Trauma and reconstruction

Early post-traumatic renal vascular hypertension a rare complication of severe renal trauma

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Severe renal trauma is a particular entity, although rare, but most often involves the risk of short-term death from hemorrhagic shock and long-term death from infectious complications or secondary renal dysfunction, exceptionally post-renal vascular hypertension. Which is generally a late complication, we will report the case of a patient suffering from grade v renal trauma with early post-traumatic renal vascular hypertension, suppressed by medical treatment, then the surgical indication was kept in the second phase in front of a mute kidney.

Introduction

Kidney injuries are the most common injuries to the urinary tract and are present in 10–30% of cases in patients with abdominal injuries, The main causes of kidney trauma are accidents on the public highway (AVP) and decelerating shocks, and, to a lesser extent, penetrating stab wounds or firearm. Trauma is the leading cause of death in patients aged 1–44 years previously, responsible for nearly 35,000 deaths in France in 2014. Severe renal trauma is a particular entity although rare, but most often life-threatening both in the short term by hemorrhagic shock and in the long term by an infectious complication or secondary renal dysfunction, exceptionally renal vascular hypertension post-traumatic which is typically a late complication.

We report the case of a patient suffering from grade 5 renal trauma with post-traumatic vascular hypertension who was stopped by medical treatment, then the surgical indication was kept. Data in the literature on the renal complications of these serious long-term renal lesions are scarce.

Observation

Mr LA aged 30, with no significant history victim of an accident on the public highway with point of impact thorax, abdomen and lower limbs, admitted to emergency at H1 of AVP, on clinical examination conscious patient, GCS at 15, a small hypotension that responded well to the filling. a total hematuria, presence of bruises in the left lumbar region with tenderness to palpation without lumbar contact. injury: grade 5 renal trauma with a multi-billed left kidney and pri renal hematoma (Fig. 1) (Fig. 2); grade 3 hepatic laceration, closed chest trauma, femoral fracture. On day 2 of admission the patient installed a quantified hypertension 22/10 cm hg resistant to nicardipine titration at SAP, a renovascular origin was suspected, a very high income assay of plasma renin activity by RIA technique confirming the renovascular origin of hypertension, medical treatment was established based on enzyme inhibitor conversion with normalization of the voltage Fig. 6 hours after the introduction, an uro control scanner was carried out on D7 objectifying the same aspects found for admission, patient transferred to D12 to the orthopedic trauma department for orthopedic care. A control urocanner at D 30 objectified a devascularized kidney destroyed without excretion or secretion with stabilization of the blood pressure figures after stopping the medical treatment, renal scintigraphy with DMSA objective a functional value of the right kidney to less than 5% justifying a cold nephrectomy to avoid infectious complications of a non-functioning kidney.

Discussion

Kidney trauma affects young men, preferably between 10 and 40 years of age, generally with a predominantly male presence, as is the case in our study. Several teams found preferential damage to the left kidney in the event of isolated renal trauma, for others it was the right kidney which was the most interested, From a clinical point of view in
major renal trauma, low back pain is most often associated with gross hematuria or signs of shock. Although serious kidney damage is rare, it threatens life in the short term both by hemorrhagic shock and in the long term by infectious complications or secondary renal dysfunction, exceptionally post-traumatic renovascular vascular hypertension. Late complications come in the form of hydronephrosis, high blood pressure, lithiasis, chronic pyelonephritis, and 5% chronic kidney disease, with a correlation between the degree of kidney failure and the severity of kidney injury. The onset of hypertension is typically a late complication (hypertension), which can be due to two mechanisms: extrinsic compression by a perirenal hematoma forming a gangue of sclerosis or by a direct arterial pedicular lesion. This hypertension, most of the time reversible, appears in the weeks or months following the trauma. Note that there is no post-traumatic hypertension of renal origin without radiologically visible lesions in the initial phase and that its rate of occurrence is correlated with the severity of the initial trauma. Its management is medical in first intention but can justify a revascularisation or a surgical assumption of responsibility in the event of refractory form, with like last resort the nephrectomy.

Post-traumatic renovascular hypertension is the main reason for long-term nephrectomy. Its incidence is low, around 2–6% depending on the studies. the occurrence of hypertension in the acute phase of trauma is an even rarer phenomenon; this can happen whether or not the patient has had pedicle lesions, the patient may have been treated with simple conservative treatment with monitoring, or endovascular therapy, there is no known predictor of the onset of high blood pressure after kidney injury. Its onset usually occurs between a few weeks and several months after the trauma, exceptionally early after the trauma.

The particularity of our observation is the early onset of renovascular hypertension 24 hours after the trauma, by direct compression of the renal pedicle by perirenal hematoma, noted that in our patient no direct vascular lesion was noted on the various scans performed, this renovascular arterial hypertension was controlled only by medical treatment, thus avoiding an emergency nephrectomy which considerably increases morbidity and mortality in the context of polytrauma patients, to our knowledge, this is the first case described in the literature on post-traumatic renal hypertension with early onset, in the other cases published in the literature, this complication appeared late with different delays. another special feature is the conservative medical treatment of this hypertension in the acute phase, thus avoiding an emergency nephrectomy.

Conclusion

Although rare, severe kidney trauma is most often life-threatening, both short-term and long-term due to infectious complications or secondary renal dysfunction, post-traumatic renal vascular arterial hypertension remains a complication. Exceptional obtained more if it occurs early and in the absence of direct vascular lesion on the imaging, this is the case with our observation, its management is medical in first intention but can justify a revascularisation or a surgical management in case of refractory form, with nephrectomy as a last resort. In our observation, nephrectomy was performed cold after a month of trauma in front of a non-functional kidney.

Consent

Consent was obtained from the patient for the above information to be released for research purposes.
Declaration of competing Interest

The authors declare that they have no conflicts of interest.

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Author contributions

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