Results

Fifty five patients with abnormalities detected on MDCT examination including, thirty four male and twenty one female with age ranged from twenty to eighty nine years.

Table (1): Age and sex distribution among the studied cases.

Age group	Male	Female
20-30 ys	4	2
>30-40 ys	6	3
>40-50 ys	7	5
>50-60 ys	9	6
>60-70 ys	5	3
>70-80 ys	2	1
>80-89 ys	1	1
Total	**34**	**21**

Abnormalities were classified into three groups **(chart 1)**

- **Group A**: Showed Parenchymal pathology including twelve cases that can classified by MDCT into subgroups; inflammatory and Neoplastic pathology.
- **Group B**: Showed urothelial tract pathology including thirty nine cases that can classified by MDCT into subgroups; inflammatory, Neoplastic, urolithiasis and PUJO.
- **Group C**: Showed vascular pathology including four cases

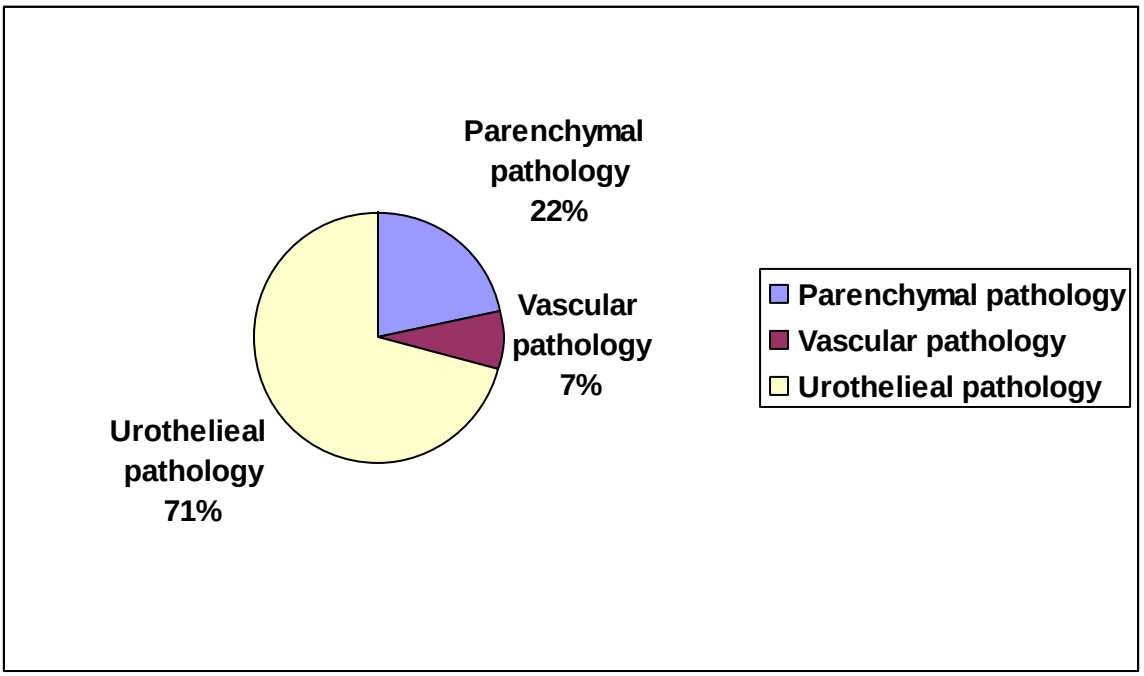

Chart 1: Anatomical distribution of the cases in this study.

A-Parenchymal pathology: (chart2 & 3)

I- Inflammatory:

- One focal left pyelonephritis.
- One Left Xanthogranulomatous pyelonephritis.
- One left renal TB.
- One right renal abscess

II- Neoplastic:

- Benign:
    - Two angiomyolipoma. One solitary and one associated with tuberous sclerosis.
    - One right lower polar oncocytoma..
- Malignant:
    - Four RCC, three right and one left.
    - One bilateral renal lymphoma.

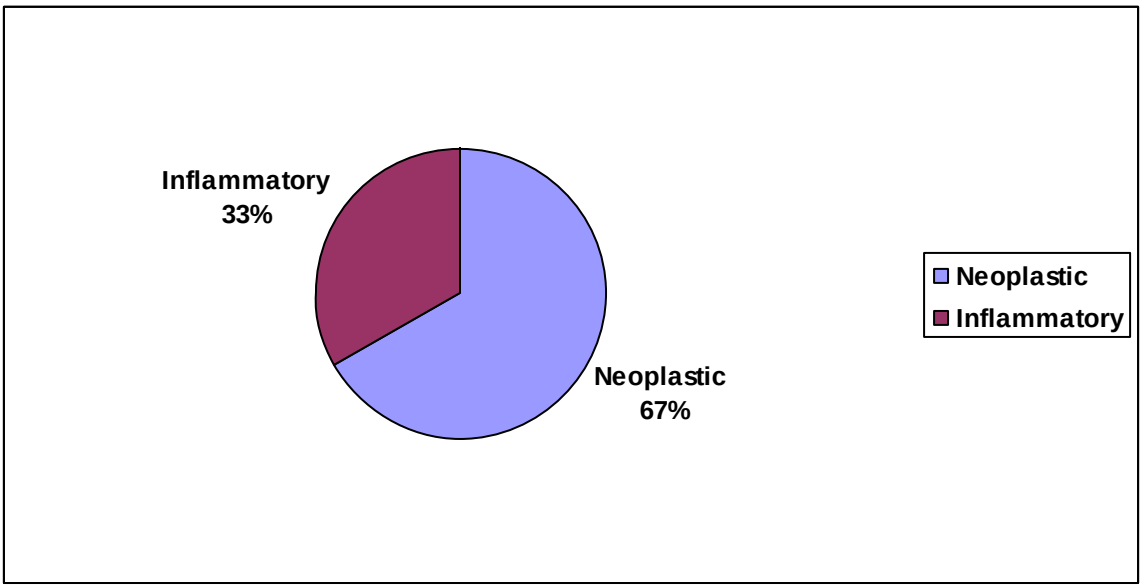

Chart 2: Pathological lesions in Parenchymal cases

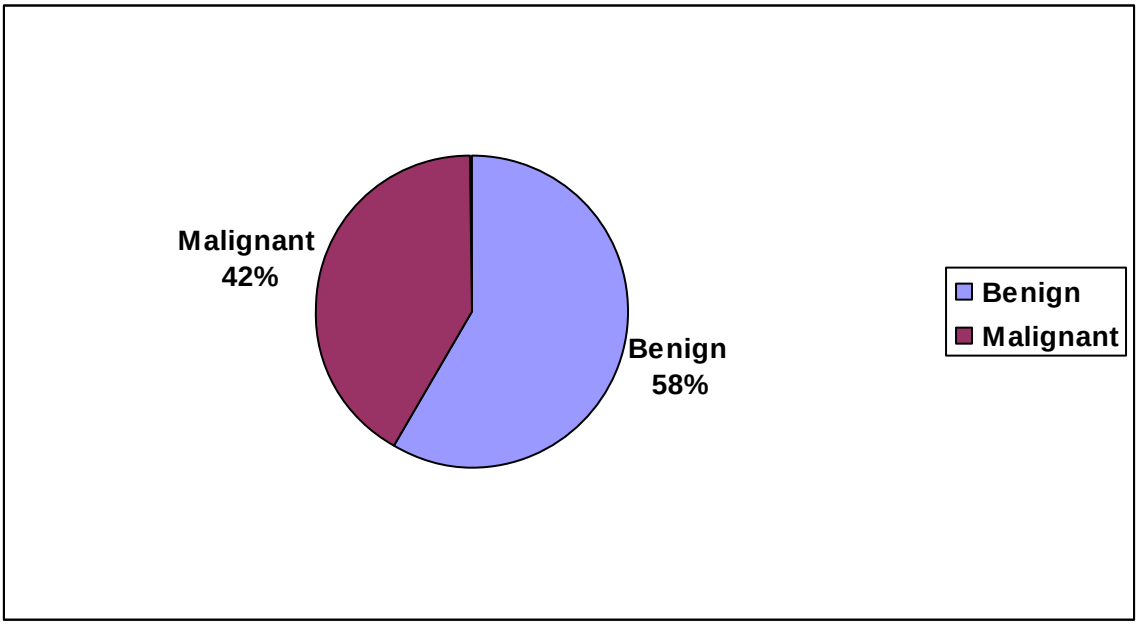

Chart 3: Benign versus malignant Parenchymal lesions

Table (2): Agreement between MDCT results and histopathology in Parenchymal renal pathology:

Number of renal masses	MDCT	Histopathology
Benign	7	7
Malignant	5	5
Total	12	12

Table (3): The sensitivity and over all accuracy of MDCT in Parenchymal renal pathology:

MDCT	Sensitivity	Accuracy
Benign	100%	100%
Malignant	100%	100%

B- Vascular pathology :

- One case of arteritis, showed bilateral intrarenal micro-aneurysms
- One case of unilateral renal artery stenosis that confirmed by conventional angiography and underwent angioplasty via balloon dilation.
- Two nut-cracker syndrome. The two cases were anterior nutcracker syndrome. They had had a history of left loin pain and hematuria .renal phleobography with combined pressure recordings were obtained to confirm the diagnosis .one patient underwent autotransplantion and other refused the operation.

C-Urothelial tract pathology:(chart 4)

I- Urolithiasis :

Twenty patients had urinary stones including;

- Ten cases with renal stones, one of them associated with Horseshoe kidney and one with ADPKD
- Seven cases of Ureteric stones associated with variables degrees of hydrouertronephrosis one of them associated with Ureteric duplication.
- Three cases of vesical stones

MDCT examination detect all urinary stones with sensitivity and accuracy 100%.

Table (4): Detection of the site and size of the urinary stones by MDCT urography:

	CTU	
	Detection No.	**Sensitivity**
Renal stones:	10	100%
- Upper calyceal	3	
- Middle calyceal	3	
- Lower calyceal	4	
Ureteric stones:	7	100%
- PUJ	1	
- Lumbar	1	
- Iliac	2	
- Pelvic	3	
Vesical stone.	3	100%
Stone size:	20	
- <5mm	4	
- 5-10mm	6	
- >10mm	10	

II- Inflammatory:

- Two ureteric strictures, one focal on right and one diffuse on left lower third of ureter.
- One bilateral ureteritis cystica.
- Two case of cystitis, one case associated with diffuse circumferential wall thickening and one case of bilharzial cystitis

III- Urothelial tumors:

Twelve patients had urothelial tumors including**;**

- Three intrarenal collecting system neoplasm were diagnosed by our CT protocol , two presented as large masse , one involving right upper and middle calyx while other one was involving left lower calyx , third case was small confined to left lower calyx.
- 5 cases of urinary bladder neoplastic lesions were detected with our MDCT examination protocol. These Neoplastic cases were correctly staged with our CT protocol, Two cases produce bladder wall thickening and invading perivesical fat the other three cases were presented with a large masse one not invading perivesical fat and other two cases invading and one of these two cases infiltrating into adjacent organs .urinary bladder neoplasm may encroaching on one or both vesicouertric changes producing backpressure changes as following;
  - One UB tumor infiltrating both vesicoureteric junction Producing bilateral hydronephrosis.
  - One UB tumor infiltrating the left vesicoureteric junction Producing left hydronephrosis.
  - One UB tumor infiltrating the right vesicoureteric junction Producing right hydronephrosis.

- One UB tumor arising at right bladder diverticulum
- One not encroached at any orifice

4 cases were proved to be neoplastic and one false positive case (result from misinterpretation of an inflamtory lesion presented as diffuse bladder wall thickening) yielding 100% sensitivity and 80% accuracy and positive predictive value.

- 4 cases of ureteric neoplastic lesions by MDCT examination , two cases showed segmental circumferntial wall thickening with luminal narrowing and two cases presented with focal eccentric mural thickening. All cases were associated with proximal hydrouertronephrosis. 3 cases were proved to be neoplastic and one false positive case (result from misinterpretation of an inflamtory lesion presented as circumferntialy wall thickening) yielding 100% sensitivity and 75% accuracy and positive predictive value.

Table (5): Pathologically confirmed urothelial tumors detected by MDCT urography

	No. of true +ve diagnosis	**No. of false +ve diagnosis**	**No. of false –ve diagnosis**	**No. of total cases**
Intrarenal collecting system	3	-	-	3
Ureteric	3	1	-	4
UB	4	1	-	5
Total	10	2	-	12

The sensitivity of our CT protocol for detection of urothelial tumors was 100% and positive predictive value and accuracy were 83.3% .

IV UPJO

- Two cases with uretero-pelvic junction obstruction, one with primary UPJ obstruction & one with crossing accessory vessels. Both cases were treated by pyeloplasty talking into consideration presence or absence of crossing vessels

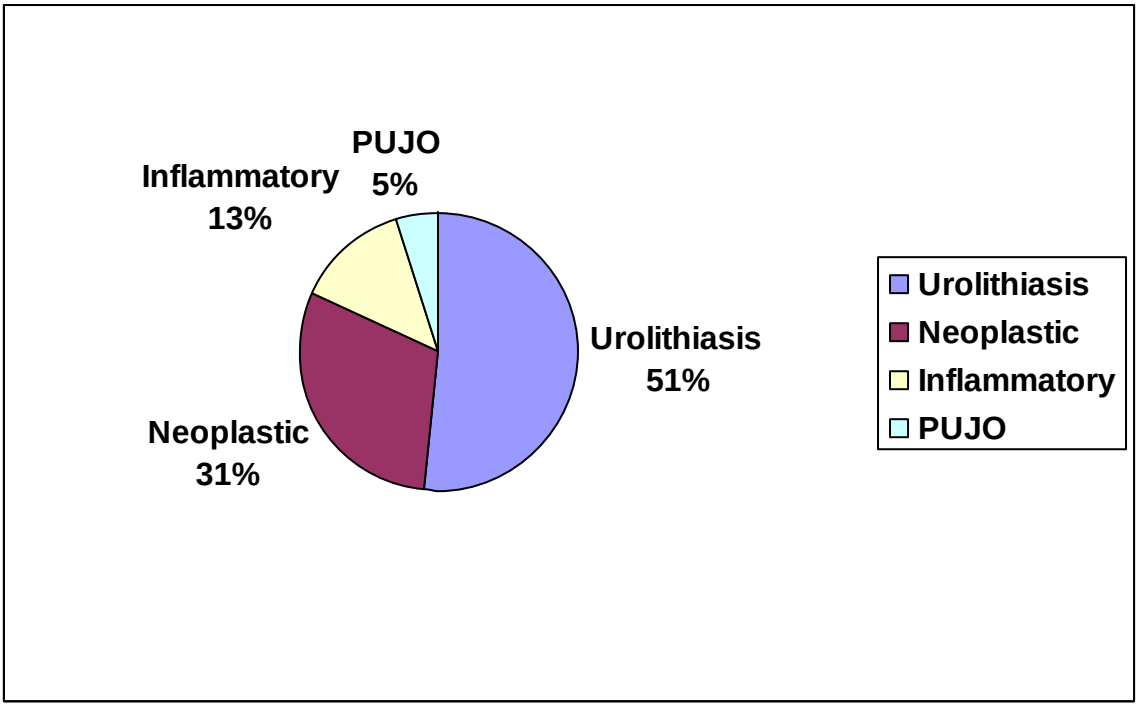

Chart 4: Pathological lesions in the Urothelial tract lesion