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The study "incidence of urinary calculi in abdominal pain cases", included 200 cases presenting with urinary symptoms.

In our study the urinary calculi were found to be 73% cases showing chronic abdominal pain and urinary symptoms.

Calabawati (1971) in a survey found an overall incidence of urinary calculi in patients admitted with chronic pain in abdomen in the hospital was 50.6%.

In the present series the peak age incidence of urinary calculi was seen in the age of 41-50 years.

BRACH observed peak age incidence of urinary calculi in third to fifth decades.

Blacklock, 1969; Bailey et al 1974; Burkland and Rosemary, 1959; they all agree the peak age incidence of urinary calculi between 30-50 years.

Occurrence of urinary calculi were common among males than females. In our study male cases were 136 (68%) whereas female cases were 64 (32%). The urinary calculi among male cases were seen in 66.3%. Coe (1977) reported 67% of renal calculi in the males.

It is well established that high mineral content of water contribute to the increase prevalence of stone diseases. In the present study the population using the well water (57.5%) suffer more calculi
formation than the tap water (low mineral content) 22%

Churchill et al (1958), Shuster et al (1962) after
detailed study described that excessive water hardness
contribute to the excessive calculi.

Different type of food and dietary habits plays an
important role in the formation of urinary calculi. The
urinary calculi were common in the vegetarian population
(56%) in the present series.

Holmes (1971) in the study of Fijians found that
curries, spices and pickles are more responsible for
urinary calculi formation. He believed that curries
contain volatile oil which are nephrotoxic. "Curry
Kidney", as these causes have been called, is analogous
to 'Worcestershire Sauce Kidney' described by Murphy
(1947). However, unlike the Worcestershire sauce
kidney (where the renal damages is associated with
aminosiduria), the curry kidney cases do not show
any aminosiduria (Johnson and Holmes, 1976).

Suvashittanet et al (1973) found that in Thai land
population, vegetarian diet is more responsible for
stone formation (50%).

In the present study the urinary calculi were
common among middle and low socio-economic population
48.5% and 37.6% respectively.

Robertson et al (1979) performed the extensive
studies of the relationship between occupation, social
class and risk of stone formation. They confirmed that the risk of formation of calcium urinary calculi was increased in the most affluent countries, regions, societies, or individuals. These persons have more disposable income to spend on animal protein, which leads to increased urinary concentration of calcium, oxalate and uric acid. Hence it becomes difficult to assess whether occupation itself is a primary factor in stone diseases or whether it merely establishes other aspects of environment such as diet, heat exposure and water drinking alteration in these latter factors may than be the real instigators of urolithiasis.

The improvement of protein and carbohydrate ratio in the diet has decreased the incidence of urinary infection and stone formation. In Bundelkhand area being a backward region, the poor men’s diet is far below than the western countries, therefore our data do not correlate with the data of Robertson et al.

In our study common symptoms were pain off and on with vomiting 94%, pain in lumbar area radiating to back 47.3%, pain radiating to pelvis 17.5%, haematuria 39%, anuria 1.5%, dysuria and increased frequency of micturition 22%.

Norman reported moderate haematuria (more than 6-8 
RBCs per HPF) 57% in children and 40% in adults.
Campbell and Harrison found 43% haematuria in urinary calculi. Joly (1931) cited four types of obstruction that may be associated with calculus anuria: obstruction of both kidneys and ureters; the only functioning kidney, one kidney when the opposite kidney is deceased, or one kidney when the other is normal. Himmes stated that anuria may be caused by mechanical obstruction, renal insufficiency and a combination of obstructive and renal factors. White (1929) stated that anuria may occur "as a climax of a gradual but progressive renal failure resulting from long standing and extensive bilateral calculous disease occurring quite independently of renal occlusion".

In the present study 15% patients were anaemic (haemoglobin below 11 g%) 

Albumin in the urine was found in 3.3%. The oxalate crystals were present in 67%, phosphate crystals in 8% and large number of R.B.Cs were present in 40%.

Thomas Addis (1926) observed large number of ARCs in cases of urinary calculi. He observed each all of urine contain about 1000 ARCs as a upper limit.

In the present series renal calculi were seen maximum in the 5th decades and ureteric calculi were seen maximum in 4th decades and vesical calculi were maximum in 1st decade.
Campbell and Harrison observed renal lithiasis is a disease predominantly in 3rd and 4th decade. Higgins (1939) observed 69% of ureteral calculi occurred in patients aged from 20-50 years. The age incidence was similar in a series reported by Bumpus and Schell, July (1931) in England and France during the nineteenth century, vesical calculous disease was largely limited to childhood. Assendalfte, in a review of 630 collected cases, stated that 77% of bladder calculi occurred in patients less than 10 years of age.

In the present series renal and ureteric calculi were common among males than females as compared to vesical calculi which were common in females than males.

Campbell and Harrison observed renal and ureteric calculi occur much more often in men than in women. Jeebcroo (July, 1931) reported the ratio as 61% in men, 39% in women; Bumpus and Schell, 66% men and 34% women; Ravich, 69.8% men and 30.2% women. In the Cleveland clinic series of 607 patients, 79% were men and 21% women.

In our study the size of renal calculous was found to be in the range of 10-30 mm present in maximum number of cases (80.9%). The ureteric calculi ranging from 3-15 cm were seen in most of the cases. Only 2 cases of ureteric calculi were more than 3 cm in size. The vesical calculi ranging from 2-5 cm were found in most of the cases.
Campbell and Harrison observed the size of calculi ranging from few millimeters to 10 centimeters in length and width. Heath (1922) removed a calculus 2.5 by 15 cm that weighed 65.8 gm. Despite occasional reports of such giant stones, ureteral calculi are rarely more than 2 cm in length. Randall (1937) described a calculus weighing 1016 gm. The longitudinal circumference was 48 cm and the transverse circumference was 40 cm. The bulk of calculus was composed of calcium phosphate.

In our study bilateral renal calculi were found to be present in 13 cases (17.14%) and 7 cases (9.2%) showed both renal and ureteric calculi.

Higgins in his study observed bilateral renal calculi in 224 (14.8%) of 1500 patients. H. P. W. White reported 13.9% of bilateral cases in his series; Young 17% and Braasch (1936), 10%. Braasch (1936) also stated that ureteral stones were associated with renal calculi in less than 5% of the Mayo Clinic series. Baker conolly stated that the incidence of bilateral renal calculi was 6%.

Several observers including Braasch (1917), Buehler Kyeser (1934), Scholl (1936) and Quinby, have discussed the apparent relationship between infection of the urinary tract and calculus formation. In our study pyelonephritis was seen in 34 cases. In his critical review of 29 patients, Buehler elicited a history of a preexisting pyelonephritis in 22.
In the present series the pyelonephritis along with urinary calculi was found in 62.9%. Cystitis was present in 4.3%.

Malek (1976) was found 38% of renal calculi along with pyelonephritis and Anhalt et al (1971) was found upto 70%. Kutzmann (1931) was reported co-existence of calculi and pyelonephritis in 26 cases out of 33 cases.

In our study stretching and calyx was found in 33.75%, deformed calyces in 13.1%, loss of calyceal cupping in 9.2%. Hydrocalyx in 26.2% and hydropelvis in 10.6% cases.

In Mayo Clinic series (Timmons et al 1975), 39% of patients with calyceal diverticulum had calculi. Malek and Elder (1978) was found calyceal deformity in 46% cases of pyelonephritis. Elder (1978) observed amputation and stretching of calyx in 36.3% and loss of calyceal cupping in 8.4%.

Nausea, vomiting feeling of warmth flushing and transient pain in the injected arm were frequent side effect that usually have no clinical significance or relation to more serious contrast reaction.

In our study complications observed during pyelography were minimal in most of the cases. Only two cases were developed severe anaphylactic reaction presenting feeble pulse, hypotension and breathing difficulty which could be successfully managed by good and timely efforts.