

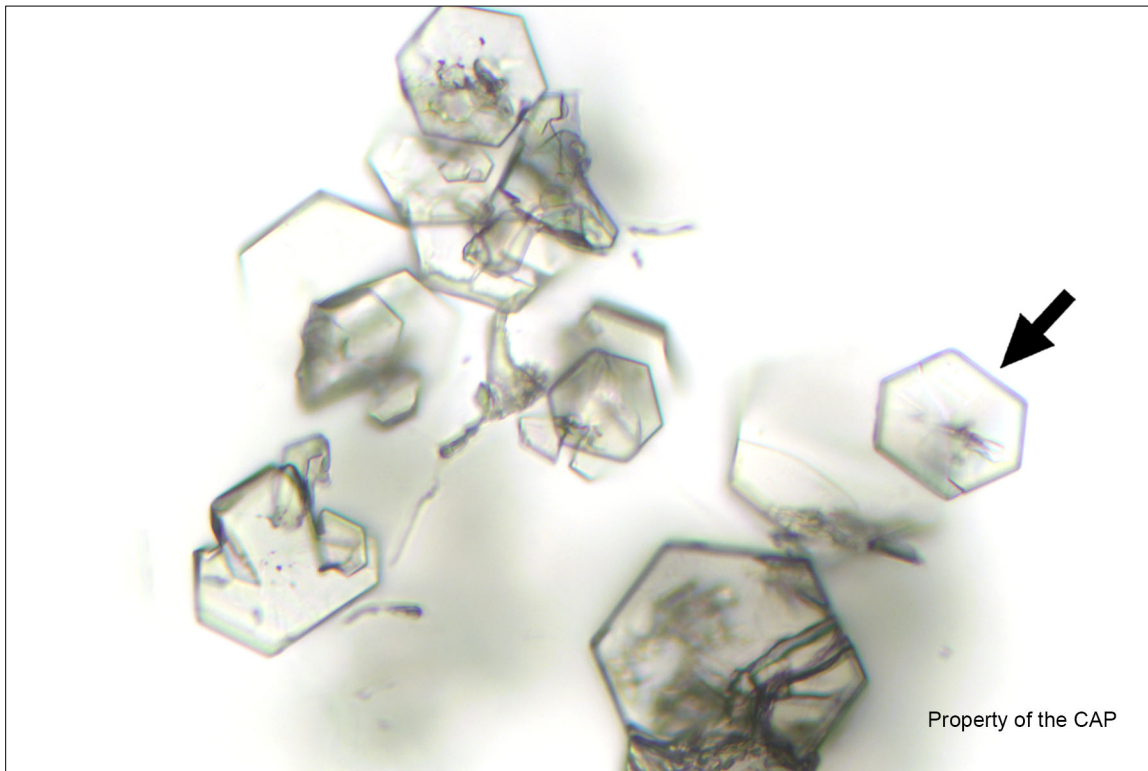
Urine Sediment Photographs

Case History CMP-04 through CMP-06

This urine sample is obtained from a 66-year-old woman with a history of recurrent kidney stones. Laboratory data include: specific gravity = 1.017; pH = 5.0; glucose, ketone, bilirubin, leukocyte esterase, nitrite, and urobilinogen = negative; protein and blood = positive. Identify the arrowed object(s) on each image.

(URINE, UNSTAINED, HIGH POWER)

CMP-04



| Identification | Participants | | Evaluation |
|------------------|--------------|------|------------|
| | Freq | % | |
| Cystine crystals | 5893 | 98.2 | Good |

The arrowed object is a cystine crystal, as correctly identified by 98.2% of participants. The cystine crystals in this unstained wet preparation are identified by their distinctive hexagonal shape and clear colorless appearance. These crystals are present in patients with cystinosis, a congenital autosomal recessive condition. They are also present in patients with renal stones. They can sometimes be confused with similarly shaped uric acid crystals. When in question, amino acid analysis can be used to confirm cystinosis.



EXPLANATION

The arrowed objects are uric acid crystals. Uric acid crystals are yellow to brown in color, strongly birefringent, vary in size and shape and are formed in acid urine. They may appear as 6-sided plates, needles, spears, clubs, stars or other odd shaped crystals. Usually seen in uric acid nephropathy and tumor lysis syndrome.