



Observational Study to evaluate the role of Ultrasonography and X-Ray in Urinary Disease

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ABSTRACT

Urinary diseases are very common in our society which system constitutes kidneys ureters urinary bladder and urethra various abnormalities occur in these organs due to many reasons like infection inflammation metabolic abnormalities neoplastic changes trauma etc. these abnormalities lead to various physical problems ending into death many times the abnormalities of urinary system can be diagnosed by hematological examination urine analysis radiological examination and histopathological examination especially radiological examination provide wide range of diagnosis of disease of urinary system of almost all origin although various radiological technique like X-ray (plain and contrast) Ultrasonography CT scan MRI and many others are available but in present study X-ray (plain and contrast) and ultrasonography were used for diagnosis of disease of urinary system because of its easy availability and affordability the diseases of urinary system has been described under the name of Mutrakrichha and Mutraghata in ayurveda these two conditions are in fact group of clinical entities in which urination is difficult and retention is present respectively further they are divided into various subtypes these conditions resembles clinically with various types of urinary diseases early diagnosis has been the always advocated by ayurveda by virtue of this prevention and management becomes easy in the present study written informed consent has been taken from all the patients early detection of these conditions facilitates the management otherwise renal failure may complicate the condition.

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INTRODUCTION

It is an established fact that urinary disease is showing an increasing incidence all over the world as more & more cases are being detected these days due to the help of improved diagnostic modalities. According to WHO, urinary tract disease contributes 830000 mortality and 18467000 disability annually means approximately 1.4 % of total death and 1 % unsatisfied life because of disease-related to urinary tract. Chronic renal disease also associated with the disease of cerebrovascular or cardiovascular disease and death due to their complication (Hostetter, 2004).

Male and females are both effected equally by renal

disease. (Coresh *et al.*, 2003). More than 30 % of diabetic patients develop diabetic nephropathy (King *et al.*, 1998). Approximately 1.5 million people depend on renal replacement therapy (Weening, 2004). With the help of molecular, biochemical activity and gene sequencing technology, urinary tract disease identifies easily. It has a prevalence of 1 in 1000 people and affects more than 10 million people worldwide. (Grantham, 1997). Urinary tract diseases divided into a complicated and uncomplicated example of uncomplicated are cystitis seen more in females (Ronald *et al.*, 2001). It contributes 5 to 8 people per 10000 annually. (Foxman, 2003). Whereas complicated urinary tract, especially in developing countries, are obstructive or nephropathy leads to urinary schistosomiasis (Bar-soum, 2003). In an Industrial belt, a common cause of urinary tract disease is renal stone (Morton *et al.*, 2002). Occur more in developing countries affecting 1 in 1000 people annually (Robertson, 2003). Some symptoms commonly associated with renal stones are decreased urine volume, hypomagnesuria, hyperuricosuria.

The aggravating factor which increases the chance of occurrence of the disease is oxalate-rich food, metabolic disorder of cysteine result in low protein, low calcium, low water intake play a key role in the development of renal stone. The causes of an increase in stone formation in children are due to the use of cereal food. Patients with the urinary disease are quite common in clinical practice. In Ayurveda the etiology of mutravikara describe in charak chikitsa are tikshna aushada Seva (Taking strong medicine), rukcha anna (dry meal), atimadhyapaan (excessive intake of alcohol), aanupa Mansa Sevan (meat of marshy animals) adhyashana, ativyayama, ati maithuna, prish-tayana (rigging) (Sastri, 2004). Sushruta and Charaka describe eight types of mutrakricha. Due to this etiology, it vitiated dosha, which effects Basti and causes derangement of mutramarg lead to mutrakricha. Some common causes of urinary disease are like calculi, ureteric stricture, tumor, B.P.H., etc. In this study, we have taken 100 cases which are come for investigation in a section of Radiology (Indian medicine).

Aim

The main aim of this study is to assess the clinical presentation in various urinary disease & evaluation of urinary disease case through ultrasonography & Radio Diagnostic (I.V.P)

MATERIALS AND METHODS

In this study, we have taken 100 cases that came for investigation in a section of Radiology (Indian medicine).

Inclusion criteria

Patients having complained of urinary tract symptoms were randomly selected irrespective of age and sex etc.

Exclusive criteria

Patient with uncontrolled diabetic, hypertension, tuberculosis, etc

Intravenous Urography

The intravenous urogram is the classic routine investigation of urology. The main indication of I.V.P is for renal & ureteric calculi, ureteric fistulas, stricture & complex urinary tract infection (including tuberculosis) (3). The IVU consist of a series of plain film taken after administration of an intravenous injection of water-soluble iodine-containing contrast medium patient was prepared with a period of 4 hr starvation & fluid deprivation & the bowel purged with a strong laxative.

Ultrasonography

Ultrasound used on transmission of a sound wave with a particular frequency. Through body structure & ultimately, the formation of images on a computer screen through reflected wave formation of images or echogenicity depend on how much ultrasound wave absorb or reflect through tissue (4).

Observation & Result

In this study, a total of 100 patients were studied in which there were 57 male & 43 females, the showing was the predominance of urinary disease in males than females with the male: female ratio 3:2.

Out of 100 studied patients, 23% were asymptomatic. 34% of patients presented with having symptoms of pain in the abdomen, 22% were having complaints of anuria and 21% suffering from dysuria. (Table 1)

In this study, a total of 100 patients were studied either by IVP & ultrasonography or one of the procedures as required. Out of these 100 patients 24 patients (24%) has Calculus, 20 Patients (20%) had prostatic hyperplasia/mass, 13 patients (13%) had urethral stricture, 10 patients (10%) had cystocele/uterine prolapse & 10 patients (10%) has PUJ obstruction, 07 patient (7%) had Trauma, 06 patient (6%) had infection, 5 patient (5%) has Tumour, 05 patient (5%) had papillary necrosis. (Table 2)

Table 1: Number and percentage patients according to symptoms of diseases

S. No.	Symptoms in patients	Number of patients and percentage		Percentage and total number of Patients
		Male Patient	Female Patient	
1.	Asymptomatic	13(13%)	10(10%)	23% (23)
2.	Dysuria	12(12%)	09(9%)	21% (21)
3.	Pain in right or left lumbar & pelvic region	20(20%)	14(14%)	34%
4.	Anuria	12(12%)	10(10%)	22%
	Total	57(57%)	43(43%)	100%

Table 2: Diseases wise number and percentage of patients in the study group

S. No.	Name of urinary disease	Sex wise number and percentage of patients		Total Patients and percentage
		Male Patients	Female Patients	
1.	Urethral structure	09 (9%)	04 (4%)	13(13%)
2.	Stones	12(12%)	12(12%)	24(24%)
3.	PUJ obstruction	06(6%)	04(4%)	10(10%)
4.	Papillary necrosis	03(3%)	02(2%)	05(5%)
5.	Infection stricture	04(4%)	02(2%)	06(6%)
6.	Prostate problems - prostatic hyperplasia & Prostate Cancer	20(20%)	00(0%)	20(20%)
7.	Trauma	02(2%)	05(5%)	07(7%)
8.	Gynaecological cases- Cysto-coele, uterine prolapse	00(0%)	10(10)	10(10%)
9.	Tumour - Renal cell carcinoma	02(2%)	03(3%)	05(5%)
	Total	58(58%)	42(42%)	100(100%)

CONCLUSION

The commonest Obstructive uropathies observed in the present study was calculi (24%) following by B.P.H. (20%)

The comments mode of presentation of patients was a pain in the right or left lumbar & Pelvic region. Although many advance techniques are also available, the technique used in the study is simple, safe, effective and widely available for diagnosis of urinary disease.

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