Recent searches in

RECURRENT URINARY CALCULI

Essay

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master degree in Urology

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Introduction

INTRODUCTION

Recurrent urinary calculi is that stone that recur after surgical or endoscopic removal of the stone or fragmentation of the stone with ESWL. The common site for recurrence is the kidney itself but it my also occur at anywhere including the bladder. (**Sun et al, 2007**)

During the last ten years, the overall adjusted relative recurrence rate (ARRR) is 35.3%. The importance of an exact physical analysis of urinary stones, involving a differentiation of the various Ca oxalates and Ca phosphates, becomes clear looking at the high recurrence rates for the monomineralic stones of the Ca stone. Dramatic changes in the composition of the recurrent stone were observed only in 12.7% of all cases. The highest ARRR was found in infection stones with a large content of struvite (about 75%), whereas the total recurrence rate of the infection stone class was about 38%. An assessment of the danger of a urinary stone taking into account the criteria of composition and prevalence to recur is given. (**Leusmann et al 2005**)

Risk factors for recurrent stones includes: hot climate, diet types, infection, parathyroid gland diseases, low urine volume,

elevated urinary oxalate excretion, elevated urinary calcium excretion, elevated urinary uric acid excretion , Low urinary level of inhibitors of stone formation, particularly citrate , Low or high urine pH , Urine stasis and infection . (**J y et al, 2003**)

The use of antibiotics significantly affected the incidence of recurrent struvite calculi. In particular, if prolonged prophylactic antibiotics (greater than 3 months) were used 15 percent of the patients had recurrent stones, compared to 90 percent if only preoperative antibiotics less than 15 days were used with p less than 0.001. (**Jiaan et al 2006**).

Metabolic evaluation of patients with nonstruvite calculi revealed that 76 percent had an identifiable metabolic abnormality, treatment of which significantly decreased the incidence of recurrent renal calculi: 17 percent of the patients on interventional therapy had recurrent stones compared to 55 percent treated by observation alone .(**Sutherland et al, 2002**)

It was always presumed that ESWL would increase the risk of calculus recurrence. The cause was thought to be persistent small calculus fragments after ESWL.

Prevention strategies to prevent recurrence of stones are: - increase fluid intake to produce 2–3 L of urine daily, decrease dietary oxalate (spinach, rhubarb, chocolate, nuts and cranberries), decrease intake of animal protein, restrict sodium (< 100 mmol/d [2–3 g/d]) rather than calcium (should be 1 g/d).

Evaluations of patient with recurrent stone formation (and all children) are Twenty-four hour urine collection: volume, pH, and levels of calcium, phosphorus, sodium, uric acid, oxalate, citrate, creatinine, calcium oxalate (super saturation), calcium phosphate and uric acid. (**Huet et al 2005**)

The management of recurrent urinary stone includes prophylaxis against recurrence or treatment of already recurrent stone surgically. Examples of the drugs used in prophylaxis are thiazides, potassium citrate and allopurinol (Zyloprim) and the use of this prophylactic medical therapy produce resultant significant reduction in urologic procedures and hospitalizations per patient per year. Given the proven benefit of prophylaxis.

(**Jt et al, 2004**)

AIM OF THE WORK

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This review is a trial to spotlight on the recent data and Researches on

(RECURRENT URINARY CALCULI)

As regards.

1 - Epidemiology..

2 – Pathogenesis of urinary stone formation.

3 – Risk factor of urinary stone recurrence.

4 - Evaluation of the Patient.

6- Prevention of urinary stone recurrence.

7– Management.

Epidemiology

Kidney stones (called renal calculi in medical terminology, from Latin ren, renes, "kidney" and calculi, "pebbles"), are solid concretions (crystal aggregations) formed in the kidneys from dissolved urinary minerals. The terms nephrolithiasis and urolithiasis refer to the condition of having calculi in the kidneys and urinary tract, respectively. Bladder stones can form or pass into the urinary bladder. Ureterolithiasis is the condition of having a calculus in the ureter.

Recurrent urinary calculi is that stone that recur after surgical removal of the stone or fragmentation of the stone with ESWL. The common site for recurrence is the kidney itself but it my also occur at anywhere including the bladder.

(**Wrong et al, 2005**)

There are several types of kidney stones based on the type of crystals of which they consist. The majority are calcium oxalate stones, followed by calcium phosphate stones. More rarely, struvite stones are produced by urea-splitting bacteria in people with urinary tract infections, and people with certain metabolic abnormalities may produce uric acid stones or cystine stones. (**Lloyd et al,2007**)

About 10% of all people will have a kidney stone in his or her lifetime. Kidney stones are most common among:

- Caucasians
- Males
- People over the age of 30
- People who have had kidney stones previously
- Relatives of kidney stone patients

Recurrent urinary stones occur in all parts of the renal collecting system. The sites of recurrence and formation are not necessarily identical. In the industrialized part of the world,

- 97% of all recurrent urinary stones are localized in the: parenchyma –pelvis- papilla- calices – ureter.
- Only 3% are found in the bladder and the urethra.

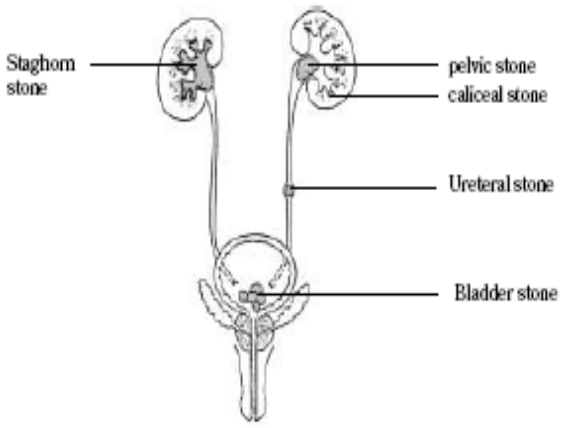

Fig 1

site of recurrent urinary stones

(Leusmann et al 2005)

Recurrent Stones vary in size from too small to be seen with

the naked eye to 1 inch (2.5 centimeters) or more in diameter. A large so-called staghorn stone may fill almost the entire renal pelvis and the calices that drain into it.

The recurrence rate which depends on the stone composition is in untreated patients 50–100% and in treated patients 10–15%.

During the last ten years, the overall adjusted relative recurrence rate (ARRR) is 35.3%. The importance of an exact physical analysis of urinary stones, involving a differentiation of the various Ca oxalates and Ca phosphates, becomes clear looking at the high recurrence rates for the monomineralic stones of the Ca stone. Dramatic changes in the composition of the recurrent stone were observed only in 12.7% of all cases. The highest ARRR was found in infection stones with a large content of struvite (about 75%), whereas the total recurrence rate of the infection stone class was about 38%. An assessment of the danger of a urinary stone taking into account the criteria of composition and prevalence to recur is given .

(**Leusmann et al 2005**).