

Case 113 A bladder stone found at autopsy



Figure 113.1

Figure 113.1 shows a calculus removed from the bladder at the postmortem performed on an old gentleman of 92 years. He had contracted gonorrhoea while serving as a soldier in France in World War I at the age of 22. This had been treated with irrigations of antiseptic fluid. By the 1930s, when he was working as an agricultural labourer, he had developed a urethral stricture and attended hospital as an outpatient for regular dilatations of the urethra with metal bougies at the 'stricture clinic'. Over subsequent years he had repeated episodes of urinary tract infection and also of retention of urine, on one occasion requiring a temporary suprapubic cystotomy. He eventually died in an old people's home from bronchopneumonia (which complicated his smoker's chronic bronchitis) as well as congestive heart failure and urinary infection. He had requested that his body should be used 'to assist medical science'.

At autopsy the bladder was thick walled, heavily trabeculated and chronically inflamed. The urine in the bladder was full of debris, had a strong fishy smell and contained the large calculus shown in Fig. 113.1.



Figure 113.2 Oxalate stone.

What is the likely chemical composition of this bladder stone?

It has the typical appearance of a calcium ammonium and magnesium phosphate ('triple phosphate') stone. It is greyish-white in colour.

Name the three other types of urinary calculi

- **Oxalate stones:** These are the most common, comprising about 60%. They are hard, with a sharp spiky surface, which traumatizes the urinary epithelium. The resultant bleeding often colours the stone a dark brown or black (see Case 108, p. 225). A typical example, removed from the bladder, is shown in Fig. 113.2.
- **Uric acid and urate stones (5%):** These are moderately hard, brown in colour and with a smooth surface. Pure uric acid stones are radiolucent but, fortunately, from the diagnosis point of view, usually contain enough calcium to show up on plain X-ray.



Figure 113.3 Cystine stone.

- *Cystine stones*: Found in patients with the congenital metabolic abnormality of cystinuria, these stones are rare (Fig. 113.3).

Under what circumstances do triple phosphate stones form?

This type of stone is found in infected and stagnant urine. It is, for example, the 'staghorn' calculus that forms in the pelvis and calyces of a pyonephrosis of the kidney (Fig. 113.4). This type of calculus may also form around foreign material left anywhere in the urinary tract – around non-absorbable sutures, a broken-off piece of catheter or any of the multitudinous strange objects such as hairpins or pieces of tubing that people may insert into their bladders.

What is the classical triad of symptoms that often occur in patients with bladder stone?

Urinary frequency, dysuria (pain on passing urine) and haematuria.

What special investigations are used to confirm the clinical diagnosis of bladder stone?

A plain X-ray of the abdomen often demonstrates the calculus because of its high calcium content. The X-ray in Fig. 113.5 shows a typical example – a large triple phosphate stone in the bladder of a North African woman who had previously had a vesico-vaginal fistula repaired. Cystoscopy enabled the stone to be directly visualized.

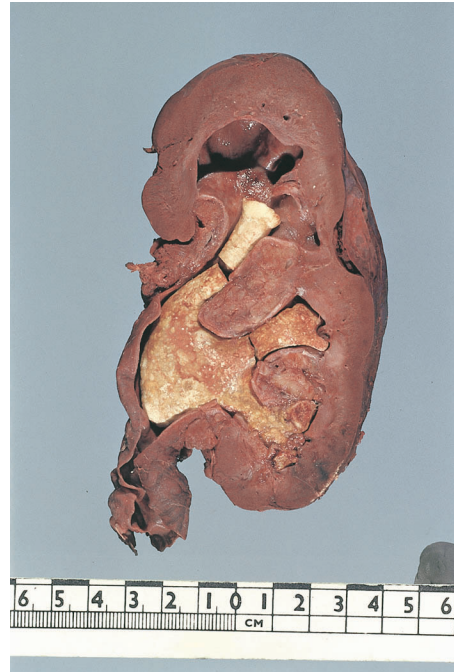


Figure 113.4 Staghorn calculus.

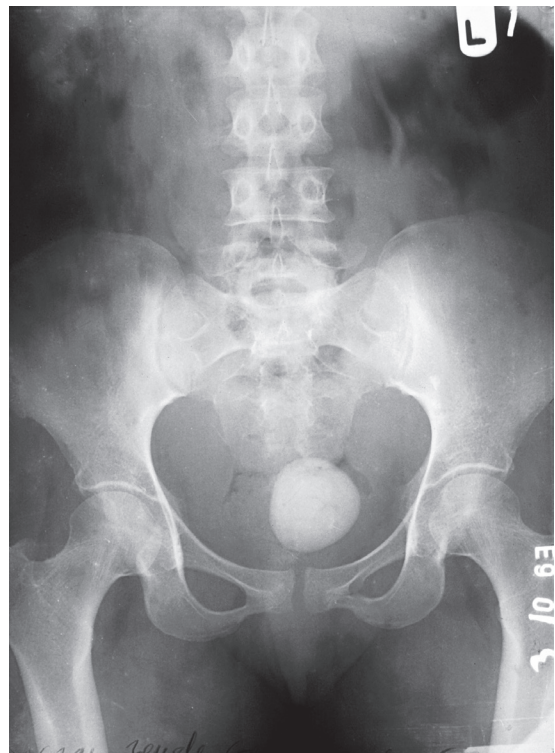


Figure 113.5 X-ray of a triple phosphate stone.