



Staghorn Renal Stone with Magnesium Ammonium Phosphates Crystals

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Clinical Image

A 73-year-old female presented with intermittent soreness over right flank and recurrent pyuria with bacteriuria noted by the urine analysis for about 10 years. The microscopic examination of her urine sediment disclosed typical triple phosphate (Magnesium ammonium phosphates) crystals with "coffin lid" shape (Figure 1a). The further computed tomography of the abdomen revealed a right-sided staghorn stone (Figure 1b). She will undergo surgical removal of this stone recently. Staghorn renal stones are large, branched stones that fill all or part of the renal pelvis and branch into the majority of the renal calices. Most staghorn stones are composed of pure struvite (magnesium ammonium phosphate) or calcium carbonate apatite. These stones are often referred to as 'infection stones' since they are strongly associated with urinary tract infections with urea splitting organisms. If left untreated, staghorn calculi may lead to deterioration of renal function, end-stage renal disease, and life-threatening urosepsis [1].

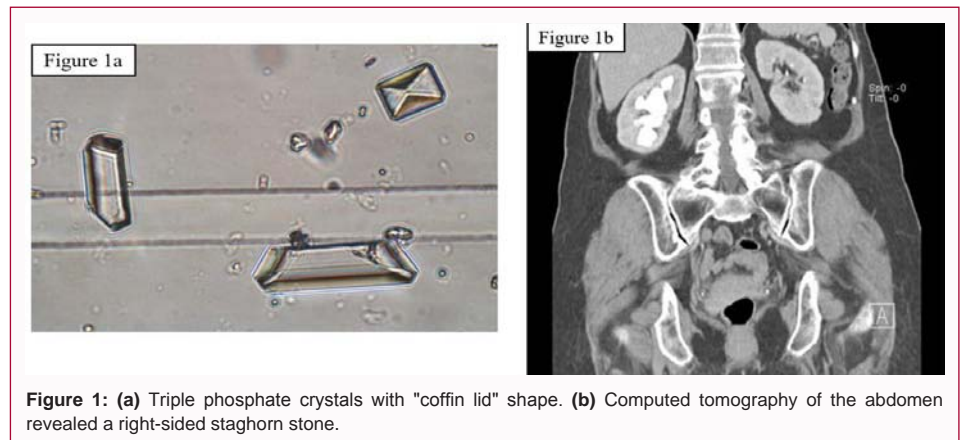


Figure 1: (a) Triple phosphate crystals with "coffin lid" shape. (b) Computed tomography of the abdomen revealed a right-sided staghorn stone.

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