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Medicine

MANAGEMENT OF AN IDIOPATIC ZONE I RETROPERITONEAL HEMATOMA

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ABSTRACT:
RETROPERTIONEAL HEMATOMAS ARE USUALLY A COMPLICATION OF A BLUNT ABDOMINAL TRAUMA, AORTIC ANEURYSMS, NEOPLASMS SITUATED IN THE RETROPERTIONEAL SPACE OR VASCULAR INJURIES. IDIOPATHIC HEMATOMAS ARE A VERY RARE FINDING IN PATIENTS WITH ACUTE SURGICAL ABDOMEN AND BECAUSE OF THE RARITY OF THIS PATHOLOGY, DIAGNOSIS AND TREATMENT IS OFTEN DELAYED AND MAY POTENTIALLY BE FATAL. MRI OR AN ENHANCED COMPUTER TOMOGRAPHY ARE THE ELECTIVE METHODS FOR DIAGNOSING RETROPERITONEAL HEMATOMAS, BUT IN SOME CASES RESULTS MAY BE INCONCLUSIVE, THE NEXT STEP BEING A DIAGNOSTIC LAPAROSCOPY. WE PRESENT THE CASE OF A 47 YEAR OLD MALE PATIENT WHO

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PRESENTED IN THE EMERGENCY ROOM WITH NO HISTORY OF RECENT TRAUMA OR ANTICOAGULATION TREATMENT FOR KNOWN PATHOLOGIES ACCUSING PAIN IN THE RIGHT ILIAC FOSSA AND RIGHT UPPER QUADRANT, LUMBAR PAIN AND SIGNIFICANT WEIGHT LOSS. AFTER A CT SCAN WAS PERFORMED THAT SHOWED A RETROPERTIONEAL MASS HE WAS ADMITTED IN OUR SURGICAL WARD FOR FURTHER INVESTIGATION AND TREATMENT.

KEY WORDS: RETROPERITONEAL HEMATOMA IDIOPATHIC ACUTE ABDOMEN

INTRODUCTION

The retroperitoneum is part of the extraperitoneal compartment between the diaphragm and subperitoneal pelvic space. It is located between the parietal peritoneum and muscular fascia[10]. It's divided into three areas that correlate with underlying structures and likelihood of injury to those structures[11]. Zone I hematomas concern major vascular injuries to the great vessels such as inferior vena cava, aortic injuries or proximal iliac injuries.

Hemorrhage in the retroperitoneal space and retroperitoneal hematomas were first described in 1909 and named 'abdominal apoplexy'.

Signs and symptoms of retroperitoneal hematoma usually mimic an acute abdomen: severe abdominal pain, nausea and anorexia. Signs of hypovolemic shock such as tachycardia, confusion, anuria and low blood pressure appear late thus delaying the diagnosis.

If there are no signs of recent trauma, idiopathic hematomas are hard to diagnose. Tumors, hematomas or abscess in the retroperitoneal cavity are very rare and have unusual symptoms; patients present late at the emergency room due to their silent growth[12] and in most cases because of the involvement with the large vessels and their size a radical resection is impossible.

Acute retroperitoneal hemorrhage can cause intra-abdominal hemoperitoneum that can be fatal, so emergent surgery is required. The strategy for retroperitoneal hematoma depends on the vital signs and the cause of the hemorrhage. Chronic hematoma is mostly removed intraoperatively or by tube drainage; its prognosis appears to be better than that of the acute type[13].

After diagnosing a retroperitoneal mass, it's very important to know the type of the tumor so a C.T guided biopsy is required. Their wide histological diversity and unspecific clinical presentation make them a challenge for the surgeon. In order to improve their detection immunohistochemistry seems to show promising results. Methods of detection have evolved over time to identify as much as possible the histological type of tumor. Because of this extreme

[10] Monib, Sherif; Ritchie, Andrew; Thabet, Ezzuldin: *Idiopathic retroperitoneal hematoma*. J Surg Tech Case Rep. 2011 Jan-Jun; 3(1): 49–51; Hayes, Seth; Levi D, Allen: *Surgical exposure/Anatomy of the lateral lumbar spine and plexus in Nerves and Nerve Injuries* (Chapter); https://doi.org/10.1016/B978-0-12-802653-3.00061-0

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[13] Kawashima A; Sandler M; Ernst D; Takahashi N; Roubidoux MA; Goldman SM; Fishman EK; Dunnick NR: *Imaging of nontraumatic hemorrhage of the adrenal gland*, Radiographics 1999;19:949-963; Constantin, Vlad; Carâp, Alexandru; Socea, Bogdan; Bertești eanu, Șerban; Motofei, Ion; Ciudin, Alexandru: *Retroperitoneal hematoma following left renal vein erosion by a staghorn calculus*. American Journal of Medical Research, 2014, 1(1): 37-46

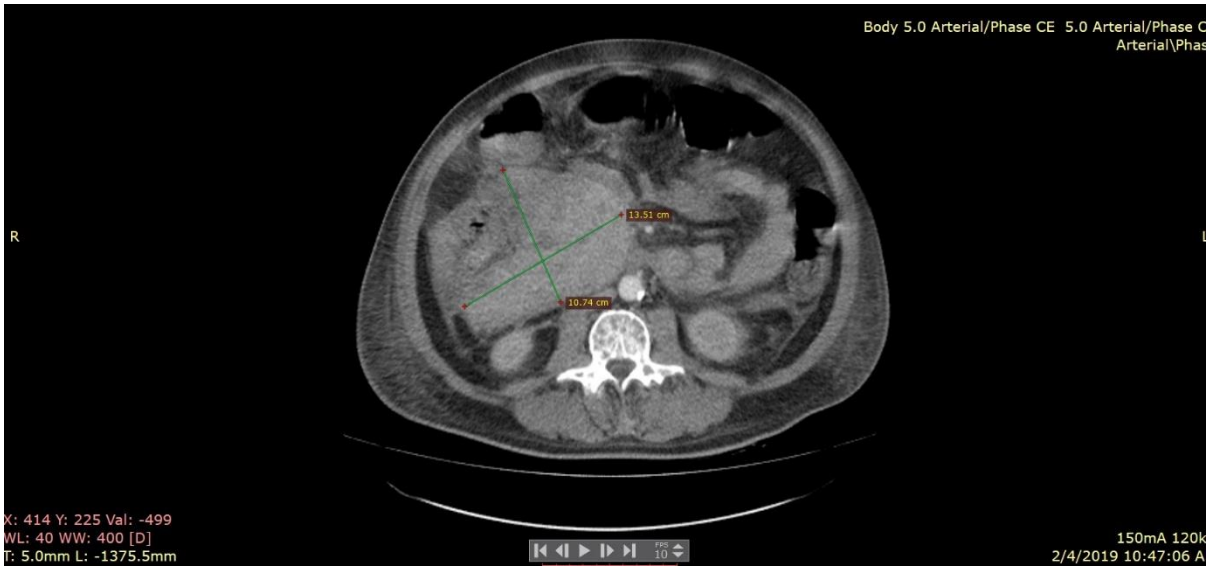
variability immunohistochemistry through its various markers is the one that often sets the definitive diagnosis, the simple histopathological examination being insufficient[14].

A C.T- guided biopsy can be performed when the patient is stable and when the retroperitoneal mass isn't life threating. In most cases a retroperitoneal hematoma is an acute pathology that requires immediate surgical intervention.

CASE REPORT

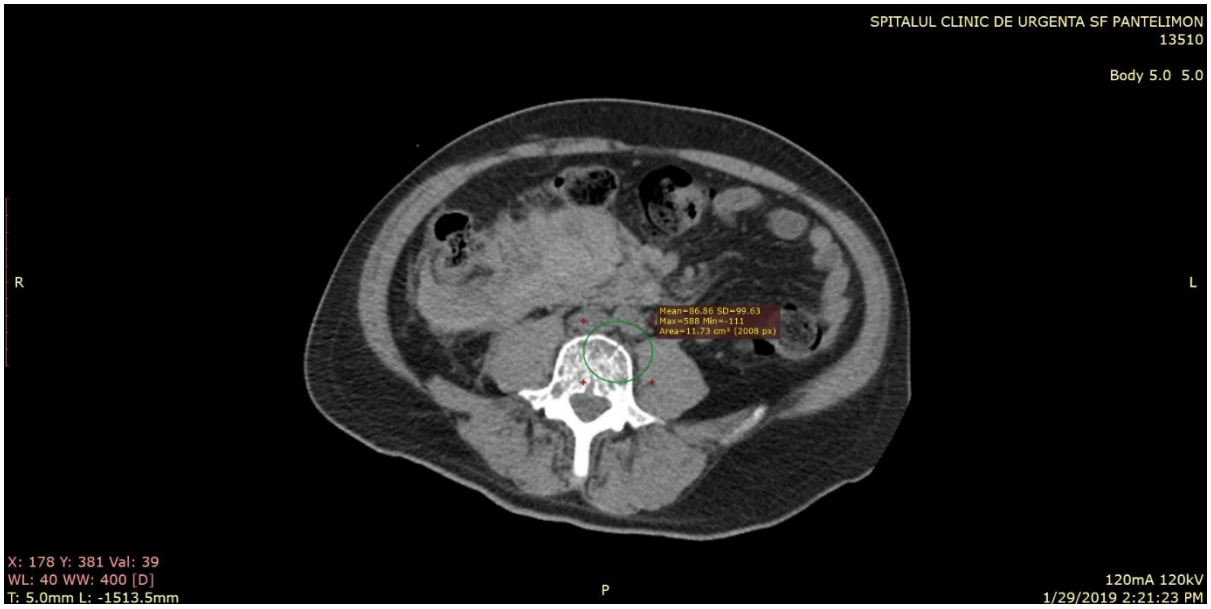
We present the case of a 47 year old male who came into the emergency room complaining of persistent pain the in right upper quadrant and right iliac fossa, weight loss (almost 20kg in 2 months) and lumbar pain. Patient had no known pathologies and no history of recent trauma. Clinical exam revealed rebound tenderness at palpation of the abdomen, a positive Lasague sign and *pale* conjunctivae; in the emergency room patient was tachycardic and hypotensive. Laboratory results showed severe anemia (hemoglobin 6 mg/dl), leukocytosis (WBC 18.600), renal failure with a creatinine level of 2.27 mg/dl and blood urea 70 mg/dl.

We performed an abdominal CT scan without intravenous or oral contrast which revealed a retroperitoneal mass that comes in contact with the head of the pancreas, transverse colon and has in its close vicinity the inferior vena cava and the abdominal aorta (Figure 1). The radiologist also describes a pathologic fracture of the lumbar spine (L4-L5)(Figure2) and demineralization of the sacrum.



(Figure 1)

[14] Bratu, Ovidiu; Marcu, Dragos Radu; Socea, Bogdan; Neagu, Tiberiu Paul; Diaconu, Cristina Camelia; Scarneciu, Ioan; Turcu, Liliana Flavia; Radavoi, George Daniel; Bratila, Elvira; Berceanu, Costin; Spinu, Arsenie Dan: *Immunohistochemistry particularities of retroperitoneal tumors* Rev. Chim. (Bucharest) 2018, 69(7):1813-1816



(Figure 2)

Patient was cleared out by the neurosurgeons; not being a traumatic fracture, managing the bleeding was a priority before repairing the lumbar spine.

After 3 days in the intensive care unit patient's renal function was normal so a contrast enhanced computer tomography could be performed. Results were similar with the first examination; the radiologist suspected that the retroperitoneal mass was a tumor (leiomyosarcoma) or an infected abscess.

As a differential diagnosis before surgery multiple hypothesis were made regarding the retroperitoneal mass such as: sarcoma, infected abscess, renal tumor, rupture of the psoas muscle with active source of bleeding[15].

We decided to perform an exploratory laparotomy which revealed free fluid in the peritoneal cavity and a zone I retroperitoneal hematoma (Figure 3).

[15] Constantin, Vlad; Socea, Bogdan; Moculescu, Cezar; Sireteanu, George; Popa, Florian; *Enteral non Hodgkininan lymphoma in young age – difficult diagnostic*, Chirurgia, 2009, 104(5): 601-604; Marcu, Radu Dragos; Spinu, Arsenie Dan; Socea, Bogdan; Bodean, Maria Oana; Diaconu, Camelia Cristina; Vasilescu, Florina; Neagu, Tiberiu Paul; Bratu, Ovidiu Gabriel: *Castleman's Disease - Clinical, histological and therapeutic features.* Rev. Chim. (Bucharest) 2018, 69(4):823-830; Drăghici, T; Negreanu, Lucian; Bratu, Ovidiu Gabriel; Pantea Stoian, Anca; Socea, Bogdan; Neagu, Tiberiu Paul; Stănescu, AMA; Mănuc, D; Diaconu, Camelia Cristina: *Paraneoplastic syndromes in digestive tumors: a review.* Romanian Biotechnological Letters 2018, 23(6):1-10, https://doi.org/10.26327/RBL2018.185; Lupu, Sorin; Brînză, Adrian; Socea, Bogdan; Marcu, Dragos; Peride, Ileana; Stanescu, Ana Maria Alexandra; Neagu, Tiberiu P.; Maxim, Laurian: *A brief review of the literature on the malignant ureteral obstruction.* J Mind Med Sci 2018; 5(2): 189-194 doi: 10.22543/7674.52.P189194.

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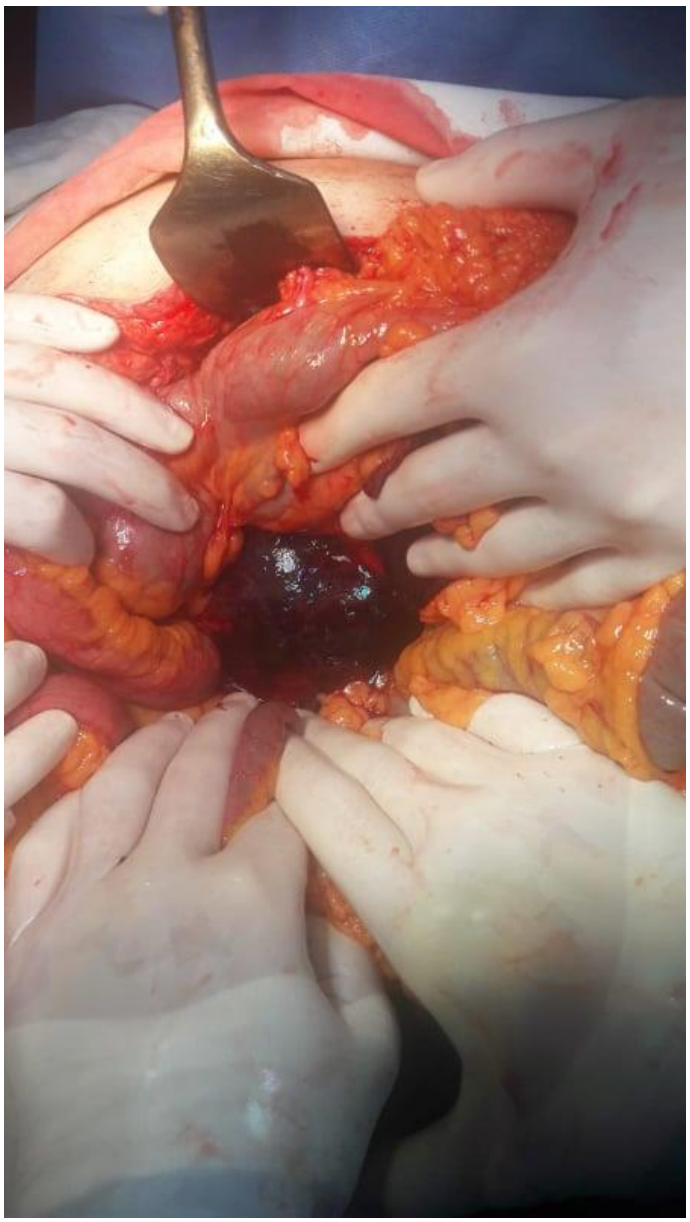
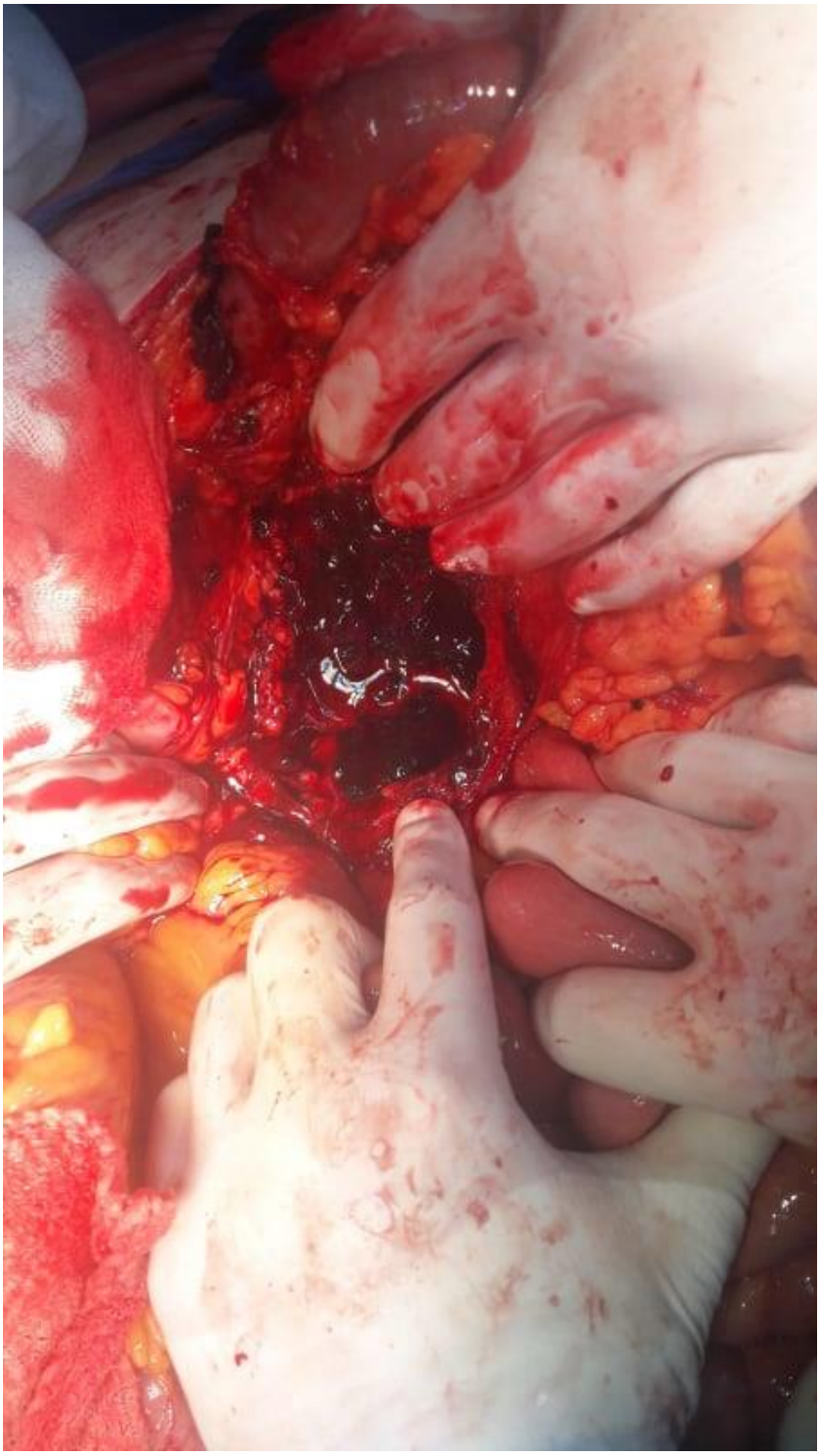


(Figure 3)

With the patient being hemodinamiclly unstable and without knowing the cause of it draining the entire hematoma was impossible. So we removed all the blood clots from the cavity of the hematoma (Figure 4) and used hemostatic gauzes to stop the diffuse bleeding from the adjacent area;



(Figure 4)

also we left 2 external drainages in the peritoneal cavity, one in cul-de-sac Douglas and one near the hematoma.

In the intensive care unit 12 hours after surgery patient presented tachycardia, anuria and had almost 4000ml of blood in the external drainages. Patient underwent another surgical intervention in the same day, intraoperatively we discovered a small source of bleeding from

the mesenteric vessels and from the residual cavity. Hemostasis was successfully obtained using wound clot gauze and ligation of the bleeding sources.

Bacteriological exam of the fluid from the peritoneal cavity was negative, also cytology examination was negative for cancerous or precancerous changes.

Patient remained in the ICU for another 7 days for blood transfusions and close monitoring, according to objective criteria[16]; he was admitted in our surgical ward when he regained his renal function, creatinine levels were normal, no signs of bleeding and a hemoglobin level of 11 mg/dl.

Because the inferior vena cava was compressed by the hematoma (vena cava syndrome) the patient had excess fluid in the peritoneal cavity so we maintained the peritoneal drainage for 20 days postop.

He had a slow recovery, because of the lumbar spine fracture, two invasive laparotomies and severe anemia patient needed a chiropractor therapist for mobilization and to regain his muscle strength. Patient was discharged after a month with the following recommendations: hematological consult, autoimmune diseases specialist and surgical consult after six months.

Also a very important aspect is deep vein thrombosis prophylaxis so we avert this possible complication by administration of low molecular weight heparin for another 20 days after discharge[17].

CONCLUSION

Idiopathic hematomas are a very rare finding; usually they appear as a complication after a traumatic injury of the abdomen, anticoagulation therapy or as a complication of a preexisting tumor. There are very few cases described in the current literature and the therapeutic methods are unclear. Emergency surgical intervention is recommended when the size of the hematoma compresses the retroperitoneal vessels and organs, such as the aorta, inferior vena cava or kidneys. After the acute moment has passed no idiopathic bleeding of the retroperitoneum should be left undiagnosed[18]; also patients should benefit from a hematological consult and biannual evaluation from the surgery team.

Although retroperitoneal hematomas are rare and hard to diagnose, surgeons must keep this in mind as a differential diagnosis in their surgery practice[19], because the outcome of this pathology depends on timing.

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All authors report no potential conflict of interest.

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