

## Case Report

# ADRENAL HEMATOMA SECONDARY TO A SPONTANEOUS RUPTURE OF A PSEUDOANEURYSM

## HEMATOMA SUPRARRENAL SECUNDARIO A RUPTURA ESPONTÁNEA DE PSEUDOANEURISMA

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### Abstract

Spontaneous unilateral adrenal haematoma secondary to a pseudoaneurysm is a rare condition and is usually associated with anomalies of the gland. Mostly, it can be treated conservatively; but in some cases, it can progress to a progressive haemorrhage with instability. We report a case of a 74-year-old male who presented with pain and hypotension secondary to a spontaneous unilateral adrenal pseudoaneurysm and retroperitoneal bleeding associated to anticoagulation, successfully treated by embolization.

## Resumen

El hematoma suprarrenal unilateral espontáneo secundario a un pseudoaneurisma es una entidad rara y suele asociarse a anomalías de la glándula. En su mayoría, se puede tratar de forma conservadora; pero en algunos casos puede progresar a una hemorragia progresiva con inestabilidad. Presentamos el caso de un varón de 74 años que consultó por dolor e hipotensión secundaria a pseudoaneurisma suprarrenal unilateral espontáneo y sangrado retroperitoneal asociado a anticoagulación, tratado con éxito mediante embolización.

**Keywords:** Adrenal Gland, Pseudoaneurysm, Haemorrhage, Embolization.

## Introduction

Retroperitoneal haemorrhage can be caused by bleeding from vessels and retroperitoneal organs; usually after trauma, but also spontaneously. Adrenal pseudoaneurysms are uncommon but are also a cause of a retroperitoneal haemorrhage.

In cases of stability with no risk factors for haemorrhage, conservative treatment is the best option. However, in cases of pain, hypotension, and anticoagulant therapy, embolization must be performed.

## Case Report

A 74-year-old man came to our hospital due to intense, acute pain in the left renal fossa and general discomfort for a few hours. In the emergency room, he presented an episode of hypotension and

signs of peripheral hypoperfusion. He denied any previous similar episodes and traumatism. He had dyslipidemia, a mechanic aortic prosthesis, and antecedents of paroxysmal auricular fibrillation and ictus. He was being treated with acenocoumarol and beta-blockers.

When he arrived, the physical exploration showed a heartbeat frequency of 79bpm, and blood pressure of 109/55 mmHg. He presented pain in the hypogastrium and left renal fossa, but had no signs of peritonism.

Blood tests manifested  $11 \times 10^3$  leucocytes/mm<sup>3</sup> with 80% of neutrophilia, 15.3 g/dL haemoglobin, 4.19mg/dL creatinine, normal K, prothrombin time of 15%, and INR of 4.19. A CT angiography was performed that showed a left adrenal haematoma with a pseudoaneurysm inside, and a left perirenal haematoma (Fig 1). No other abnormalities in the gland were shown.

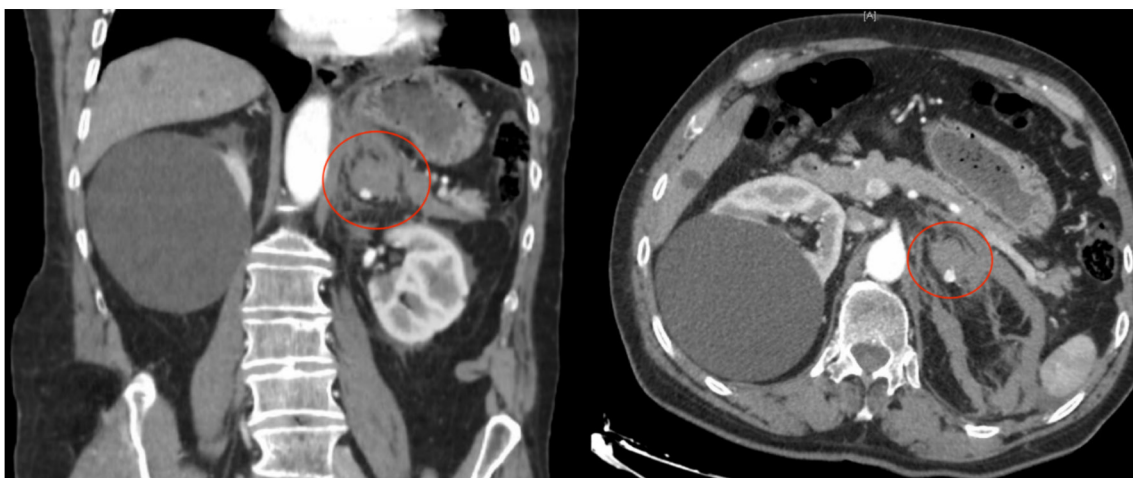


Fig 1. Adrenal haematoma and pseudoaneurysm.

Given the scan results, acute renal failure, risk of uncontrolled haemorrhage because of altered coagulation, and intense pain of the patient, an embolization was performed. Previous to the procedure, rapid anticoagulation reversal was required with prothrombin complex concentrates and Vitamin K.

For the procedure, the left renal artery was catheterized with a 5 French C2 catheter. Arteriography showed a pseudoaneurysm dependent on the left lower adrenal artery without active bleeding. Selective microcatheterization and embolization with Glubran (1:3 dilution) was performed without complications (Fig 2A and 2B). Percutaneous closure was carried out with AngioSeal.

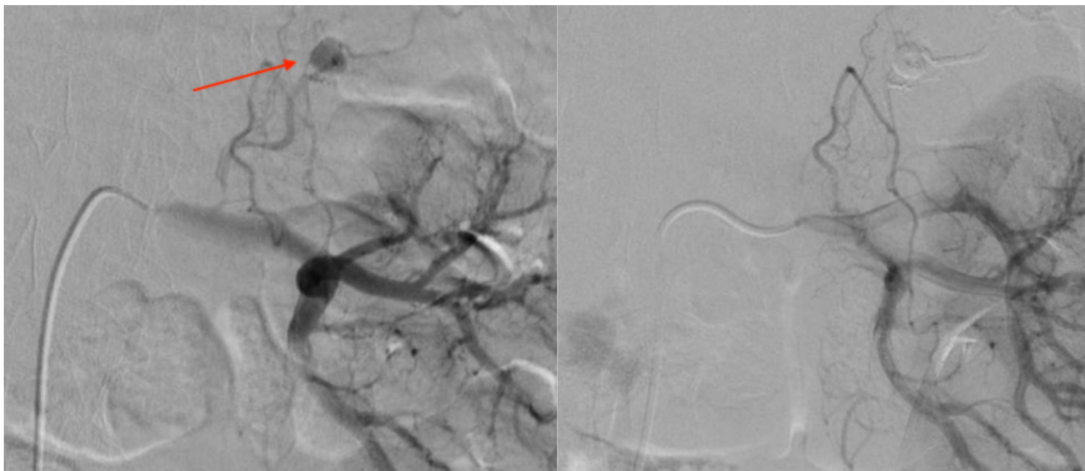


Fig. 2A and 2B. Before and after embolization

After a few days, the patient had no pain, was stable, and his blood test showed a count of  $5.81 \times 10^3$  leucocytes/mm<sup>3</sup>, 61% of neutrophilia, 13.4 g/dL haemoglobin, and 0.63 mg/dL creatinine.

Three months later the patient remains well with a follow-up CT scan that shows no signs of haematoma or any other complications.

## Discussion

Adrenal injuries mostly occur secondary to trauma. It has been described that 28% of cases of abdominal trauma present adrenal gland injuries, mostly on the right side [1, 2]. This occurs because the right adrenal gland is more easily injured by compression between the liver and spine. Further, it may be due to high intra-adrenal venous pressure by compression of the inferior cava vein, and also due to deceleration causing rupture of the small intra-adrenal vessels [3]. Other causes of adrenal haematoma are adrenal biopsies, adrenal vein clamping, and liver transplantation [4, 5].

Additionally, there are nontraumatic haematomas that usually occur associated with anticoagulant therapy, surgery stress, sepsis, or hypotension [6], which may be uni- or bilateral. Spontaneous unilateral haematoma is less frequent and can also be idiopathic but has been described to be more usually associated with an adrenal abnormality such as cysts or tumours [7].

Different types of adrenal injury have been described: round to oval haematoma (83%), diffuse irregular haemorrhage obliterating the gland (9%), and uniform enlargement of the gland (9%) [8].

Adrenal haematoma is usually treated conservatively [9], but in some cases, surgery or embolization are needed if signs of instability are present [3]. The exposed case presented an hypotension episode with stable haemoglobin and maintained heart rate. This scenario represents a phase I of an haemorrhagic shock, when the sympathetic system, antidiuretic hormone, and renin-angiotensin-aldosterone system, act to maintain perfusion pressure and cardiac output. Otherwise, the hypotension episode could also be

explained by a vasovagal stimulus due to the acute pain in that moment. Relating to the haemoglobin, in the acute phase of an haemorrhagic shock, this parameter is a poor indicator of blood loss since it starts to decrease 3-4 hours after. This is due to the increase of plasma to maintain the arterial pressure is reached in that time.

Finally, embolization in these cases is safe because of the blood supply. The superior suprarenal artery arises from an inferior phrenic artery, the middle suprarenal artery originates in the aorta, and the inferior suprarenal artery comes from the renal artery. Hence, embolization of one of these branches rarely causes adrenal infarction [3, 10].

## Conclusion

Spontaneous pseudoaneurysms are very uncommon, so they are usually secondary to trauma. Moreover, unilateral pseudoaneurysms are even more infrequent and are associated with adrenal anomalies. In this case, we present a spontaneous round to oval unilateral adrenal haematoma secondary to a spontaneous pseudoaneurysm rupture, associated with anticoagulation.

In case of instability or risk factors of uncontrolled haemorrhage, as in this case, embolization is the best treatment option.

Suspicion of retroperitoneal haemorrhage secondary to an adrenal pseudoaneurysm in a patient presenting with hypotension is unlikely but still has to be considered.

## Author's statements

- The Authors declare that there is no conflict of interest
- Written informed consent for patient information and images to be published was provided by the patient.

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