

## Original Research Article

# Renal stone disease: reasons for non-acceptance of surgical treatment among population of Western Rajasthan, India

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### ABSTRACT

**Background:** Renal stone is a common disease in Western Rajasthan. The aim of this study was to identify the causes of patient with renal disease for opting alternative methods for treatment instead of surgical approach.

**Methods:** A prospective study was conducted at the Department of Urology, Dr. SN Medical College, Jodhpur, Rajasthan between August 2018 and July 2019. Patients with diagnosis of complicated renal stone disease including infected hydronephrosis, pyonephrosis, and calyceal rupture were enrolled in this study. Along with demographic characteristics patients were asked to enumerate causes for delay in seeking surgical intervention in sequential order and the reasons given by each patient were recorded separately.

**Results:** A total of 80 patients with complicated renal stone disease were included in the study. Majority of the patients (77.50%) were men. Out of 80 patients, 32 patients were illiterate and 28 patients had primary level of education. Sixty-two patients reported only single reason for their negligence. Eleven and three patients reported two and three reasons, respectively. However, four patients could not provide any reason. The major cause reported by the patients (57.5%) for neglecting their disease was dependence and trust on alternative methods including ayurvedic medicines, homeopathic medicines, bhopas, and superstition.

**Conclusions:** The majority of patients were belonged to lower socioeconomic class reported that dependence and trust on alternative methods including ayurvedic and homeopathic medicines are the major cause of neglecting their disease.

**Keywords:** Complications, Renal disease, Socioeconomic, Surgical treatment

### INTRODUCTION

Renal stone disease is growing public health concern and it can be a serious problem if left untreated. The prevalence of renal stone disease varies worldwide. Major occurrence of renal disease in Western countries including United Kingdom, some parts of Northern Australia and central Europe, and some Asian countries including parts of Malaysia, China, Pakistan, and Western India.<sup>1</sup> In India there is wide regional variation among the occurrence of renal stone. Stone formation is more common in north India. Northwestern region of India identified as a part of stone belt in Asia.<sup>2</sup> The epidemiology of renal stone varies

according to age, sex, environmental, socioeconomic, and geographical factors. The pattern of incidence of renal stone in Western India in terms of age and sex did not differ from other parts of the countries.<sup>2</sup>

The major causative factor in Western Rajasthan is climatic conditions such as hot and dry climate and limited drinking water. Furthermore, renal disease is more common in patients with lower and middle socioeconomic status due to lack of health awareness.<sup>3</sup>

Few studies have reported the incidence of renal stones disease in north India in terms of composition of renal

stones, food intake, socioeconomic and environmental factors, and drinking water.<sup>4,6</sup>

However, in the present study an attempt was made to identify the causes of patient with renal disease for opting alternative methods for treatment instead of surgical approach.

## METHODS

This was a prospective study conducted at the Department of Urology, Dr. SN Medical College, Jodhpur, Rajasthan, India between August 2018 and July 2019. The study protocol was reviewed and approved by the institutional ethics committee. The study was conducted in accordance with approved protocol and the ethical principles that have their origin in the Declaration of Helsinki. A written informed consent was obtained from each study participants before participation in the study.

Patients with diagnosis of complicated renal stone disease including infected hydronephrosis, pyonephrosis, and calyceal rupture were enrolled in this study. The patient should be aware of his/her stone requiring surgery from at least a year and the requirement of surgery must have been explained to him/her by a licentiate practitioner of modern medical science with the degree of at least MBBS or above were included. The patients who may have undergone any sort of surgical intervention for renal stone disease in the past were excluded from this study.

Detailed medical history and demographics (age, sex, education, and occupation) were recorded. Patients were verbally communicated that their renal stone (of which they were aware of since long time) has now caused complication for which an intervention is a must. They were also made aware about the likelihood of decreased renal function or even total loss of the affected kidney. After that, they were asked to enumerate causes for delay in seeking surgical intervention in sequential order and the reasons given by each patient were recorded separately.

The qualitative data were expressed as number and proportions.

## RESULTS

A total of 80 patients with complicated renal stone disease were included in this study. The majority of participants (n=62) were men and 18 were women. All patients were adults (older than 20 years). The majority of patients (52.50%) were between 40-60 years of age (Table 1). Out of 80 patients, 32 were illiterate, 28 patients had primary level of education, 13 patients had secondary level of education and seven patients had graduation or above education.

Sixty-two patients reported only single reason for their negligence. Eleven patients cited two causes and three patients cited three reasons where four patients could not

provide any reason. Most of the patients were farmer (28.75%) followed by housewife (22.50%), labor (18.75%) and unemployed (16.25%).

**Table 1: Patients characteristics.**

Parameter	Number of patients (N=80)	
Sex	Men	62 (77.50)
	Women	18 (22.50)
Age (Years)	20-40	11 (13.75)
	40-60	42 (52.50)
	60 and above	27 (33.75)
Literacy rate	Illiterate	32 (40.00)
	Primary	28 (35.00)
	Secondary	13 (16.25)
	Graduation and above	7 (8.75)
Occupation	Businessman	5 (6.25)
	Farmer	23 (28.75)
	Housewife	18 (22.50)
	Labor	15 (18.75)
	Service	6 (7.50)
	Unemployed	13 (16.25)
Data shown as n (%).		

The major cause reported by the patients (57.50%) for neglecting their disease was dependence and trust on alternative methods including ayurvedic medicines, homeopathic medicines, bhopas, and superstition (yantra-manta and tantra). Few other patients (15%) had a fear of getting operated, 11.25% patients reported monetary shortage and remaining 7.50% reported abstinence from occupation as the top cause for delaying the surgical approach. However, 3.75% patients did not trust doctors who suggested surgical treatment.

## DISCUSSION

The present study was conducted to identify the causes for non-acceptance of surgical treatment for renal stone disease, leading to complications. The key findings reported that most of the patients due to several reasons do not prefer surgery as the first choice of treatment for renal stone disease and end up with complications like infected hydronephrosis, pyonephrosis, calyceal rupture, perinephric abscess, diminished renal function and renal loss due to longstanding obstruction.

Poverty and inaccessibility to healthcare services have always been the major causes of negligence of disease not only in Western Rajasthan but also throughout India. However, due to availability of free medicine and free investigation scheme in Rajasthan from last decade at government hospitals, operative cost is almost no more a barrier. Due to widespread publicity through mass media and other sources by government agencies, these schemes are already well known to all people even if in remote areas of Rajasthan, so unawareness is also not a reason to avoid

surgery. Furthermore, in the present study, patients who were already aware of their disease and the requirement of surgery were enrolled. So, this inclusion criterion removes the bias of poverty and inaccessibility to healthcare as a cause of negligence from patient side.

In this study, majority of patients were men presenting with complicated renal stone disease compared to women. In developing countries like India, Iran, Iraq and Saudi Arabia prevalence rate of renal stone is higher in men.<sup>4,7-9</sup> However, Scales et al. reported that the prevalence rate of renal stone among women has been increased in last decade.<sup>10</sup>

There is an association of literacy level and incidence of complicated renal stone disease among only 8.75% patients who were educated up to graduation and above. The literacy rate in Rajasthan is 67% as per 2011 census.<sup>11</sup> In the present study, nearly 40 % patients were illiterate. Thus, education level seems to have a significant impact on incidence rate of patient presenting with complicated renal stone disease. However, once the patient has consulted about his disease to a doctor, literacy level does not contribute significantly to incidence of negligence towards the disease from patient point of view.

In current study, occupation of the patients was also closely related with the occupation of the people from the rural areas of Western Rajasthan. The incidence rate of complication was higher in unemployed, farmer and labor group and lower in service and business class. Present study revealed that renal stone is more frequent in lower and middle socioeconomic groups. Similar results were obtained by Barjatiya et al. showing higher incidence in tribal people in Rajasthan working in mining environment.<sup>12</sup>

Print and electronic media are flooded with advertisements claiming the treatment of renal stone diseases irrespective of their size and duration. Some of the television channels are entirely devoted to these alternative medicine treatments, claiming treatment for almost every existing disease. Renal stone disease is one of the major chunks. Furthermore, some surgeons validating only operation for small renal stone have also led to reduced trust amongst general population. In the present study, few patients were also reported no trust on surgeons is one of the reasons for delaying the treatment.

There was very limited evidence available on the use of other treatment options over the surgical treatment to manage the renal stone. A randomized study reported the use of ayurvedic medicine in the management of renal stone. It was concluded that ayurvedic medicine like *Phyllanthus Niruri* holds a promisable place as an alternative for surgical treatment in case of patients with small size renal stone.<sup>13</sup> Likewise, Anisur KB reported that homeopathic medicine can be helpful in the management of renal stones without surgical intervention.<sup>14</sup> The present study results were in accordance with the above mentioned

studies showing use of ayurvedic and homeopathic medicine by majority of patients as an alternative to surgery. Most of the patients, although aware of their disease and its surgical requirement, were still apprehensive of duration of operation, mode of anesthesia and pain during operation. Nevertheless, appropriate patient counseling on first expert consultation, regarding patient pre, post and intra operative queries may improve acceptability of surgical approach by patients.

Public awareness programs regarding renal stone disease and its complications needs to be strengthened. Patients should be made aware about the limitations and complications of alternative methods in renal stone disease. False advertisements need to be legally made a punishable offence.

This study was limited by small sample size of the population.

## CONCLUSION

Authors observed that majority of patients using alternative medicine belonged to lower socioeconomic class. However, counseling and awareness among them would make them adopt surgical approach without delaying treatment and avoid complications.

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