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Ultrasound Frequency Of KUB Stones In Patients With Flank Pain

Amen Asif[1], Taiba Zulfiqar,[2] Abid Ali[3]

[1-2] *University Institute of Radiological Sciences and Medical Imaging Technology, The University of Lahore, Gujrat Campus, Pakistan.*
[3] *Department of Allied Health Sciences, The University of Lahore, Gujrat Campus, Pakistan.*
*** Corresponding Author e-mail:** 70058846@student.uol.edu.pk , Taibazulfiqar1@gmail.com, Abid.Ali@ahs.uol.edu.pk.

ABSTRACT

Aims and objectives*: To find out the frequency of kUB stones in patients with flank pain.* ***Methods:*** *This prospective cross-sectional study was done at the Radiology Department of DHQ Hospital, Gujrat. It includes a total 61 patients who presented with flank pain. The age range of patients was between 21 to 75 years and included 35 males and 26 females. SPSS was then used for Statistical analysis. Frequency of renal tract stones was calculated.* ***Results: -*** *Out of 61 patients who presented with flank pain, stones were present in 45 (73.7%) patients. 17(27.9%) stones were seen in right kidney, 12(19.7%) stones were seen in left kidney,13(21.3%) in right ureter and 3(4.91%) in left ureter.*

Conclusion: - *Sonography is an excellent modality with many benefits for diagnosing kidney stones it is non-ionizing radiation free, relatively inexpensive, widely available, and simple to use, with a high diagnostic effectiveness. It is concluded patients that are reported with flank pain have kidney stones.*

Keywords: Ultrasonography, Left Kidney, Right Kidney, Left Ureter, Right Ureter, Hydronephrosis.

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INTRODUCTION

Stones in the kidney can be a significant reason for illness, with patients ordinarily giving pain and Urinary tract infections, which can result in persistent diseases of kidney and even kidney loss. (1-3)

Minerals and urine components such as Calcium oxalate, calcium phosphate, cystine or uric acid can precipitate or crystallise in the kidney, resulting in a kidney stone or calculi.

Urolithiasis is a common issue that has a significant impact on both health and finances around the world. It is regarded as common cause of morbidity. Kidney stone is the third most prevalent urological condition, behind urinary tract infections and prostate infections. (4,5)

The symptoms of kidney stone depend on where it is located: in the kidney , ureter or urinary bladder (6) Stone development does not create any symptoms at first. Later signs and symptoms of kidney illness include renal colic, flank discomfort, haematuria, obstructive uropathy, urinary tract infections and hydronephrosis. These disorders can cause nausea and vomiting as well as pain from the stone incident (7)

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Ultrasound Imaging is a painless, non-costly and generally accessible imaging methodology. It can accomplish exact analysis in the most instances of intense and long term obstruction in the kidney without the requirement for radiation. [8]. However, it is a generally acknowledged, an exceptionally valuable and reasonably precise to detect hydronephrosis; It isn't extremely compelling to decide the reason for impediment. [9] kidney stones can be easily identified by Ultrasound imaging. It can identified ureteric stones with the viability of 57.3 Percent without hydronephrosis and 81.3 percent with hydronephrosis. [10] Although USG imaging is less precise than Computed Tomography in distinguishing ureteric stones , it is recommended as first choice imaging modality for pregnant and pediatric patients[11]

MATERIAL AND METHODOLOGY

For 2 months, this cross-sectional investigation was conducted. A convenient Sampling technique was used for the collection of data. Total 61 Patients who come to the Radiology Department of DHQ Hospital Gujrat with flank pain and suspected to have renal tract stones were enrolled. Patients of all age group were included while Patients who had a single kidney or any other kidney pathology, or who were undergoing dialysis were excluded from the study. The ultrasound was performed by an experienced sonologist using proSound ultrasound machine. After taking demographics details of patients, renal dimensions were measured and presence of stones in both kidneys, ureter and urinary bladder were determined. Associated complications such as hydronephrosis was also noted. The Statistical Package for the Social Sciences (SPSS),version 20 is used to enter and analyse data .The mean and standard deviation were used to express quantitative data, whereas frequency and percentage were used to express qualitative data.

RESULTS:

The total 61 cases of all age groups were enrolled in this study. The mean value of age was found to be 32.66±9.66 with minimum age of 21years and 75years as maximum age range.

The total 61 cases of all age group were involved in this study in which there were 35 male (57.4%) and 26 (42.6%)females (Table 1) respectively.

28 Patients were in the age group of 21 to 30 and 26 in age group of 31 to 40 and 5 in the age of 51 to 60 years old,1 in the age group of 61 to 70 and 1 patient of the age more then 70 years old (Table 2) respectively.

out of 61 patients there were 17(27.9%) patients who showed with Right Kidney stone 12(19.7%) with left kidney stones and 13 (21.3%) with Right ureteric stone and 3(4.9%) with left ureteric stones (Table 3) respectively

Out of 61 cases Single stone is present in 43 (70.5%) patients and 2(3.3%) patients have multiple stone and 16 (26.2) persons that come with flank pain have no stones (Table 4)

Out of 61 patients there were 11 (18.0%) patients who have right Hydronephrosis, and 12(19.7%) patients have left Sided Hydronephrosis, and 38 (62.3%) persons are reported with flank pain but they have no kidney stone (Table 5)

Table 1 Gender

Gender	Frequency	Percent (%)
Male	35	57.4
Female	26	42.6
Total	61	100.0

Table 2 Age group

Age Group	Frequency	Percent (%)
21-30	28	45.9
31-40	26	42.6
51-60	5	8.2
61-70	1	1.6
>70	1	1.6
Total	61	100.0

Table3 Location of kidney stone

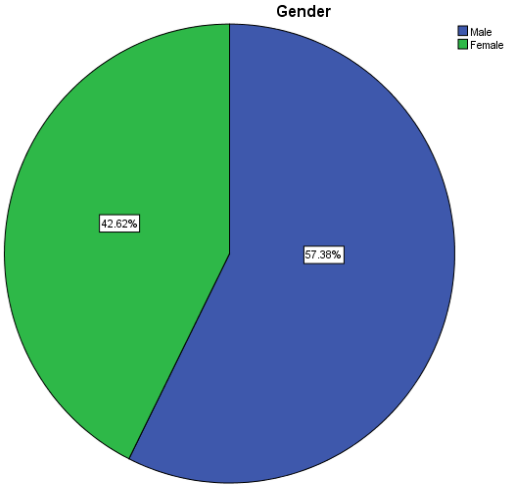
Location of stone		Frequency	Percent
Valid	Right Kidney	17	27.9
	Left Kidney	12	19.7
	Right Ureter	13	21.3
	Left Ureter	3	4.9
	None	16	26.2
	Total	61	100.0

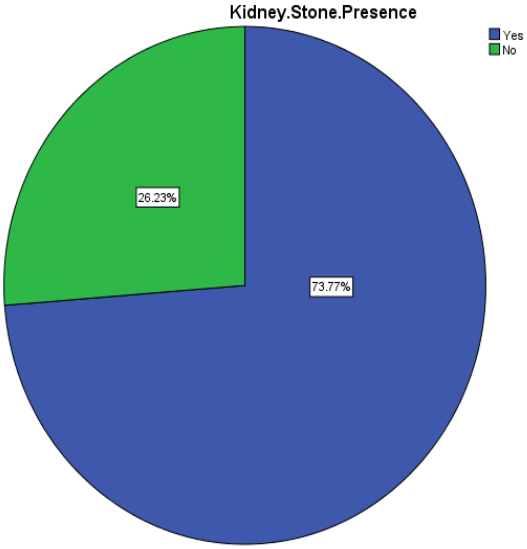
Table 4 Number of stones

No of stones	Frequency	Percentage
0	16	26.2
1	43	70.5
2	2	3.3
Total	61	100.0

Table: -5 Hydronephrosis

Hydronephrosis		Frequency	Percent
Valid	Absent	38	62.3
	Right Sided Hydronephrosis	11	18.0
	Left Sided Hydronephrosis	12	19.7
	Total	61	100.0





DISCUSSION

In recent years the extensive use of ultrasound imaging for the diagnosis of renal disorders has resulted in an increase in the detection of kidney stones. In this study , we focused on the ability of ultrasound imaging to detect kidney stones and associated problems such as hydronephrosis .

According to this study out of 61 patients that are reported with flank pain kidney stones are present in 45 patients. This study found that out of 100% patients that are reported with flank pain hydronephrosis is present in 37.7% patients. Kidney stones were also shown to be more prevalent in man than in women. However, the incidence of kidney stones is most common in the age group of 21 to 30 years that may be due to dietary factors.

Dietary variables assume a significant part in the development of kidney stones. Animal protein consumption has been shown to increase the amount of calcium, oxalate and uric acid excreted in urine [12- 14] subsequently inclining toward kidney stones.

We observed that more prominent pervasiveness of kidney stones was decidedly connected with age. Similar discoveries have been accounted for in the United States of America, Germany, Iceland, and Iran. [15–17,18] The explanations behind this peculiarity may include changes in dietary propensities, way of life and metabolic anomalies. Additionally, we likewise observed that kidney stones were

more common in men than in women, in concurrence with different examinations [16-18, 11-13]

Limitations

The study's weaknesses include a limited sampl e size and lack of the
supportive data which could have been achieved by using some other modalities such as CT scan.

CONCLUSION

The use of ultrasound in the identification of kidney stone is very important. The place of the stone is primary variable for its identification by ultrasound imaging. Right site kidney stone was the most widely recognized site of the identified stones. Ultrasound uses no radiations, generally modest, all around accessible, and easily applicable with high symptomatic exactness.

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