Idiopathic spontaneous perforation of the upper urinary tract. A presentation of 4 cases

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DISCUSSION

Few reports exist on upper tract rupture without an identifiable cause. *Kaplan et al.* (5) suggested that the term '*spontaneous*' is rather misleading and should be replaced by '*non-traumatic*'. This assumption was based on review of published reports always mentioning an underlying co-morbidity probably serving as precipitating factor. However, since then such '*idiopathic*' cases have been reported. *Ertugrul et al.* (3) reported a case which was managed using a double J stent as ureteral splinter. *Coulon et al.* (6) in their report of a case, speculated that past surgical manipulations causing some degree of ureteral stenosis or a radiolucent calculus never discovered during work-up might explain an apparently unexplained ureteral perforation. Additional to these observations, we present a small case series with 4 patients presenting with upper tract rupture without an evident cause, adhering to Kaplan's definition of spontaneous rupture (5). Missed diagnoses of upper tract perforation could result in significant morbidity especially in older or otherwise compromised individuals. Even though advances in urological imaging allow for accurate and early elucidation of the causes of an acute renal colic presentation it is noteworthy that considerable gaps in evaluation and management do exist. In addition, guidelines for emergency investigation and treatment of patients presenting with acute renal colic are currently missing.

Recently published data indicate that in a total of nearly a million visits (data from 259 US national records) for renal colic about half of patients had radiographic testing (7). The investigator argues that even in well organized primary health care systems, rapid urological evaluation could be compromised by the absence of clear protocols and guidelines concerning management of these cases. *Wright et al.* (8) in their work proposed an algorithm for initial evaluation of the patient presenting with renal colic. According to this, primary care providers (i.e. general practitioners) are responsible for performing initial assessment of the patient's risk and need for prompt urological evaluation. Although the suggested guidelines argue for early diagnostic imaging, it is not until after 7 days from onset of symptoms that ultrasonography is recommended for patients fulfilling criteria for home management. Of note, the patients comprising our small series presented with rather '*benign*' symptoms, far from the dramatic presentation of peritoneal irritation or established acute abdomen. According with reports focusing on delayed versus rapid helical CT scan as the key for accurate diagnosis of traumatic rupture of the ureter (4), we selected CT for establishing the diagnosis of upper tract disruption when this was implied by routine ultrasound imaging. It is indeed an issue of debate whether to submit all patients presenting with renal colic to advanced imaging modalities such as CT urography in an era of minimizing costs. *Titon et al.* (9) support CT imaging with delayed scans as a feasible and accurate means of diagnosis able to reveal upper tract perforation. Our experience indicates that early imaging with ultrasound serves as a first 'screening' test which implies more serious damage such as perforation. Apart from use of helical CT per se, of special mention is the particular elaboration on delayed scans which seem to be the key feature for discovering an otherwise potentially missed diagnosis. Excretory delayed CT imaging might instead reveal urine/contrast medium extravasation thereby making the injury evident. *Gayer et al.* (4, 10) as well as *Titon et al.* (9) further supported this trend by applying the same method in patients with ureteral rupture. In light of our findings, we herein further support this option which could probably be considered as a method to be evaluated as guideline in larger scale trials. This series of 4 cases may constitute one of few who present data on spontaneous perforation of either the ureteropelvic junction or the ureter. It is justifiable to term such cases are as "*idiopathic*", although speculations on their mechanism are allowed. One could support the transient obstruction by a renal calculus eventually passed as the underlying cause, through the elevation in intraluminal pressure that it causes. Absence of the calculus makes matter more complicate, but this could probably be due to its passage before late presentation of the patient.

No conflict of interest declared

Conclusions

In this small series of patients presenting with perforation of the upper tract, thorough state of the art evaluation did not reveal an obstructive cause allowing to assign the term "*idiopathic*" in all of them. Despite the absence of strong data on the underlying causes, a transient obstruction by a calculus eventually expulsed seems to be the most reasonable scenario.

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