



## Ischemic Orchitis, an Unusual Sign of Abdominal Aortic Aneurysm with the Risk of Tearing: A Case Report and Review of the Literature

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### ABSTRACT

**Introduction:** Abdominal Aortic Aneurysm (AAA) represents an important public health problem because of its prevalence and very high mortality associated with rupture. Timely diagnosis and treatment are essential to reduce the mortality rate associated with this disease.

**Case Presentation:** A 69-year-old man referred to our center because of severe left testicular pain and distal abdominal pain from two days ago. During examination, he had a non-expanding palpable mass in his lower abdomen with hypogastric tenderness and severe tenderness in the left testicle. On the initial evaluation, his systolic blood pressure was 160 mmHg, his diastolic blood pressure was 70 mmHg, and his heartbeat was 100 beats per minute. Hematocrit, hemoglobin, and creatinine concentrations were 32%, 10 g/dL, and 2.4 mg/dL, respectively. In addition, tumor markers such as Lactate Dehydrogenase (LDH), Alpha-Fetoprotein (AFP), and Beta Human Chronic Gonadotropin (BHCG) were negative in his preoperative laboratory tests. During the abdomen and pelvis ultrasound, an infrarenal abdominal aortic aneurysm with a diameter of 8 cm and a hyperheteroecho and isovascular mass measuring 35 \* 22 mm were detected in the left testicle. Mass or infarction following embolization was in the differential diagnosis. The patient was candidate for an emergency operation. AAA was repaired by aortobifemoral bypass surgery and left orchiectomy was done through a left inguinal incision. The left testicle specimen pathology report was ischemic orchitis, which might have resulted from the emboli of the aortic aneurysm to the testicle.

**Conclusions:** Aortic aneurysm with the risk of rupture could present with some unusual symptoms, such as testicular pain, and every surgeon should be aware of this symptom for early diagnosis and treatment.

### 1. Introduction

Abdominal Aortic Aneurysm (AAA) refers to the dilatation of the abdominal aorta greater than 1.5 times its normal diameter (1). AAA is a potentially severe disease that affects the patients over 50 years of age and is frequently associated with hypertension or familial history of aneurysm. AAA affects approximately 5% of males and 1% of females over the age of 60 years (2). Some patients have a history of back pain or abdominal pain, but most of them remain asymptomatic. The prognosis following AAA rupture is poor, and most patients die before arriving at

the hospital. The operative mortality rate for emergency AAA repair is high, as well. The overall mortality rate of ruptured AAA has been reported to be more than 80% (3). In males over the age of 65 years, AAA is responsible for more than 175,000 deaths (one percent) worldwide (4). The mortality rate because of ruptured AAA is also very high and varies between 60% and 80%. Hence, early diagnosis and treatment prior to rupture is of particular importance (5). In asymptomatic patients, AAA may be detected during a routine screening abdominal ultrasound. Ruptured or leaking aneurysms can be fatal unless rapidly diagnosed and appropriately treated. The common presentations include abdominal or back pain and a pulsatile abdominal mass associated with hemodynamic instability or shock. Having knowledge about the multiple and different signs

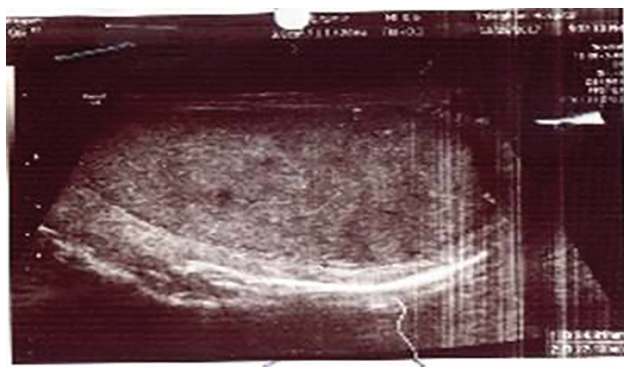
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and symptoms of AAA can help diagnose asymptomatic patients, prevent AAA rupture, and lower the mortality rate. Pressure effect of hematoma or enlarged aneurysm into testicular neural fibers could induce testicular pain. In addition, testicular infarction due to distal embolization from aneurysms can sometimes induce testicular pain. Thrombus formation in the aneurysm and distal embolization could also induce multiple signs and symptoms, such as testicular infarction and testicular pain. The present report aims to re-emphasize the need for having a high index of suspicion for this rare complication of AAA in patients who present with testicular pain and abdominal pain, especially older ones.

## 2. Case Presentation

A 69-year-old man referred to our hospital with severe left testicular pain, which had increasingly hurt him for two days. In the first visit, he complained about distal abdominal pain. During examination, his systolic blood pressure was 160 mmHg, his diastolic blood pressure was 70 mmHg, and his heartbeat was 100 beats per minute. A non-expanding palpable mass with hypogastric tenderness in the abdomen and severe tenderness in the left testicle were felt, but the right testicle was normal. The patient had a past history of ischemic heart disease and was a heavy smoker (40 packs/year). His hematocrit, hemoglobin, and creatinine concentrations were 32%, 10 g/dL, and 2.4 mg/dL, respectively. His EKG showed the evidence of an old heart attack, while his chest X-ray was normal. During the abdomen and pelvis ultrasound, an infrarenal abdominal aortic aneurysm with a diameter of 8 cm and a hyperheteroecho and isovascular mass measuring 35 \* 22 mm were detected in the left testicle (Figure 1). Mass or infarction following embolization were in the differential diagnosis. Testicle tumor markers, such as Lactate Dehydrogenase (LDH), Alpha-Fetoprotein (AFP), and Beta Human Chronic Gonadotropin (BHCG), were checked and the results were negative.

The patient was admitted to ICU and because of the development of abdominal pain, he was candidate for an emergency exploratory surgery. He underwent laparotomy through a midline incision. The findings included a massive juxta-renal abdominal aortic aneurysm with a middle retroperitoneal and pelvic and left side hematoma. Thus, ruptured AAA was diagnosed. The aneurysm was repaired by aortobifemoral bypass surgery using a 18 \* 9 mm bifurcated dacrone graft because of the inappropriate



**Figure 1.** Sonographic Imaging of the Patient Showing a Hyperheteroechoic and Isovascular Lesion Suggestive of Testicular Infarction

anatomy and calcified vessels. Left orchietomy was also done through a left inguinal incision. At the end of the operation, the patient was transferred intubated to ICU with normal vital signs. He went through a relatively good post-operative period, but unfortunately, he had sudden cardiac arrest three days after the operation probably because of acute Myocardial Infarction (MI) and expired. It should be noted that primary percutaneous cardiac intervention could not be carried out for him. The left testicle specimen analysis reported ischemic orchitis, which might have resulted from the emboli of the aortic aneurysm to the testicle.

## 3. Discussion

Ruptured AAA is one of the important surgical situations, and impending ruptures and symptomatic aneurysms are equally important. Therefore, vascular surgeons should search for these symptoms and do efficient operation at the right time to prevent the related mortality and morbidity. The survival rate of the patients who arrive at the hospital has been reported to be approximately 50% (6). Most patients are older than 50 years and mostly have the symptoms of severe abdominal pain, palpable mass, and hypovolemic shock. Other rare symptoms include renal colic, testicular pain, diverticulitis, gastrointestinal bleeding, and spinal arthritis (6, 7). Another symptom is distal embolization to other organs, including the testis. The present study was conducted on one of these patients. Until now, only 10 cases with ruptured AAA were presented with testicular pain. They were all referred to a hospital with the symptom of testicular pain (8, 9). Ischemic testicle was not reported among these cases, and the pain was associated with the pressure effect of the hematoma, increased size of the aortic or iliac aneurysm, or aortic dissection into testicular neural fibers (10). These fibers extend from the pelvic splanchnic nerves into the hypogastric plexus and lumbar and thoracic roots of the spinal cord (9). Other uncommon symptoms that may suggest ruptured AAA include temporal paralysis of the lower limb, right hypochondrial pain, nephroureterolithiasis, groin pain, blue scrotum or Bryant sign, iliofemoral venous thrombosis, and inguinoscrotal bulging, which might be confused with inguinal hernia (11). Hence, all patients presenting with testicular pain are recommended to undergo a detailed examination of the abdomen. Emergency personnel should also be aware of this rare symptomatology of this lesion that is lethal if not diagnosed and treated soon (9). Unlike the abovementioned investigations, the present case had testicular pain because of distal embolization and testicular infarction, but testicular pain resulted from the pressure on testicular nerves in the pelvic.

### 3.1. Conclusion

Considering the high mortality and morbidity rates of ruptured AAA and that aortic aneurysms with the risk of rupture could present with some unusual symptoms such as testicular pain, every surgeon should be aware of this symptom for early diagnosis and treatment.

### 3.2. Informed Consent

Before the writing of the manuscript, the patient was asked

to sign the informed consent.

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### Authors' Contribution

MH: study design and concept, drafting the manuscript, and critical revision of the manuscript for important intellectual content. PB: drafting the manuscript, critical revision of the manuscript for important intellectual content, and acquisition of data. MP: acquisition of data and drafting the manuscript.

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