

Commentary

Independently by their location, bezoars are defined as concretions of undigestible materials. In most of the cases they occur in stomach or intestines, being composed by hair (trichobezoar), indigestible vegetables or fruits (phytobezoar-general term, diospyrobezoar-tannin-containing persimmon fibers), milk products (lactobezoar), drugs (pharmacobezoar), cotton, sand, metal, plastic, chemically-transformed gloves, and even wool, as in one of our previous reported cases in a post-partum young girl.^[1] In the gastrointestinal tract, most of the cases occurred in patients with diagnosed or even unknown psychiatric disorders such as trichophagia, trichotillomania, pica, emotional disorders, schizophrenia, etc.^[1]

Compared with the bezoars of the gastrointestinal tract, few cases have been reported in field of urology. Obstruction of the pelviureteric tract can be even produced by foreign materials, such as an indwelling ureteral stent forgotten in a renal transplant patient,^[2] or by concretions of endogen undigestible materials.^[3-7] To our best knowledge, bezoars of the kidney and urinary tract can occur as a result of at least three main causes. First of all, a severe renal failure can lead to synchronous renal and intestinal deposits of drugs (renal and intestinal pharmacobezoars), first case being reported in 1973.^[3]

Second cause and the most frequent one is the fungal bezoar, it being especially related to *Candida albicans*

but *Aspergillus fumigatus* and other types of fungi such as *Rhizopus* were also reported as a cause for these renal concretions, with or without involvement of renal parenchyma.^[4-7] Independently by the type of fungus, fungal balls of the kidney have especially been reported in neonates and premature infants, they being sometimes associated with bilateral pelviureteric obstruction and consecutive anuria and urinary ascite.^[4,6] These fungal concretions were especially related to immunosuppression, treatment with antibiotics, and using of intravenous or urinary catheters.^[4] Pelviureteral aspergilloma is an opportunistic lesion that can occur in diabetics or other patients with impaired immunity, leading also to uni-or bilateral ureteric obstruction^[5] and renal abscesses.^[6] Aspergilloma of the urinary tract is usually a secondary spread from pulmonary aspergillosis while candida bezoars occur in cases with systemic candidiasis and *Rhizopus* is a manifestation of zygomycosis.^[4-7] Primary renal aspergilloma and xanthogranulomatous pyelonephritis have also been reported in immunocompetent patients.^[6] Till July 2014, about 65 cases of fungal bezoars of the urinary tract were reported, one third of them being related to aspergillosis.^[5,6]

A third and more rare cause of obstruction of the renal tubes with or without involvement of the pelviureteric structures were reported in association with poisonings. A strange case, for example, led to death of an adult

patient with psychiatric disorders, being related to copper poisoning, as a result of voluntary ingestion of 275 United States copper-containing coins.^[8]

Independently by the cause, differential diagnosis of renal and urinary tract bezoars is difficult to be made and, especially in pediatric patients, percutaneous surgical debulking, ureteronephroscopic removal, and also using of nephrostomy catheters is difficult, sometimes dialysis and even renal transplantation being the treatment of choice.^[4-7] In case of non-obstructive fungal bezoars, antifungal drugs can dissolve them.^[4,6] However, no guidelines regarding the treatment of renal bezoars are available. Undiagnosed, they can be an important cause of mortality and morbidity, especially in premature newborns.^[4,6] Although rare causes of renal failure are there, differential diagnosis of the solid deposits of the urinary tract and renal tubes should take into account not only the ordinary stones but also rare causes as those mentioned in this short commentary.

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