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## Psoas hematoma in the elderly patient, a diagnostic challenge, a case report

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## ABSTRACT

**BACKGROUND:** A psoas hematoma is an uncommon condition in patients on anticoagulant therapy and patients with bleeding disorders. It can present itself with non-specific symptoms, as anemia, pain and hemodynamically instability. The CT angioscan is the diagnostic test of choice.

**CASE PRESENTATION:** We report a series of 3 cases of iliopsoas hematoma in older patients. These patients were all on anticoagulant therapy and presented with non-specific symptoms as pain in back or groin, anemia and weakness of the leg. These symptoms could be well explained by other, concurrent diseases. Moreover in one case it was not possible to obtain a reliable history due to cognitive impairment of the patient. In our cases the diagnosis of a psoas hematoma was made after performing many diagnostics or found fortuitously. All three patients recovered well after (temporarily) ceasing of anticoagulant therapy.

**DISCUSSION:** The diagnosis of a psoas hematoma is difficult, especially in elderly patients as illustrated in these cases. The symptoms of a psoas hematoma are often aspecific and can also be explained by other, comorbid diseases. Moreover, elderly patients often have an unusual presentation of illness and the presence of cognitive impairment compromises the reliability of a patients history. It is important to be aware of this diagnosis and perform a CT-scan when a psoas hematoma is possible.

**CONCLUSION:** A psoas hematoma is easily overlooked in older patients due to an unusual presentation of illness, comorbidity and cognitive impairment.

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## 1. Introduction

Psoas hematoma is a rare complication in patients using anticoagulation therapy and in patients with bleeding disorders. It can be elicited by trauma, but also appears spontaneously. Risk factors for developing a spontaneous psoas hematoma include anticoagulation therapy and old age [1–3]. The symptoms of a psoas hematoma are by themselves each non-specific and frequent in older patients. They can include anemia, pain in abdomen, back or groin, hemodynamic instability and leg paresis [1,4]. The CT angioscan (CTA) is the diagnostic test of choice [5]. In hemodynamically stable patients treatment includes the correction of coagulopathy, fluid resuscitation and blood transfusion. In the more severe cases endovascular intervention with coiling is needed to control the bleeding [1,5].

Our population is ageing, recent research by the World Health Organization showed that a threefold increase in people aged 80 years and older is expected in 2050 [6]. Also, the incidence of atrial

fibrillation and thus the use of anticoagulant drugs is expected to rise [7]. This can contribute to a rise in the incidence of psoas hematoma. We report a series of 3 cases, in which the diagnostic difficulty of psoas hematomas in the geriatric patient, is demonstrated. These cases are reported in line with the SCARE criteria [8].

## 2. Case report

1. A 93-year-old male was admitted to the emergency department with flank pain, hematuria and an inability to move his left leg. Two weeks before he had suffered a fall. Medical history revealed chronic renal insufficiency and atrial fibrillation, for which he was on warfarin. The patient was hemodynamically stable. Neurological examination showed weakness and hyper-sensitivity of the left leg. Laboratory investigation showed an anemia (Hb 6.6 mmol/l) and an INR at 3.8. The anemia could be well explained by the chronic renal insufficiency. The patient was admitted to the geriatric ward for diagnostics and adequate pain treatment. An ultrasound of the urinary tract was performed for ruling out injury of the urinary tract, since there was hematuria. It showed a hematoma of the left iliopsoas mus-

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cle, which explained both the paresis and the anemia. Warfarin was reversed with vitamin K. Painkillers were prescribed and the physical therapist was consulted. Six days after admission, the patient was discharged home with a referral for physical therapy at home.

- II. A 77-year-old male presented at the emergency department with a gradual decline in mobility, pain in back and leg and a loss of strength. The decline in mobility started five months prior, after a fall. The pain and loss of strength started two weeks prior. Following this, he fell again one day before admission. He was on antiplatelet therapy for stable angina pectoris. Upon physical examination a hematoma was seen on the medial side of the left upper leg. Laboratory investigation showed a Hb level of 5.2 mmol/l. An X-ray of the lumbar spine revealed a vertebral compression fracture of L4. Diagnostic tests also showed an infection of the urinary tract and an acute renal impairment. The patient was admitted to the geriatric ward and treated with blood transfusion, antibiotics and pain medication. Since the pain persisted, an MRI of the spine was performed to rule out the presence of compression of the nerve root. MRI showed compression fractures of L1 and L4 without nerve root compression. Because of a slow recovery from pain and impaired mobility, a CT scan of the abdomen was performed. This CT scan revealed a psoas hematoma. The patient recovered well and was discharged to a geriatric revalidation facility.
- III. A 99-year old female was admitted with progressive pain of her left hip. The pain was already present for a longer period of time, when it worsened a couple of days before admission. This history was not reliable, due to the cognitive impairment of this patient. Medical history revealed a transient ischemic accident for which she was on antiplatelet therapy. Physical examination showed pain in the upper leg on active movement. Laboratory testing showed a Hb level of 6.5 mmol/L. The patient was admitted, the differential diagnosis of the pain in her hip included arthrosis, lumbar spinal stenosis and malignancy. An MRI of the lumbar spine was performed because of persisting severe pain in the lower back and hip. The MRI revealed a compression fracture of L2. During rounds, a hematoma on the left upper leg was noticed. Therefore, a CT scan of the abdomen was conducted, and a psoas hematoma was found. Both the antiplatelet therapy and prophylactic heparin were stopped. The patient recovered and was discharged to a nursing home facility.

### 3. Discussion

We report on three cases of elderly patients who presented with complaints of pain in leg, back or hip and anemia due to a psoas hematoma. All three patients were on anticoagulant drugs, one was on warfarin, two on antiplatelet therapy. In two patients many diagnostics were performed before a definitive diagnosis was made. In one patient the hematoma was found fortuitously when an ultrasound of the urinary tract was performed. We were able to treat all patients conservatively with blood transfusion, vitamin K and ceasing of medication with good outcomes.

The diagnosis of a psoas hematoma is difficult, especially in elderly patients. The symptoms of a psoas hematoma are often aspecific and can also be explained by other, comorbid diseases, such as pain by vertebral compression fractures (II, III), or arthrosis (III) and anemia by renal insufficiency (I) [9]. Moreover, the elderly patient regularly has an unusual presentation of illness (II, III). Lastly, the presence of cognitive impairment poses a challenge in obtaining a reliable history from the patient (III).

Our cases illustrate the difficulties in diagnosing and treating the geriatric patient. Although our patients recovered well, it is important to realize that a psoas hematoma is a potentially lethal

disease [10]. Therefore, when an older patient on anticoagulants is presented at the emergency department after a recent trauma, followed by anemia, back pain and a decline in mobility, consider an hematoma of the iliopsoas and don't hesitate to perform a CT angio-scan.

### Declaration of Competing Interest

No conflict of interest.

### Funding

No funding involved.

### Ethical approval

This case report is exempt from ethnical approval in out institution.

### Consent

Written informed consent was not obtained from the patients. The head of our medical team has taken responsibility that exhaustive attempts have been made to contact the family and that the paper has been sufficiently anonymised not to cause harm to the patient or their family. A copy of a signed document stating this is available for review by the Editor-in-Chief of this journal on request.

### Author contribution

AG Posthuma: Conceptualization, Writing - Original Draft, Writing - Review & Editing.

M Hogervorst: Writing - Review & Editing.

BC van Munster: Conceptualization, Writing - Review & Editing, Supervision.

### Registration of research studies

Not applicable.

### Guarantor

BC van Munster.

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