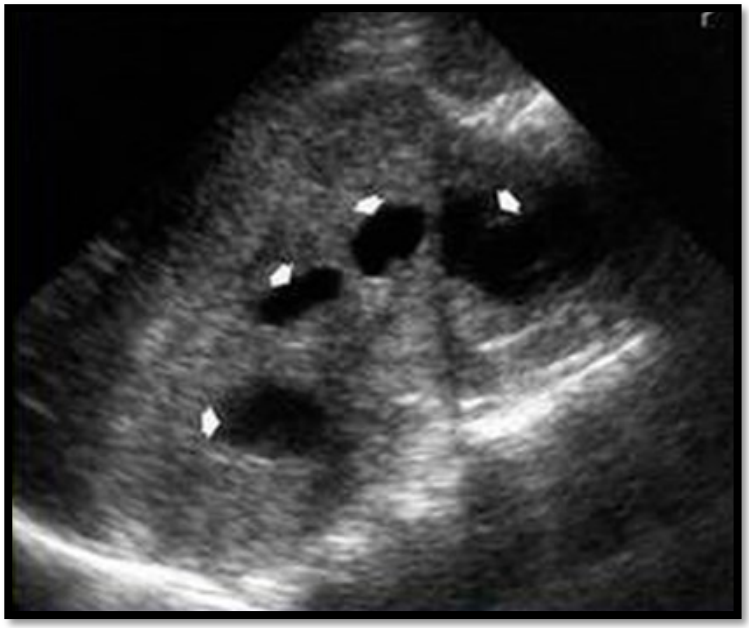
CT shows lymphomatous infiltration of both kidneys.



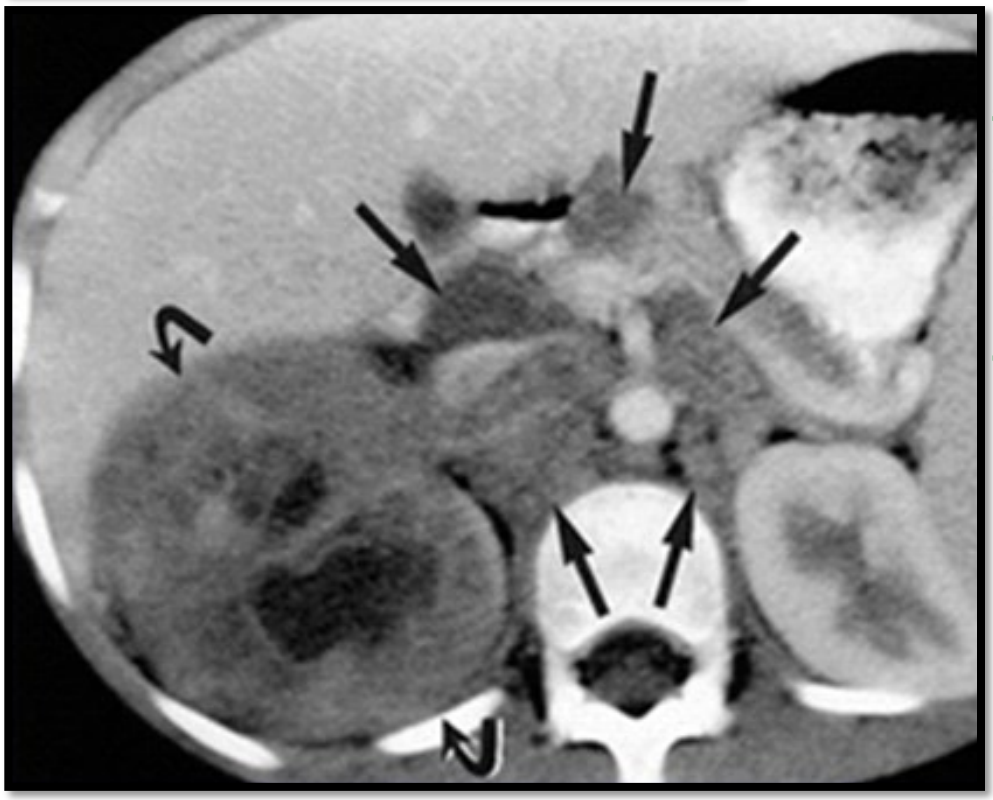
Gadolinium enhanced MRI of patient shows lymphomatous infiltration of the lower pole.

Non-Hodgkin's lymphoma (esp. Burkitt's) commonly has renal involvement, 8-12% seen on CT and 64% on autopsy. These are usually bilateral and may spread hematogenously or by direct extension. The multiple parenchymal masses/nodules distort the renal contour and displace the collecting system. There may also be invasion from retroperitoneal mass or adjacent lymph nodes. CT shows homogenous, hypodense masses on both enhanced and unenhanced images. These are multifocal, nodular and may appear like multiple renal cysts associated with diffuse general renal enlargement. Associated features are splenomegaly, abdominal adenopathy, elevated LDH.

Renal medullary carcinoma:



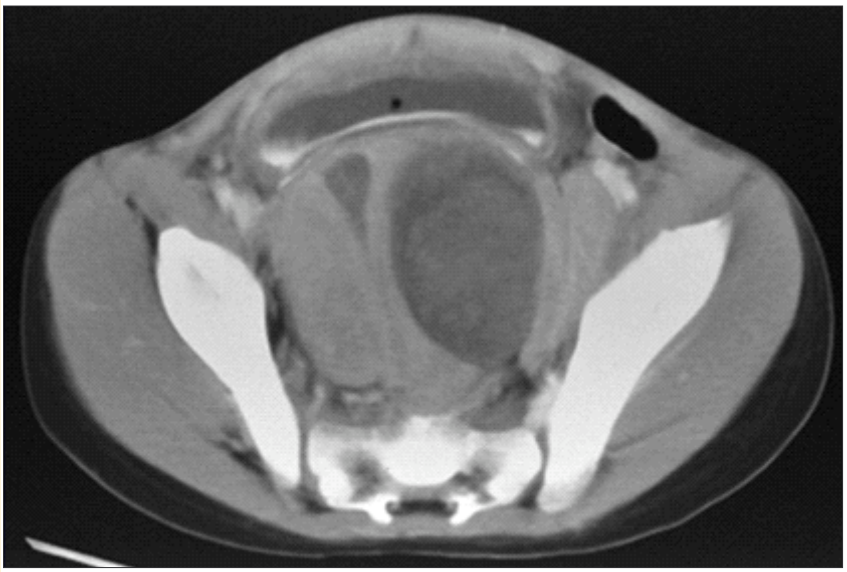
US demonstrating lack of corticomedullary differentiation; hydronephrosis in calices.



CT with contrast shows heterogeneous, infiltrating mass (curved areas); hypodense areas reflecting hydronephrosis; extensive paravertebral and para-aortic adenopathy (straight arrows).

Renal medullary carcinoma is an aggressive tumor. It quickly fills renal pelvis and invades vessels, lymphatics with an unfavorable prognosis. It presents as centrally located, infiltrative lesion invading renal sinus with peripheral caliectasis and reniform enlargement. Adjacent adenopathy is common.

Rhabdomyosarcoma



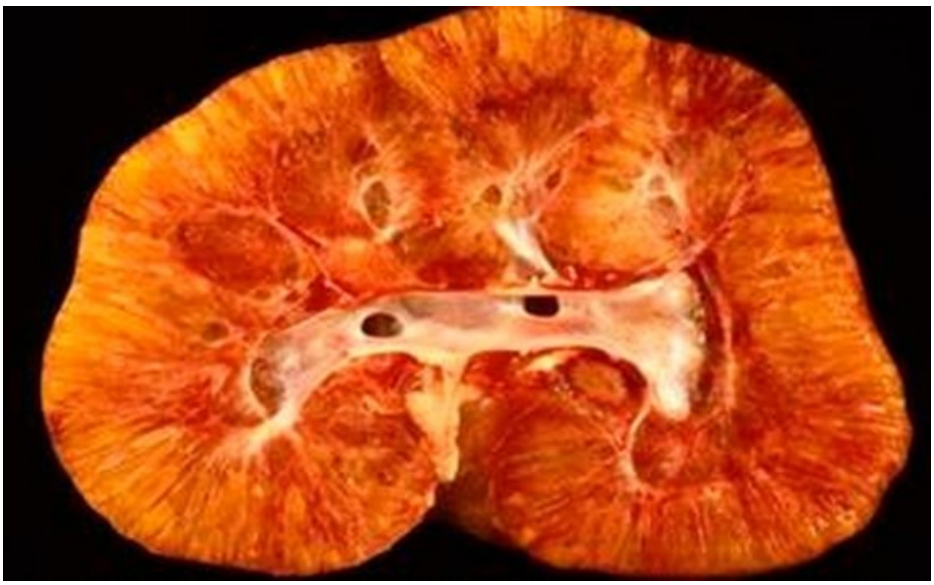
Pelvic rhabdomyosarcoma.

It is the most common pediatric malignancy of the pelvis. The Genito-urinary tract is the 2nd most common site after head & neck. MRI is preferred over CT in evaluating these masses. MRI, CT both show excellent contrast enhancement. It presents as solid mass of muscle density with areas of necrosis. Botyroid subtype accounts for 5% (grape-like, polypoid mass most common in vagina).

RENAL CYSTIC DISEASE IN CHILDHOOD

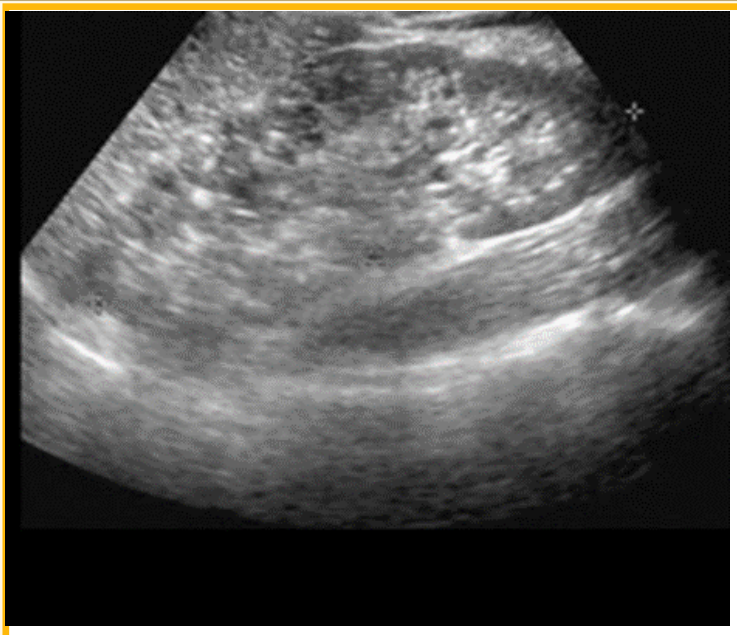
Infantile (recessive) Polycystic Kidney Disease (Potter Type I: RPKD)

Hepatic fibrosis is a common associated feature with inverse relationship. While the kidney problems predominate in infancy, portal hypertension and gastrointestinal bleeding secondary to fibrosis are the problems of later childhood. Hypoplasia of lungs may also result from the so-called fetal compression syndrome due to oligohydramnios. Ultrasound shows large echogenic kidneys with loss of cortico- medullary differentiation and complete distortion of normal renal architecture.



The specimen showing dilated outwardly radiating tubules.

Increased echogenicity in these patients is the result of numerous dilated, outwardly radiating tubules. Sometimes small cysts can be visualized by USG.

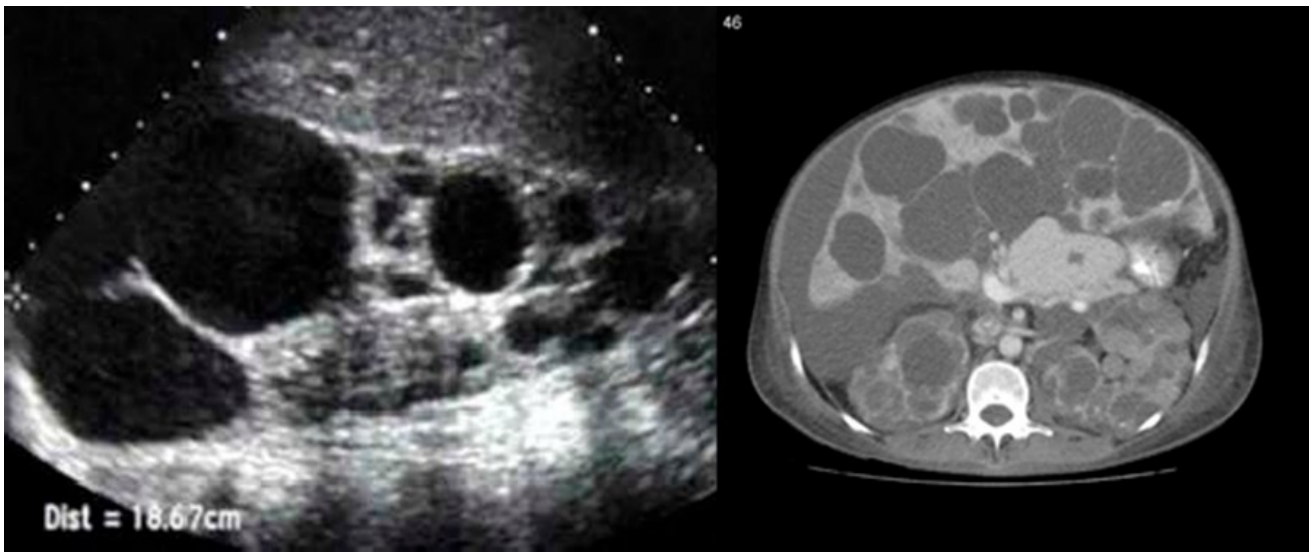


US showing echogenic kidney with few small cysts.

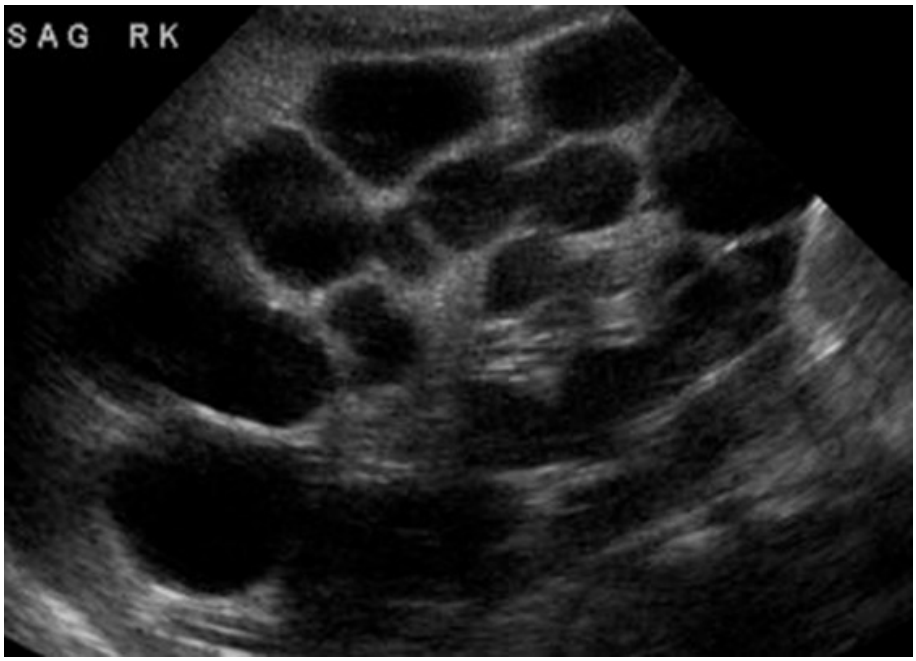
The radiating pattern of dilated tubules can be seen in intravenous urogram in delayed films. In juvenile forms, increased echoes from liver can also be seen due to hepatic fibrosis. Ancillary findings include asymmetric involvement, calcifications, increased echogenicity of the medullary pyramids, associated Caroli's disease of the liver and the Ivemark's syndrome.

Adult (Autosomal dominant) polycystic disease (ADPK: Potter Type III)

Large anechoic cysts occur in both kidneys including the subcortical regions. One kidney may be more involved than the other or even unilateral, but bilateral involvement is generally the rule. In infancy, the cysts may not be large, and the kidneys appear enlarged and echogenic. The cysts in ARKD are tubular whereas the cysts in ADPKD are small and spherical. Associations are cysts in liver and pancreas, seminal vesical cysts, and occult intracranial aneurysms.



USG showing multiple cysts in the kidney CT: ADPKD with hepatic cysts



US: multicystic dysplastic kidney

Multilocular cyst

Discussed in cystic masses of kidneys

Medullary cystic disease

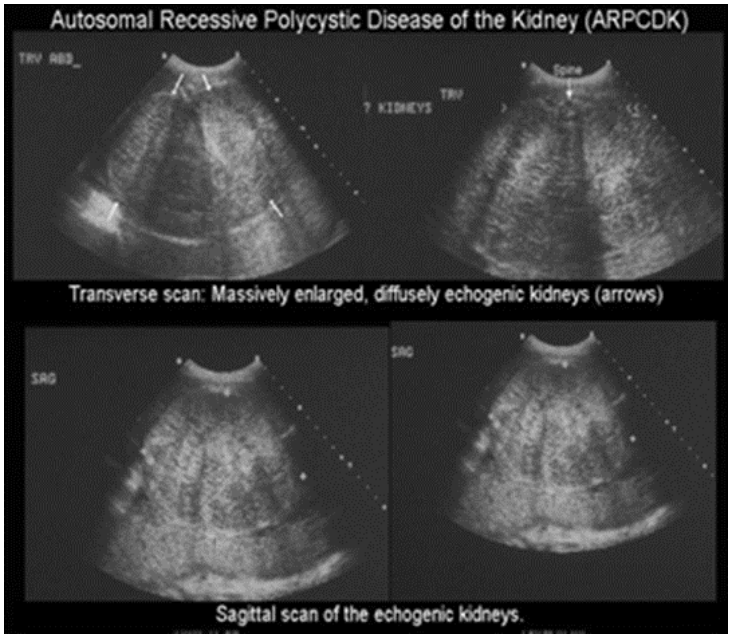
There are two forms of medullary cystic disease, medullary sponge kidney and medullary cystic disease.

Medullary sponge kidney

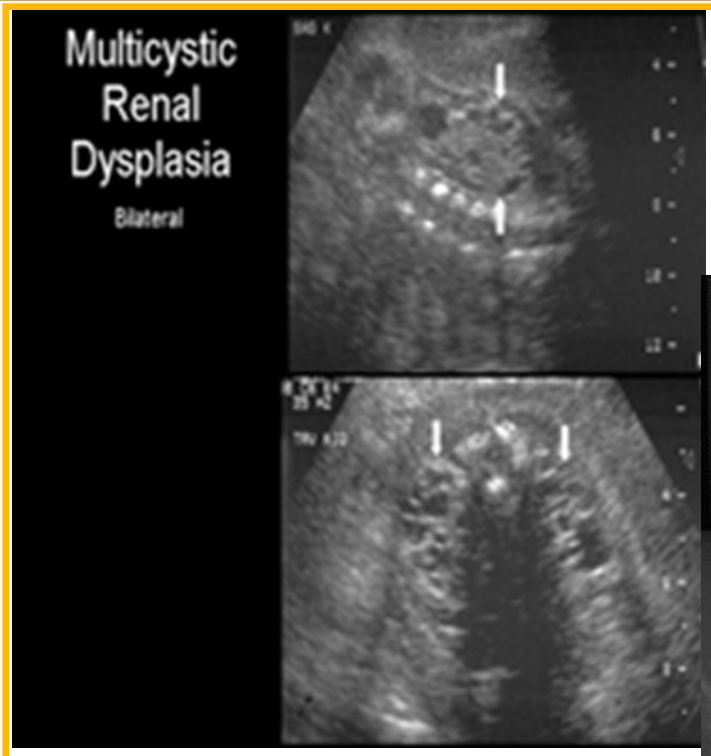
No cysts appear in the cortical portion of the kidney. It is not usually seen in childhood, but when it is, the changes are the same as those seen in adults. Ultrasound shows normal kidneys though there is increase in echogenicity of the renal pyramids.

Medullary cystic disease

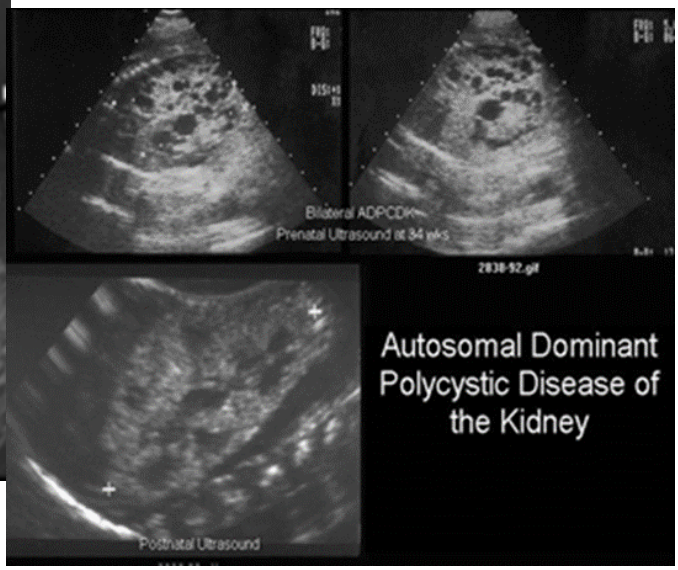
Kidneys are small and show considerable fibrosis. Many consider it same as juvenile hereditary nephronophthisis. With ultrasound, the small, echogenic kidney with small medullary or corticomedullary cysts is highly suggestive of the condition.



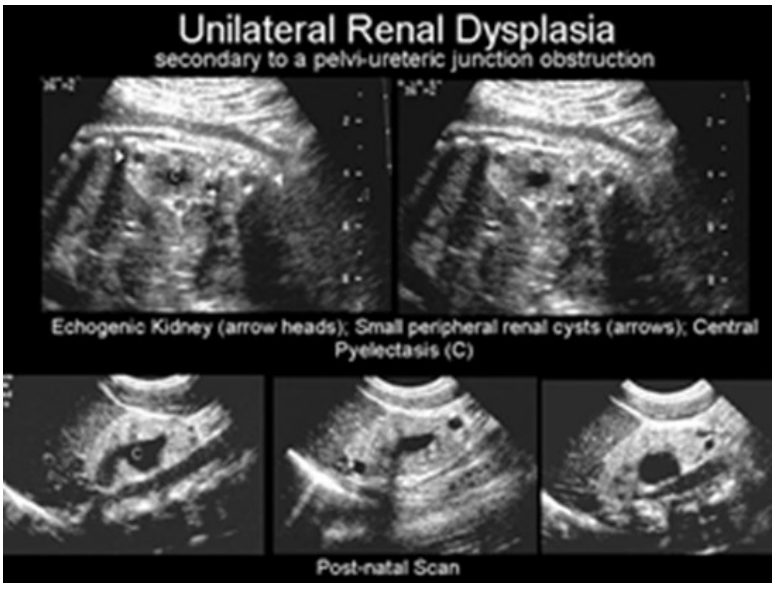
Type I Infantile autosomal recessive polycystic kidney disease (ARPCKD)



Type II Multicystic renal dysplasia. Multilocular cystic nephroma.
IIA Kidneys of normal / increased size
IIB Kidneys reduced in size.



Type III Adult polycystic disease of the kidneys Tuberous sclerosis Medullary sponge kidney



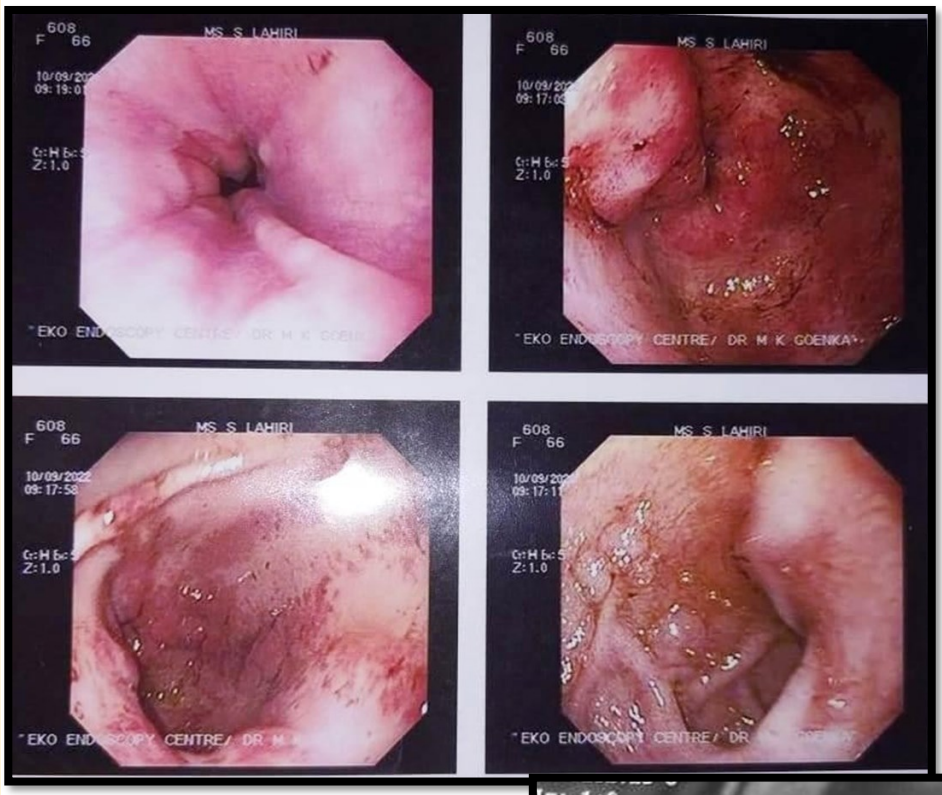
Type IV
Small cortical cysts / cystic renal dysplasia secondary to ureteropelvic junction obstruction.

A rare form of polycystic kidney disease that occurs in infants is glomerulocystic disease which can be confused with autosomal recessive kidneys. But the underlying problem is different in that cystic dilatation involves Bowman's space of the glomerulus and not in the tubules and cysts can be seen in the subcortical region. Kidneys are large and echogenic.

This is a 68 year old female presenting with anaemia

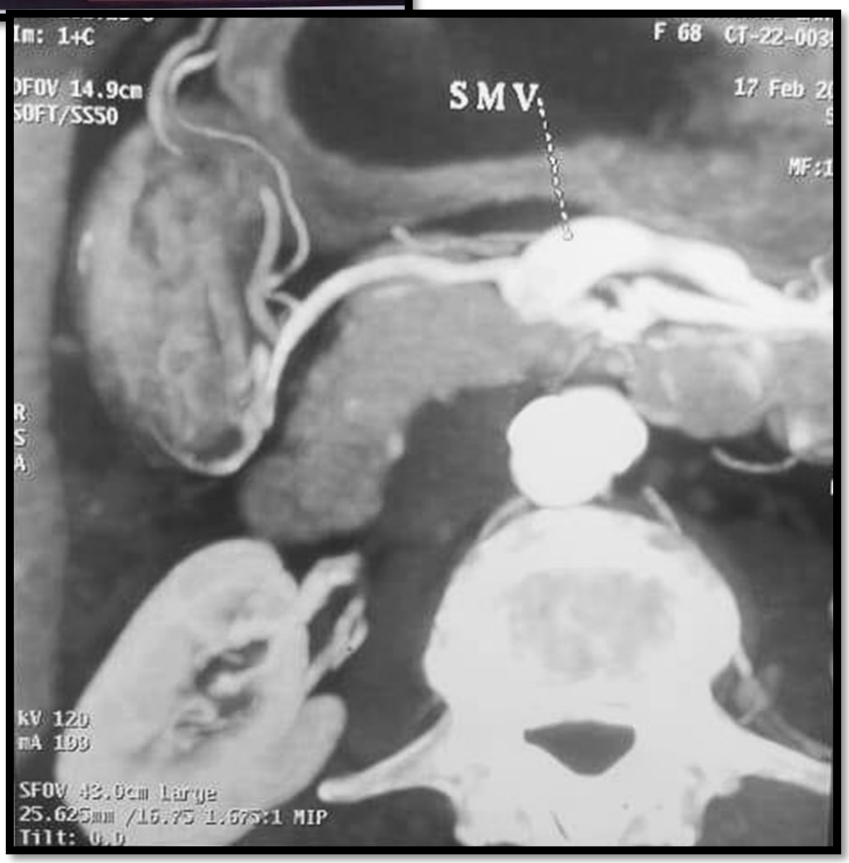
Triphasic MDCT features suggesting intense vascular enhancement in the portovenous phase in the gastric antral wall s without any other detectable abnormality in the stomach.

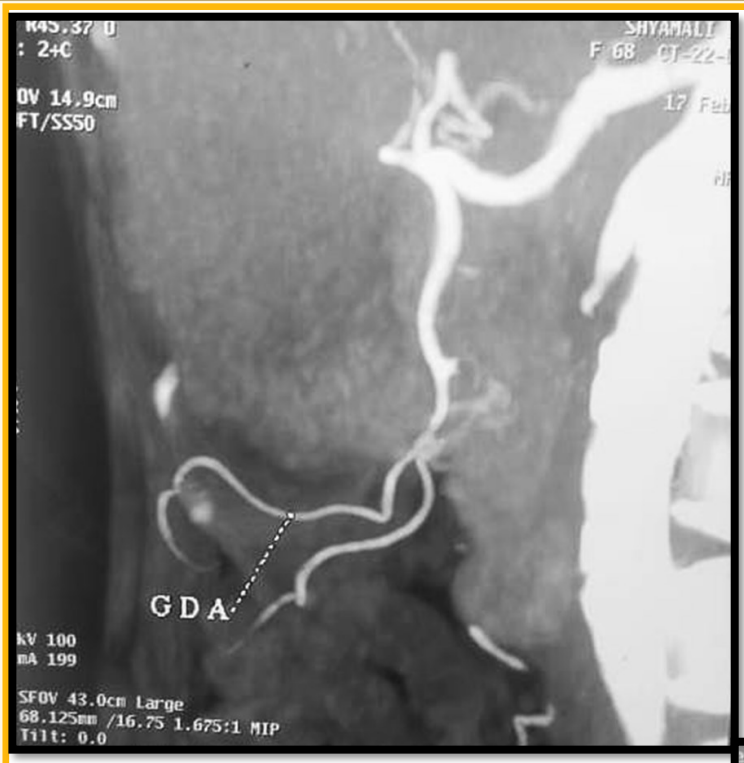
This is a case of Gastric Antral Vascular Ectasia (GAVE Syndrome)



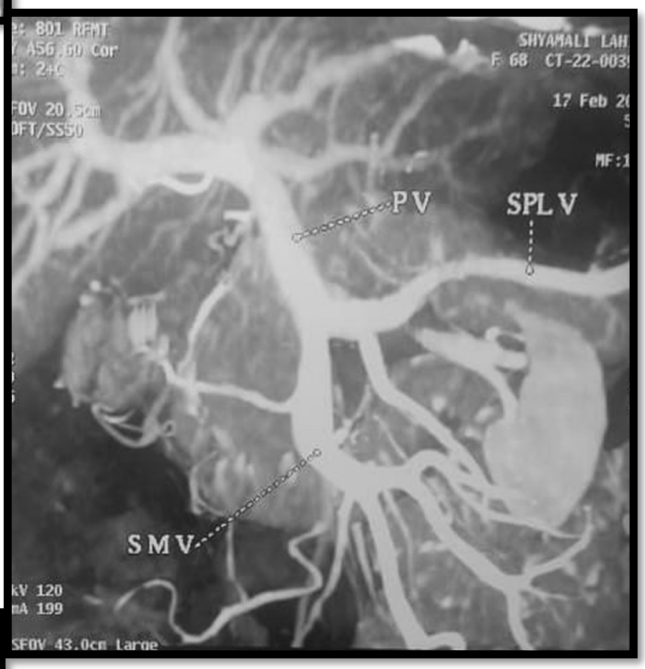
ENDOSCOPY – Demonstrating bleeding from the gastric antrum/

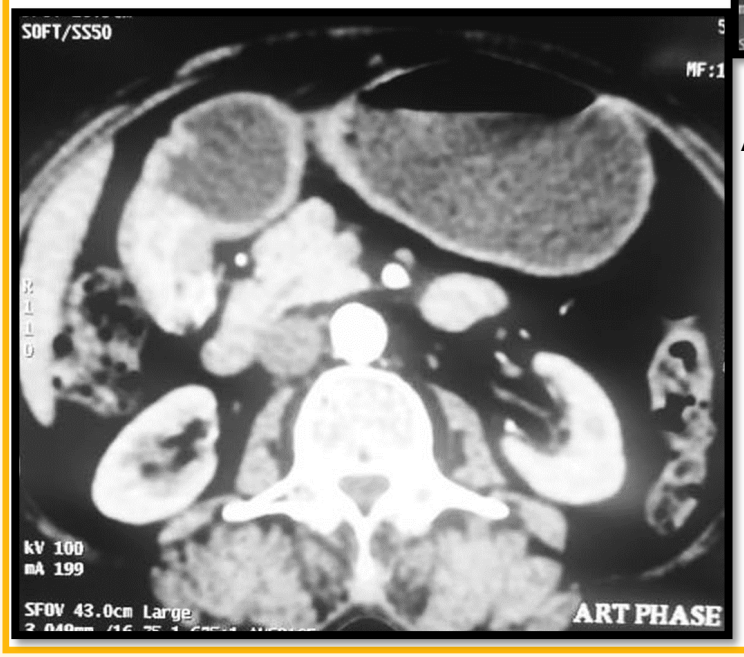
Normal SMV, however tributeries from the SMV are seen draining the gastric antral region.



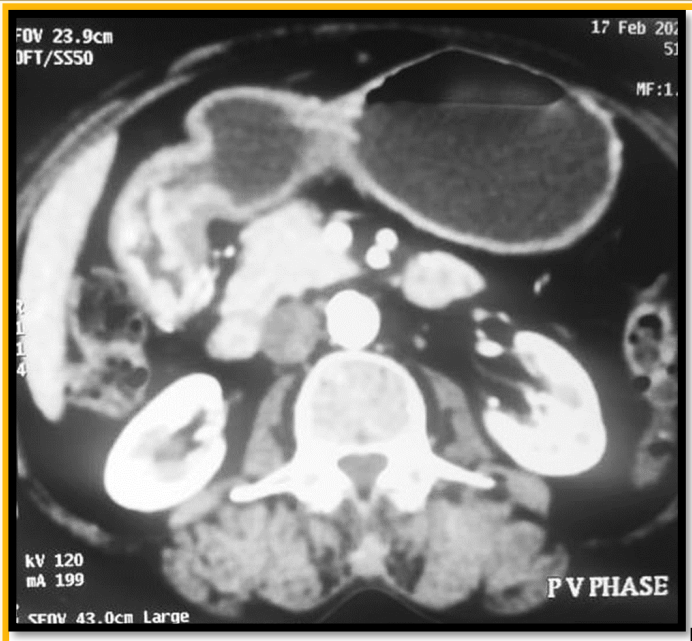


No feeding artery is seen involving the gastric antral region.



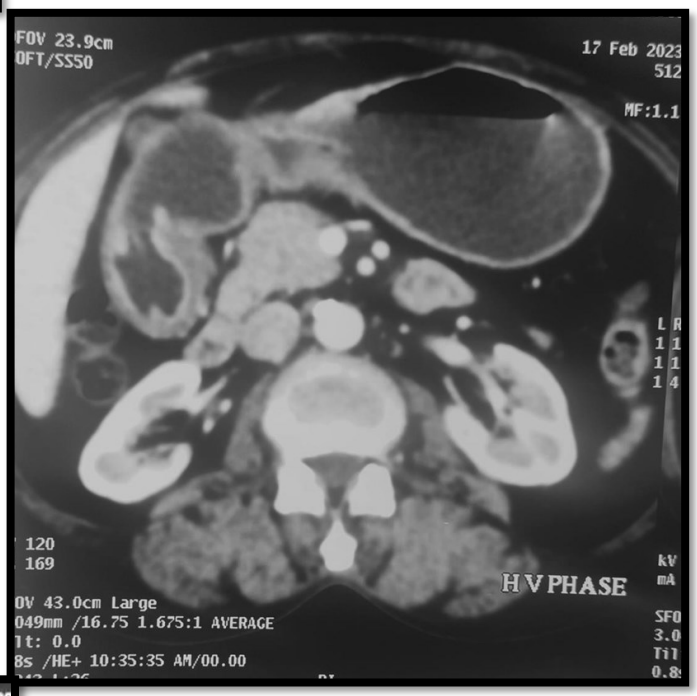


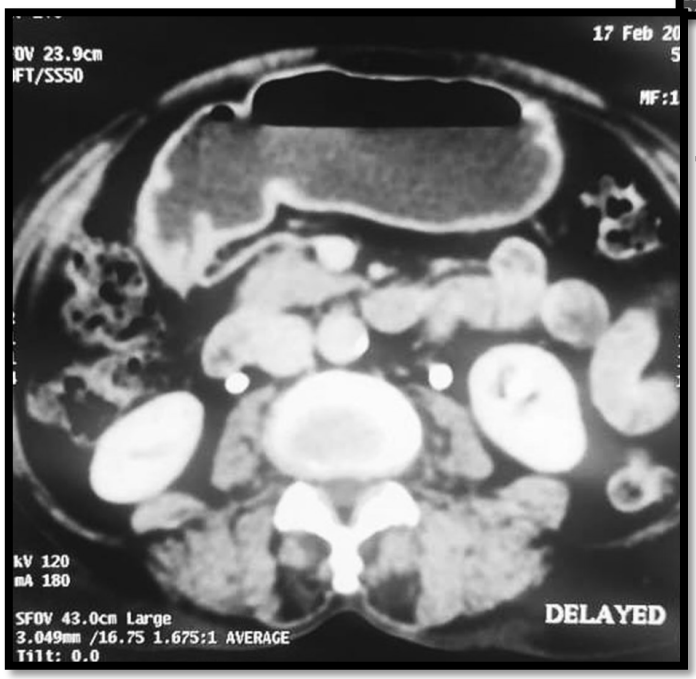
Arterial phase



Portal venous phase: intense enhancement in the gastric antral region.

Hepatic venous phase: Shows enhancement in the gastric antral wall.





Delayed phase: washout in the gastric antral region.

Hyperlinks of academic material published on YouTube by Calcutta Academy of Radiology	
1	Imaging of acute Pancreatitis—Dr. Anirudh Kohli
2	USG of rotator cuff - Dr. P. K. Srivastava
3	PET CT Physics - Dr. Sikandar Sk.
4	PET CT in Neurology - Dr. Sikandar Sk.
5	CAR - Case of the week - Case 1 - Megalencephalic leukoencephalopathy with subcorti-
6	CAR - Case of the week - Case 2 - Adenocarcinoma of terminal ileum - Dr. Viral Parekh
7	CAR - Case of the week - Case 3 - Stener lesion - Dr. Nivedita Chakraborty
8	CAR - Case of the week - Case 4 - Anterior shoulder dislocation - Dr. Nivedita
9	CAR - Case of the week - Case 5 - Secondary intracranial hypotension. - Dr. Viral Parekh
10	CAR - Case of the week - Case 6 - Intramyocardial Dissection - Dr. Ritu Agarwal
11	CAR - Case of the week - Case 7 - Radiation Necrosis and BT - RADS - Dr. Nivedita
12	CAR - Case of the week - Case 8 - Undisplaced right ulnar styloid base fracture - Dr. Nivedita Chakraborty
13	CAR - Case of the week - Case 9 - Hypoglycaemic encephalopathy. - Dr. Viral Parekh
14	CAR - Case of the week - Case 10 - Myocardial annular dysjunction - Dr. Ritu Agarwal
15	CAR - Tribute to Wilhelm Conrad Roentgen - Immortal Roentgen.
16	CAR - Case of the week - Case 11 - Dacryocystocele with anatomy of Nasolacrimal ap-
17	CAR - Case of the week - Case 12 - Tubercular osteomyelitis - Dr. Nivedita Chakraborty
18	CAR - Case of the week - Case 13 - Marchiafava Bignami disease - Dr. Viral Parekh
19	CAR - Case of the week - Case 14 - Parosteoal Sarcoma - Dr. Nivedita Chakraborty
20	CAR - Case of the week—Case 15 - Adrenal haemangioma - Dr. Viral Parekh

Hyperlinks of academic material published on YouTube by Calcutta Academy of Radiology	
21	CAR - Case of the week - Case 16 Patellar GCT - Dr. Nivedita Chakrabarty
22	CAR - Case of the week - Case 17 - MEN Syndrome - Dr. Sayan Sarkar
23	CAR - Case of the week - Case 18 - Langerhans cell histiocytosis - Dr. Sayan Sarkar
24	CAR - Case of the week—Case 19 - Hepatic angiomyolipoma - Dr. Viral Parekh.
25	CAR– Case of the week - Case 20 - Cirsoid aneurysm - Dr. Viral Parekh
26	CAR CME - Heart Anatomy
27	CAR– Case of the week - Case 21 - Pancreatic metastases - Dr. Viral Parekh
28	CAR - Case of the week - Case 22 - Intrapulmonary teratoma - Dr. M. Bhattacharya
29	CAR– Case of the week - Case 23 - Gall stone ileus - Dr. Viral Parekh

We have a new blog , where we publish cases, quizzes and various other education materials. Please

We are on YouTube

You can send your good case to us. We will publish it in our channel.

CAR

Calcutta Academy Of Radiology

A Platform For Radiology Education & Interaction

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A Platform For Radiology Education & Interaction

Calcutta Academy of Radiology was formed on international day of Radiology in 2019, that is on 8th. November, 2019 to promote Radiology education, keeping in mind Residents as well practicing Radiologists.

Since then we are on WhatsApp and Telegram, where thousands of cases have been discussed by members from all over the world and in the process we are sharing our experiences and helping each other. These social media platforms have turned out to be great learning tools.

We had organized a half day CME also on GI Radiology in February, 2020. Another CME on Neuroradiology was organized in July 2022, We have plans to organize more such CME programmes in future .

We are on YouTube also where we regularly post teaching videos and in the process try to propagate Radiology as much as possible.

We are on WhatsApp and Telegram

Next issue will be published in June, 2023

We will be bringing out such Newsletters with a frequency of one issue every two months. So, next issue will be published in June 2023.

We are hereby inviting good interesting cases and original work from our fellow Radiologists, which will be published on merit basis.

So, I request all of you to contribute to this Newsletter. Please send your material in Word format with good quality images. Please send your photograph and details of your place of work with email address also.

Your material should reach us by 15th. Of May, 2023. You can send the word file to our abovementioned email address or you can WhatsApp it to above-mentioned three phone numbers.

On our YouTube channel, we are presenting a new case every week and there is good response to such teaching videos. I hereby request all Radiologists to share their teaching videos with us and if they contain good teaching material, we will surely publish it on our channel. So friends, during this trying time , stay away from depression by engaging yourself in academic activities.

Our Telegram group is lagging behind in academic activities as compared to two WhatsApp groups, so I request all of you to join our Telegram group.

Telegram can add up to whopping 200,000 members. So, if we post our study material there; it will reach to and benefit huge number of members.

So friends, take care and be safe.

So, see you all in next issue of CAR newsletter.

So long,

Anup Sadhu, Bijon Kundu and Viral Parekh.

We are thankful to all the contributors for sharing their experiences and literature with us and in the process helping the Radiological fraternity.