SHORT REPORT

Chronic Contained Rupture of an Abdominal Aortic Aneurysm: a Case Report and Review of the Literature

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Introduction

Chronic contained rupture of an abdominal aortic aneurysm (AAA) is an unusual but recognised entity. Differentiation from other modes of presentation of an AAA, i.e. asymptomatic non-acute, symptomatic acute non-ruptured and acutely ruptured, can be of importance in determining the appropriate management. We present a case of chronic contained rupture managed by semi-urgent repair, followed by a review of the literature.

Case Report

A 73-year-old male ex-smoker presented to his GP with a six-week history of back pain and weakness in his left leg. He was taking bendrofluazide for hypertension. There was no history of myocardial infarction, angina or cerebrovascular disease. His general practitioner diagnosed sciatica, and arranged a lumbar spine X-ray (Fig. 1). The appearances of a calcified abdominal aorta along with a large soft tissue mass anterior to the lumbar spine led to an urgent surgical referral.

On initial assessment his pulse ws 70/min, BP 170/110 mmHg. He was obese but abdominal examination was otherwise unremarkable. He had diminished sensation over the left anterior thigh and reduced power of hip flexion and knee extension on the left side consistent with a femoral neuropathy. An urgent abdominal CT scan (Fig. 2) showed a 13 cm infrarenal
rupture. Recurrent leaks will lead to a whorled or “onion skin” appearance. Chronicity of the rupture is suggested by the clinical presentation and is confirmed at operation by the presence of organised thrombus within an extra-mural mass, which communicates with the abdominal aorta.

The clinical features of the cases reported are summarised in Table 1. It is interesting to note that all but one of these reports have been in men. This compares with elective and acutely ruptured AAA repair, where 30% and 25% respectively are in women. Hyper-tension is noted in about 20%. Although its relative infrequency in comparison to series of acute rupture has been suggested as a reason for the containment of haemorrhage, this may simply represent under-reporting. Vertebral destruction on lumbar spine imaging is commonly seen (approximately 30% of cases), as might be expected given the preponderance of AAA, with a large, poorly enhancing soft tissue mass posterior contained rupture. By comparison only 2% arising from and continuous with the left postero-lateral aspect of the aneurysm and extending into the left iliac fossa. The features were suggestive of a contained AAA rupture.

Laparotomy on the evening of admission confirmed a large retroperitoneal mass filling the left iliac fossa, and arising from the abdominal aorta. The mass contained white/grey organised thrombus. There was no evidence of intra-peritoneal or extra-peritoneal blood or haematoma. On opening the AAA there was a 2-cm rupture in its lower left postero-lateral aspect which communicated with the thrombus collection. The abdominal aneurysm was repaired with a 20 mm straight soft woven Dacron aortic graft (Bard Ltd., Crawley, W. Sussex, U.K.). The retroperitoneal mass was left undisturbed. The patient made an uneventful recovery and remains well six months later. His left femoral neuropathy has resolved completely.

**Discussion and Literature Review**

Since Szilagyi’s initial description of seven “sealed ruptures” of abdominal aortic aneurysms simulating intra-abdominal sepsis, there have been sixteen other reports presenting the details of a further 43 cases of chronic contained ruptures. Haemorrhage is typically walled off in the retroperitoneal fascial planes posterior and lateral to the aorta, leading to the presence of organised thrombus outside the aortic wall. CT appearances are variable, and may be similar to those seen in patients with acute presentations. A soft tissue mass may be seen arising from the aortic wall silhouetteing the psoas muscle. There may be a breach in calcification in the aortic wall at the site of rupture. Recurrent leaks will lead to a whorled or “onion skin” appearance. Chronicity of the rupture is suggested by the clinical presentation and is confirmed at operation by the presence of organised thrombus within an extra-mural mass, which communicates with the abdominal aorta.

The natural history of chronic, contained rupture is uncertain. Although the suspected time interval from onset of rupture to presentation is of the order of 42 days, chronicity of rupture has been confirmed radiologically in only a handful of cases by review of prior imaging. Once diagnosed, the majority of reported cases have been operated on without delay. Long-term survival (>6 months) has been reported in radiologically proven chronic contained ruptures left unoperated on for reasons of co-morbidity and in previously undiagnosed ruptures discovered on review of previous CT scans. The number of reported...
cases is too small to detect differences in surgical outcome between those cases repaired urgently, semi-urgently and electively. Given, however, that the results of planned repair of AAAs are generally superior to those of urgent repair,\(^\text{21}\) it seems advisable that, once diagnosed, repair of a chronically contained ruptured AAA should proceed as a planned event, allowing time for adequate pre-operative preparation and the gathering of appropriately skilled personnel.

**References**