

# Silent Kidney Stones Diagnostic Modalities in Albania

Islam Mamica

Radiologist, Service of Radiology, Burrel General Hospital, Burrel, Albania

## ABSTRACT

### Objective:

Silent and not yet discovered stones of the upper urinary tract are potentially dangerous since in due course they may cause infection, obstruction and renal damage. The aim of this study was to determine the incidence of such silent kidney stones in a representative population of Mat region - Albania

### Subjects and Methods:

There were included in the study 200 consecutive subjects at Radiology Service, Burrel Hospital that underwent an additional kidney screening while undergoing abdominal ultrasound. All these subjects did not have a history or symptoms of urolithiasis.

### Results:

There were found silent kidney stones in 3% of 200 subjects that went through, 80 % (n=160) of them were from age 20-70 years old. Notably, multiple stones and stones of a considerable size were without symptoms.

### Conclusions:

In addition to the usual figures of incidence and prevalence of stone disease drawn from patient data, there is an incidence of 3% silent stones that may only be discovered incidentally or by screening. This is part of water elements that is characteristic for the region. Figures for other regions have yet to be determined. There is enough data that show the consequences of kidney stones if neglected. Awareness to the population and regular ultrasound screenings would be beneficial.

**Keywords:** *kidney stones, incidence, ultrasound*

## INTRODUCTION:

Kidney stone disease is a global common problem with an enormous socio-economic impact [1]. Amongst other countries, Albania has a considerable incidence of this problem, where kidney stone patients represent the significant number of all urological patients. In our institution, namely; Service of Radiology, Burrel General Hospital, more than 50% of all urological patients are kidney stone patients. To date, it is not known how exactly stones form in the renal system and how rapidly they may grow to a clinically significant size. Stones may be clinically silent for a long time. However, when they grow beyond a size of spontaneous clearance through the urinary tract, they may cause infection, obstruction, permanent kidney damage, and finally loss of the kidney.

Therefore, it would be most helpful to find stones in early stages of their growth, where they are not yet clinically symptomatic. An easy to use, harmless and accurate means for such a screening would be a renal ultrasound. However, to assess the cost effectiveness of such a screening, the expected incidence of silent stones to be detected by ultrasound screening has to be established first, and national universal guidelines should be in place.

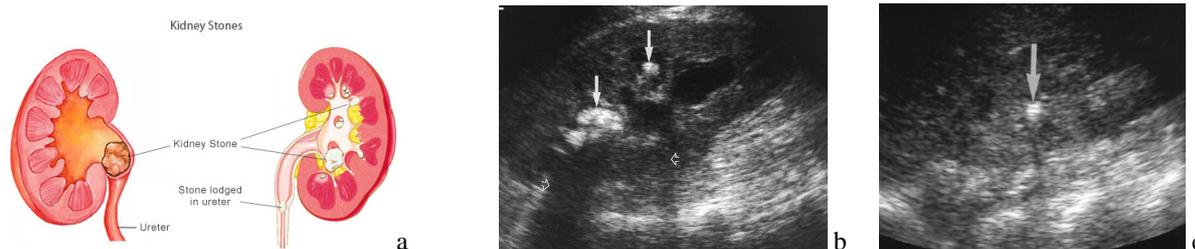
## SUBJECTS AND METHODS:

In this prospective study that was conducted at our Radiology Service, Burrel General Hospital, Burrel, Albania during last two years, 200 consecutive adult patients who underwent an abdominal diagnostic ultrasound at our institutions. Patients with known kidney or urinary stone diseases were excluded from the study. All ultrasounds were performed by one experienced radiologist - sonologist to exclude inter-observer variation. Age, gender, the indication for ultrasound, any pathological finding, and, in particular, of urolithiasis, were recorded. In patients in whom a stone was discovered, urine analysis and X-ray data were matched with the ultrasonographic finding of urolithiasis.

## RESULTS:

Our data showed that in 3 % of 200 subjects that underwent in abdominal ultrasound scan were found silent kidney stones. There were noted multiple stones of considerable size were without symptoms. There were observed that 80 % (n=160) of all 200 subjects were from age 20 – 70 years old. Also, should mention the fact that 75 % of stones were found in left kidney. As per gender aspect, it was found that 65 % of them were male gender. Figure 1, a – anatomic diagram, b and c – kidney stone by ultrasound.

Figure 1, a, b, c. Anatomic illustration and ultrasound findings of kidney stones



## DISCUSSION:

Nowadays, the lifetime chance for an individual to have a stone is estimated at approximately 10-15 % [1]. The prevalence of urinary stone disease is estimated at 2-5%.5 It has an enormous socio-economic impact through treatment and recovery related costs, time lost from work, and attendant morbidity [1,2].

This is particularly true for countries like Albania, where more than 50 % of families may crucially depend on one earner whose morbidity may mean an economic impact. Stone disease accounts for more than a third of all urological admissions at our university hospital. There is a known high incidence of stone disease in Albania as this country belongs to the so-called stone-belt.

In and around Mat Region of Albania we do have a heavy water and there is not done much of such regular testing and other means of filtering. Additionally, dietary factors may play an important role, with our population consuming a lot of animal protein and related lithogenic substances.

Urinary stones have the potential for becoming clinically symptomatic and could lead to infection, obstruction, renal damage, and, in the worst scenario, to the loss of a kidney. This, however, might be effectively prevented if potentially significant stones could be detected prior to the onset of symptoms and be treated appropriately. On the background of a general increased risk of stone formation for our population, is attempted to assess, therefore, the incidence of clinically silent and yet undiscovered stones in order to assess whether screening for renal stones would be justified, and a national universal guidelines should take place [3, 4].

Such a screening would have to be done using a reliable, reproducible, cost-effective, easily available and easy to handle method of examination that does not utilise ionising radiation. That makes ultrasound the method of choice [5].

## CONCLUSIONS:

In addition to the usual figures of incidence and prevalence of stone disease drawn from patient data, there is an incidence of 3% silent stones that may only be discovered incidentally or by screening. This is part of water elements that is characteristic for the region. Figures for other regions have yet to be determined. There is enough data that show the consequences of kidney stones if neglected. Awareness to the population and regular ultrasound screenings would be beneficial.

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