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RENAL CYSTS DIAGNOSIS WITH APPLICATIONS OF CT

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Abstract

This research included a clinical study of patients of different ages within selected ranges and different ages, gender, drug use and smoking, and in the form of multiple groups.

Distribution of the studied sample according to the testing device, cyst type, cyst location, and cyst shape. Distribution of the studied sample according to kidney dimensions, kidney width, texture, and volume, and study of normal and abnormal kidneys. Statistical analyses and additional computer applications were used to infer the variance of the studied cases, which may be studied later. The cysts, particularly in differentiating them from solid renal tumors and other cystic lesions. It is a highly accurate technique for characterizing renal masses seen on urograms and is often useful in differentiating benign cysts from tumors, including cystic renal cell carcinoma.

Keywords: CT. abdominal masses ,US imaging, renal cyst, application.

Introduction:

Multisystem kidneys are a dominate cause of abdominal masses and newborns. The incidence is approximately 1 in 10,000 live births, and it is more common in infants of mothers with diabetes. This condition is not hereditary and is more common in men [1]. Histologically, multiple immature glomeruli and a reduced number of renal tubules are found. Multicystic kidneys are usually unilateral, and rarely bilateral Oligomyelia and pulmonary hypoplasia occur in bilateral kidneys, leading to death. Unilateral MMD may be asymptomatic and is discovered incidentally in adulthood, or during evaluation for infection or blood in the urine[2]. Other symptoms present in children include abdominal mass, intermittent abdominal pain, and failure to thrive. Spontaneous deterioration of MMD has been reported [3]. Associated with contralateral renal abnormalities [4] are often identified as ureter pelvic junction obstruction, horseshoe kidney, ureteral anomalies, renal hypoplasia, vesicoureteral reflux, and malrotation. Radiological findings vary due to the variability of involvement in polycystic kidneys. No renal function is observed on intravenous urography (IVU) if the entire kidney is affected. Retrograde pyelography shows ureteric diverticula or dysplasia. Ultrasound reveals random cysts of varying sizes (a cluster of grapes), with the largest located peripherally. Absence of a visceral rim, cortico-medullary differentiation, and a central renal sinus complex are noted. These cysts are not contiguous with each other and are separated by septa. Rim-like calcifications are sometimes found in adults [5]. he diagnosis on CT is as follows [6,7] (Figure 1): - Multiple cysts of varying sizes replacing or affecting parts of the renal tissue. - No improvement associated abnormalities.

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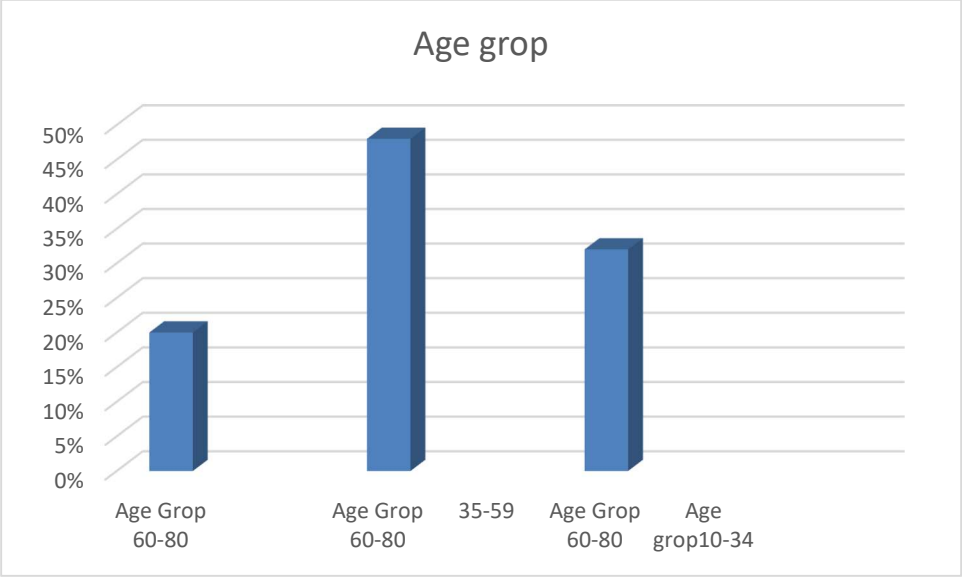
Results:

This table show the most sample under study Age group between 36-58 years and male by percentage 56% with no smoking habitat .

TABLE (1) : Distribution associated with sampling with respect to the gender , ages and smoke.		**NO(25)**	**%**
Age Group	**13-35Y**	**8**	**32.0**
	36-58Y	**12**	**48.0**
	59-81Y	**5**	**20.0**
	Mean_+ SD	45.12	18.08
Genders	**Males**	**15**	**56.0**
	Females	**10**	**44.0**
Smoking	**No**	**17**	**68.0**
	Yes	**8**	**32.0**



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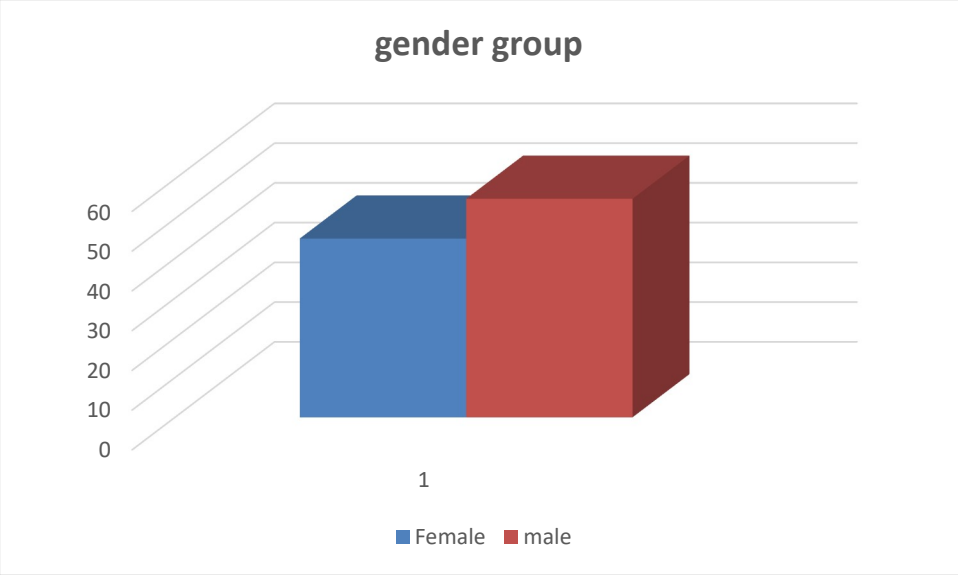

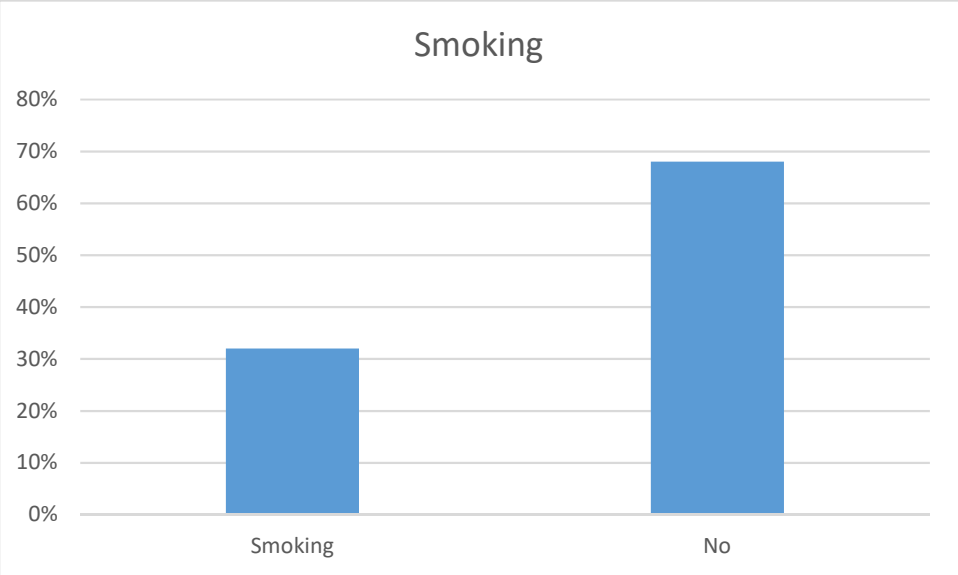

This table shows most study sample under study were tested by CT device and had simple cyst and most of them the have cyst inside of kidney with around shape by percentage 60, 80, 64 and 76 respectively

TABLE (2) : Distribution associated with sampling with respect.TO DEVICE TEST ,CYST TYPE ,SITE OF CYST AND SHAPE OF CYST		**NO(25)**	**%**
Device test	**US**	**10**	**40.0**
	CT	**15**	**60.0**
Cyst Type	**simple cysts**	**20**	**80.0**

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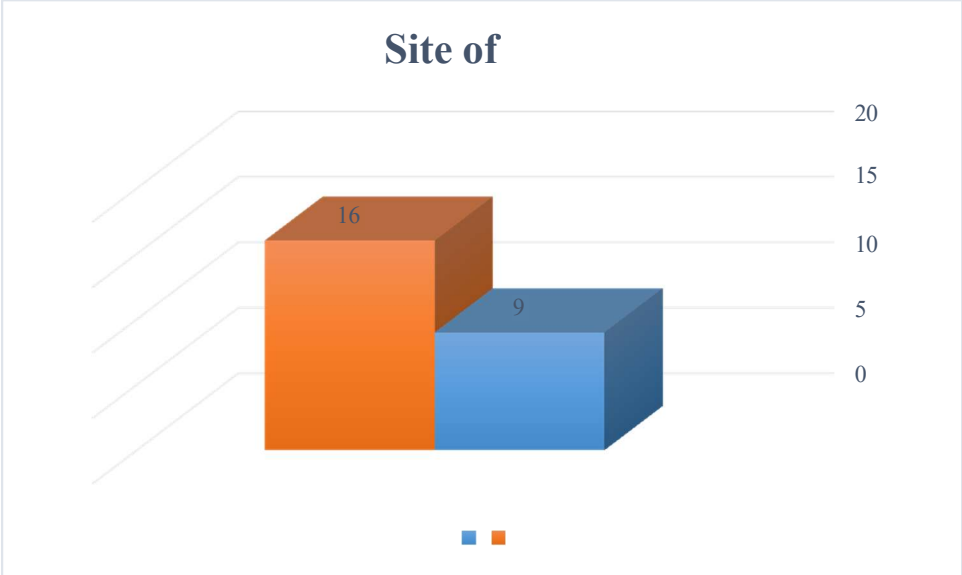
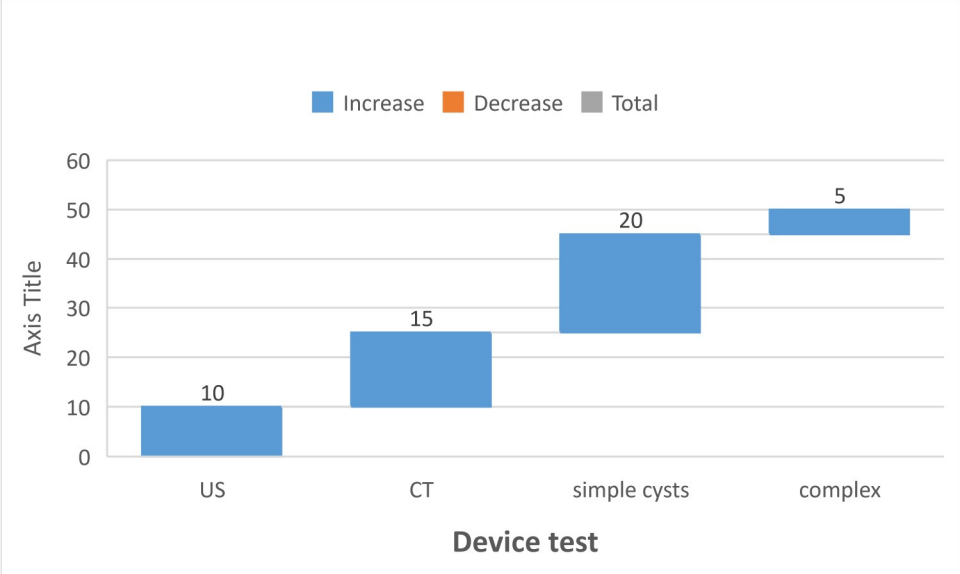


	complex	**5**	**20.0**
Site of Cyst	**surface of kidney**	**9**	**36.0**
	inside of kidney	**16**	**64.0**
Shape of Cyst	**around**	**19**	**76.0**
	oval	**6**	**24.0**



This table show according to kidney features 60%, 64% and 64% from study sample have dilatation, abnormal texture and abnormal kidney size respectively.

TABLE (3) : Distribution associated with sampling with respect to. TO DILATATION ,TEXTURE AND SIZE OF KIDNEY		**NO(25)**	**%**
Dilatation	**No**	**10**	**40.0**

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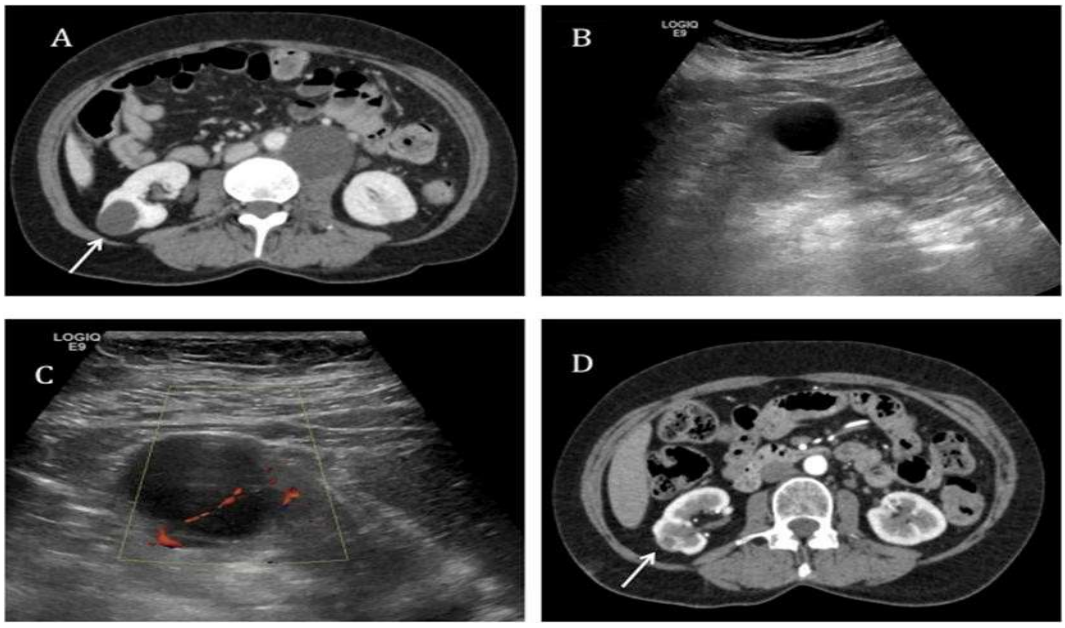
	Yes	**15**	**60.0**
Texture	**Abnormal**	**16**	**64.0**
	Normal	**9**	**36.0**
Size of Kidney	**Abnormal**	**16**	**64**
	Normal	**9**	**39**

This table clear mean Age of study sample was 45.12 year with SD 18.08 year while number of cyst rang 4 cysts by mean 2.04 and SD 1.172 and mean of size of cyst was 17.364 mm by SD 14.159 mm.

	N	**RANG**	**MINIMUM**	**MAXIMUM**	**MEAN**	**STD.DEVIATION**
AGE	**25**	**68**	**13**	**81**	**45.12**	**18.088**
NUMBER OF CYST	**25**	**4**	**1**	**5**	**2.04**	**1.172**
SIZE OF CYST (MM)	**25**	**60.5**	**2.5**	**63.0**	**17.364**	**14.1597**



Figure(5.1). A) CT scan showing a simple cyst measuring 2.7 cm in diameter in the right posterior inferior pole of the kidney (arrow). B) Ultrasound of the right kidney showing a renal cyst with a single thin septum. C) Ultrasound of the right kidney showing a complex cyst measuring 3.1 cm in diameter with intrarenal blood vessels. D) CT scan showing a 10 mm low-attenuation, non-enhancing lesion in the right posterior inferior pole of the kidney, with a slightly thickened enhancing wall (arrow).

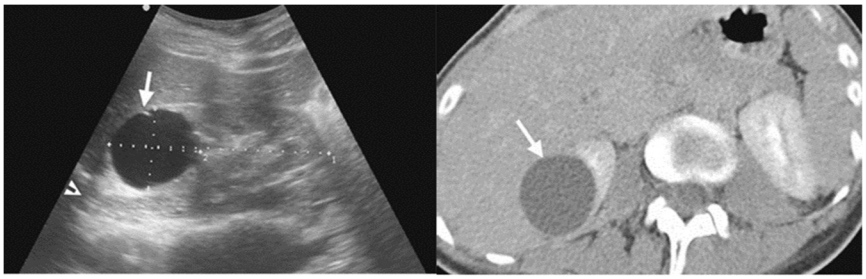


figure (5.2) Renal ultrasound (US) and computed tomography (CT) show imaging features of a simple renal

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cyst.

Statistical computerized analysis:

Data were analyzed using the SPSS-25 statistical package (Statistical Package for the Social Sciences - Version 25). Data were presented using simple measures: frequency, percentage, arithmetic mean, standard deviation, and range (minimum and maximum)[8].

Results analyses:

Among the 25 examined cases, the largest age group was between 26-58 years, with a rate of 48% , and the gender of the majority was among males, at 56% , In 25 cases , there were 75% , hereditary cases , while in other research , genetic cases were less than the mentioned percentage . Here, my study does not match them , for example in Figure (4) . The results of the computed tomography (CT) scan of the patient showed a genetic cyst in both kidneys.

Figure (6) axial CT scan image demonstrating a cyst in both kidney

Most of the cases were studied on a computed tomography (CT) machine , which is the most accurate scientifically

On tomography of the study, Sagel et al. CT testing has been found to be an most method for distinguishing between benign renal cysts and tumors and its accuracy is close to 100% in those lesions demonstrated by surgery or aspiration. Most experience for the current series also shows close to 100% accuracy if the unspecified pest group is not and not belong to the statistics studies . There is still a need for more serious investigation into this category. The only contradiction seems to be our use of an undefined overlapping region. The selection of patients for CT renal masses in our series was based on the presence of a suspicious lesion on urography. Almost all patients immediately went from the excretory area to the CT examination room. At In our institution, we find it much easier to add one or two additional patients to a CT schedule rather than an ultrasound schedule[9].

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Figure (7) shows a coronal CT scan showing a demonstrating 8 cm complex cyst of the right kidney

Conclusion :

Kidney cysts are bags of fluid that forming in the kidneys. They are usually described as "simple" cysts, it mean that they are thin-walled and contain a water-like fluid. Kidney cysts become fairly common with age and usually do not cause symptoms or harm.

It is carefully examined in a computed tomography device that has characteristics that make it the best among medical scanning methods, The test data were obtained from Teaching Hospitals.

The age range between 36-58 years was the most relatively , and cysts increased more in males than in females and in non-smokers as well . The type of renal cyst was simpler than the complex cyst, and the size of the kidneys was abnormal, and the youngest age group was in a 13 years old patient 81 years old and older.

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