MATERIAL AND METHODS
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The present study "Incidence of urinary calculi in abdominal pain cases" was carried out in patients who were attending in the department of Radiology and Surgery with the history of abdominal pain. The following criteria was used for the selection of the patients.

Selection of patients

The patients attending indoor and out patient departments of this college with chief complaint of chronic abdominal pain associated with urinary symptoms like hematuria, increased frequency of micturition, dysuria or anuria were included in the series.

Detailed history of the patients were taken in the following order:

- Name
- Age
- Sex
- Address
- Socio-economic status
- Family history
- Dietary history
- History of mode of drinking water

Chief Complaints and History:

- Pain
  - Site
  - Duration
  - Radiation
- Burning micturition
- Frequency of micturition
- Retention of urine
- Hæmaturia
- Fever
- Vomiting
- Any other complaint

EXAMINATION:
- General examination
- Abdominal examination

INVESTIGATIONS:
- Blood examination - TLC, DLC, MB, ESR,
  - Blood urea
- Urine examination - Albumin
  - Sugar
  - Microscopic examination
- Plain X-ray abdomen in AP view
- Intravenous pyleography

Following materials were used for this study:
- X-ray films of different size
- Cassettes
- X-ray machine, developer and fixer solution
- Illuminating box
- I.V. Contrast media - CONRAY 430 (May & Baker)
- Emergency tray
Preparation of patient for radiography

Preparation of the patient was done for plain
skull scan and intravenous pyelography, because
faeces and gases may obscure the urinary stone com-
pletely. Apart from it, low residue diet with mild cathartics
and restriction of fluid over night was advised. Few
patients required plain water enema three hours prior
to the investigation. In cases of children glycerine
suppository and antiflatulent (Neopectine drops and
syrup) were given prior to investigation.

Radiography

X-ray examination of the urinary tract was made
with the patient in the horizontal position using poster
Duckey Grid but on rare occasion the erect or sitting
position were made. Routine projections were antero-
posterior view, sometimes postero-anterior view, lateral
view, lateral oblique and lateral decubitus view.

A preliminary scout film was taken both for
demonstration of abnormalities and to establish whether
the preparation of the patient was adequate or not.

X-ray factors for exposure of not more than 1/2
second were desirable. In general, 70-80 KV were used,
but in infants, KV factors and exposure were reduced
accordingly. Focus film distance was 90 cm, film were
used of different sizes.
Sensitivity of the contrast media to the patient was done by injecting one ml contrast media intravenously. Patients were observed for any untoward reaction. CONRAY 620 (May & Baker) was used for IVP. Usually 20 ml contrast media in single dose was used. On any untoward effects, emergency procedures were adopted in certain cases by using oxygen inhalation and parenteral injection of corticosteroids, antihistaminics and cardias stimulants.

Exposures were made after 2, 7, 15 and 30 minutes for nephrogram, calyceal pattern and physiological function of urinary system.