

Case

MASSIVE RETROPERITONEAL HAEMATOMA BECAUSE OF RENAL CYST RUPTURE, REPORT OF A CASE

Hematoma Retroperitoneal Masivo por Ruptura de Quiste Renal, Reporte de Caso

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Receipt: 13/08/2020
Acceptance: 14/09/2020

ABSTRACT

We report the case of an 86-year-old adult man who, as a pedestrian, is hit by a motorcycle, suffering polytrauma; in initial care, he refers to thoraco-abdominal pain and subsequently neurological deterioration. Assessed by a neurosurgeon and general surgeon, a right chest tube is placed and a laparoscopy is performed where there is little bleeding from the abdominal cavity. It shows deterioration of its general state and dies in respiratory failure. During the necropsy procedure there is subarachnoid hemorrhage and cerebral herniation, rib fractures and pneumonic consolidation, a massive retroperitoneal hematoma is observed due to rupture of simple renal cyst.

Key words: Renal Cyst; Retroperitoneal haematoma; Abdominal Trauma; Hypovolemia.

1. Case report

He is an adult man of 86 years of age who, as a pedestrian, is hit by motorcycle suffering from trauma, in the initial care he refers to chest and abdominal pain, with an initial diagnosis of right pneumothorax a chest tube is placed, the day after admission shows neurological deterioration with Glasgow 6/15, so that a simple CT scan of the skull, thorax and abdomen is taken and a contusion of the corpus callosum on the falx cerebri, bilateral bleeding of cisterns, bleeding in ventricles III and IV are observed, fractures in the right rib cage and hemoperitoneum. Two days after the traffic accident, a diagnostic laparoscopy is performed where blood remains are found with little bleeding; the patient is left with ventilatory support without the need for active vessels. When presenting thermal rises, Piperacillin / Tazobactam is started and they decide to refer to a more complex Medical Institution. Upon admission to this hospital, they take a chest X-ray where they find right parahilar infiltrates with a tendency to consolidation. The patient evolves to the neurological deterioration without response to external stimuli, presents progressive respiratory difficulty and hemoglobin and hematocrit fall in the paraclinics. The patient makes cardio-respiratory arrest. Resuscitation maneuvers are performed for 20 minutes without response. Autopsy documents blunt trauma type excoriations on the face, right shoulder, right elbow and left leg, the internal examination shows subgaleal hematoma, cortical contusions in the brain with subarachnoid hemorrhage and cerebral herniation, fractures of the right rib cage, bilateral pneumonic consolidation, massive retroperitoneal hematoma due to traumatic rupture of right renal cyst (Fig. 1,2).

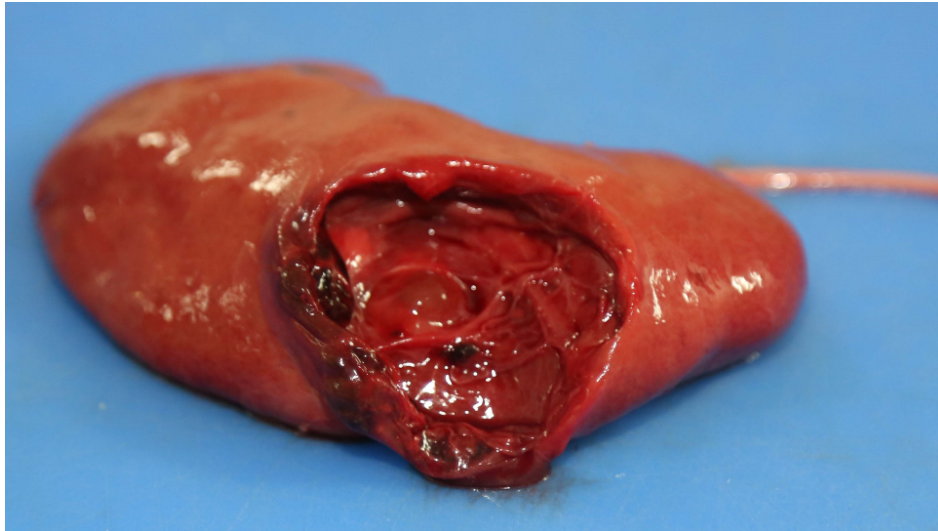
Fig. 1.

In the image on the right, the ruptured renal cyst and on the left the left kidney with several simple renal cysts.



Fig. 2.

Image of the broken cyst of the right kidney that causes hemoperitoneum



Commentary:

The retroperitoneal space is an area located between the posterior aspect of the peritoneal peritoneum and in front of the transversalis fascia, bounded above by the diaphragm and below by the pelvic inlet, the fascias it contains divide it into four spaces: (a) pararenal anterior containing the pancreas, duodenum, ascending colon and descending colon, (b) posterior pararenal containing pre-peritoneal fat from the abdominal wall, (c) perirenal space containing kidneys, renal vessels, renal pelvis adrenal glands, proximal ureters, lymphatics and perirenal fat and (d) vascular space that contains the aortic artery and inferior vena cava, space limited by both perirenal spaces

Simple renal cysts are defined as non-tumor parenchymal lesions, of epithelial origin and consisting of a thin-walled renal mass completely filled with fluid (Hélénona et al., 2018). In 1986 Bosniak developed a classification system to stratify cystic renal lesions through CAT, this classification system has been updated over time (Bosniak, 1986). Simple renal cysts are the cystic renal masses most frequently found with an incidence of 41% of patients (O'Connor et al., 2013). The ultrasound diagnosis is very simple with ultrasound criteria among which are being a well-defined and anechoic oval mass, with homogeneous content, posterior enhancement and having an imperceptible wall (Hélénona et al., 2018).

Differential diagnosis should be made with perirenal or perinephritic spontaneous hemorrhage, also known as Wunderlich syndrome is a serious condition that was first described in 1856, among the nine etiologies that cause this rare condition is the rupture of simple renal cysts in 13.5% of all the cases reported (Hélénona et al., 2018).

2. Discussion

The retroperitoneum is a space located between the posterior sheet of the peritoneum and the structures of the posterior abdominal wall, its content includes hollow viscera, solid viscera, and large arterial and venous vessels. It is a virtual space where up to 3000 ml of blood can accumulate (Braunstein et al, 1964). Casuistry indicates that when there is a retroperitoneal hematoma, bleeding

in 75% of cases is from penetrating trauma and 25% from non-penetrating trauma (Steichen et al., 1966; Costa & Robbs, 1985).

Victims of traffic accidents have polytrauma, which is why there are other co-existing injuries to those determined primarily, so its diagnosis requires multiple clinical and paraclinical approaches. Due to the kinematics of the trauma, injuries can be blunt, penetrating or non-penetrating, or by deceleration and even by falling and crushing, depending on the vehicle involved. For this case report, the trauma was overwhelming with a primary impact at the closed thoraco-abdominal level and related injuries at the brain level with patterns of coup and contra-coup due to the fall to the floor; In deceleration injuries with trauma to the dorsum, the renal vessels are elongated backwards with possible rupture of the vascular pedicle. In this case, the closed thoraco-abdominal trauma generated a sudden increase in intra-abdominal pressure that led to the rupture of the cyst with insidious bleeding that led to a massive retroperitoneal hematoma that was only diagnosed during the post-mortem examination. It is considered that the prognosis of this person was very ominous due to age and brain lesions, but it is necessary for the treating physicians to evaluate the general condition of a patient when there are signs or symptoms such as a state of refractory shock that are not explained by the apparent lesions, for this case there was a neurogenic shock associated with a hypovolemic shock masked by the mental state of the patient.

3. Conclusions

Renal traumas according to the global incidence are more frequent in closed traumas than in open ones, being able to compromise renal tissue or renal vessels; In traffic accidents the causal mechanism is associated with direct trauma with renal parenchymal lesion or with a rapid deceleration that elongates the renal pedicle generating rapid bleeding (Tillou et al., 2001; Bittenbinder & Reed, 2013). For the reported case, the closed trauma of the abdomen caused the rupture of a simple kidney cyst that generated a massive retroperitoneal hematoma that combined with a traumatic brain injury and pneumonia generated a multiple organic failure with the death of the injured. Usually, retroperitoneal bleeding is conservative, given that the hematoma is contained in the retroperitoneal space and the scanographic follow-up is vital to decide whether embolization of the bleeding vessel is performed, which is the most usual therapeutic measure or surgical management if there is a hemodynamic instability severe and associated with bleeding (Patel & Nuttal, 2019). For this case, a finding of autopsy is made available to the community, where during the systematic review of a body undergoing autopsy it shows a large retroperitoneal hematoma secondary to rupture of a renal cyst due to a closed abdominal trauma in a traffic accident.

Ethical considerations

The specimens used for this research are protected under the strictest confidentiality.

Financial disclosures

None.

Conflict of interest

None.

4. Author contribution

Oscar Alonso Plaza and Ana María Mantilla conceived the study. Plaza was senior consultant at this case report and participated in its coordination. Plaza contributed to the acquisition of clinical

data, its analysis and interpretation and to the preparation of images. Plaza, Gonzalez, Mantilla and Puentes carried out the literature review. Plaza and Mantilla contributed to the preparation of the manuscript. Plaza, Gonzalez, Mantilla and Puente contributed to the refinement of the case report. All authors have approved the final article.

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RESUMEN:

Reportamos el caso de un hombre de 86 años que, siendo peatón, es atropellado por una motocicleta, sufriendo politraumatismo. En la atención inicial refiere a dolor toracoabdominal y posteriormente deterioro neurológico. Evaluado por un neurocirujano y un cirujano general, se coloca un tubo torácico derecho y se realiza una laparoscopia y observándose poco sangrado de la cavidad abdominal. El paciente muestra deterioro de su estado general y muere por insuficiencia respiratoria. Durante el procedimiento de necropsia se determina hemorragia subaracnoidea y hernia cerebral, fracturas costales y consolidación neumónica, se observa un hematoma retroperitoneal masivo por rotura de quiste renal simple.

Palabras clave: Quiste Renal; Hematoma Retroperitoneal; Trauma abdominal; Hipovolemia.
