REFLECTIONS ON PREHOSPITAL CARE

Neurological symptoms occurring in the context of ruptured abdominal aortic aneurysm: a paramedic's perspective

David Fitzpatrick, Donogh Maguire

Emerg Med J 2007;**24**:669–670. doi: 10.1136/emj.2007.049817

Ruptured abdominal aortic aneurysm (RAAA) classically presents with sudden onset, severe ripping or tearing abdominal pain radiating through to the back. This case report describes features of an atypical presentation of a patient with RAAA and highlights the difficulties and uncertainties surrounding the prehospital assessment, appropriate treatment and management of these patients. All prehospital care educators and practitioners should be made aware of the wide spectrum of clinical manifestations for this condition.

An ambulance crew was requested to attend a 73-year-old male found collapsed in a motor vehicle. The patient was found slumped forwards over the steering wheel. There was no history or evidence of trauma. On examination the patient responded to voice, his airway was clear, respiratory rate was 36 with equal air entry bilaterally, and radial pulses were impalpable. He was diaphoretic, pale and had an obvious left sided hemiplegia. High-flow oxygen was delivered via a non-rebreathing face mask (fractional inspired oxygen (FiO_2) 0.85) and the patient was rapidly extricated from the vehicle.

In the ambulance, lying supine, the hemiplegia unexpectedly resolved with the patient regaining power on his left side, Glasgow Coma Score improved to E4, M6, V2. Dysarthria resulted in the patient communicating non-verbally with nods of the head. He denied head, chest or abdominal pain. Systolic blood pressure was 82 mm Hg; a three lead ECG displayed a broad complex tachycardia of 131 beats/min. A 12 lead ECG, performed en route to the emergency department (ED), revealed an atrial tachycardia with right bundle branch block. Oxygen saturation via pulse oximetry was 91% with ongoing administration of high flow oxygen. A standby was arranged with the local ED, intravenous access was established, and fluid resuscitation commenced en route. The total time from arrival at scene to arrival at hospital was 17 min.

In the ED the patient began vocalising, complaining of abdominal and back pain and loss of feeling in his legs, which had become notably pale. Assessment of the abdomen revealed a faintly palpable, pulsating mass in the epigastric region. Rapid infusion of 500 ml bolus of colloids and O negative blood were administered in an attempt to maintain the blood pressure while awaiting definitive surgical intervention. Despite all efforts pulseless electrical activity ensued and the patient died.

DISCUSSION

In Scotland in 2005, ruptured abdominal aortic aneurysm (RAAA) caused the deaths of 313 patients, and in the period 2005–06 almost 2000 new patients were diagnosed with this potentially life-threatening condition (J Quinn, ISD Scotland Healthcare Information Group, personal communication, 2007). Classically patients present with sudden onset, severe

ripping or tearing abdominal pain radiating through to the back.¹ Neurological complications occurring as part of the clinical picture have been described in the literature.² One study suggests that diagnosis of aortic dissection in hospital is missed in up to 38% of patients on initial assessment with many, up to 28%, of diagnoses being made only at postmortem examination.² It is therefore not surprising that difficulties are experienced when assessing and treating this condition in the prehospital environment. This case study demonstrates the rapidly changing clinical condition and varied neurological presentations of a patient with RAAA and how an atypical presentation can divert attention from the correct underlying diagnosis. The attending paramedics were influenced by two presenting features: firstly, the intermittent hemiplegia; and secondly, the lack of abdominal pain.

The hemiplegia on initial examination led the ambulance crew to believe the patient had suffered a cerebral vascular accident. However, neurological problems can be associated with aortic dissection, with an incidence of 18–30%,³ and are often caused by spinal artery involvement. In this case postmortem results excluded this as a cause but did identify significantly arteromatous vessels extending from the aortic arch. It is likely that this patient's intermittent hemiplegia was caused by cerebral hypoperfusion related to narrowed arteromatous carotid vessels and systemic hypotension. As a result, postural changes from the upright to supine position restored pressure in the cerebral vessels leading to the resolution of hemiplegia.

Severe abdominal pain is often the initial symptom of RAAA,¹ but is reportedly absent in up to 15% of cases.² The reasons behind these painless presentations are not yet fully understood.⁴ In this case, the absence of abdominal pain resulted in the ambulance crew focusing on the associated neurological problems. This highlights the need to educate ambulance staff to consider a differential diagnosis of RAAA in patients presenting in this or similar ways.

CONCLUSION

This atypical presentation of RAAA highlights the difficulties and uncertainties surrounding the prehospital assessment, appropriate treatment and management of these patients. Current prehospital care education in this subject is lacking, which results in reduced clinical awareness, possibly prolonged on scene and transportation times, and ultimately delayed definitive care. Fortunately, in this case, there was no delay in response, treatment or speed of transportation to the ED. If we are to reduce the mortality rates of patients suffering from RAAA it is essential that all prehospital care educators and

Abbreviations: ED, emergency department; RAAA, ruptured abdominal aortic aneurysm

ambulance staff are made aware of the wide spectrum of clinical manifestations for this condition.

ACKNOWLEDGEMENTS

The authors would like to thank Dr Edward Duncan for his advice and editorial expertise during the writing of this paper and Ms Wendy Tait who assisted in the management of the case.

Authors' affiliations

David Fitzpatrick, Scottish Ambulance Service Research and Development Officer, NMAHP Research Unit, Department of Nursing & Midwifery, University of Stirling, Stirling, UK
Donogh Maguire, Wishaw General Hospital, Wishaw, Lanarkshire, UK

Competing interests: None declared.

Correspondence to: David Fitzpatrick, NMAHP Research Unit, Department of Nursing & Midwifery, University of Stirling, Stirling, FK9 4LA, UK; david.fitzpatrick@stir.ac.uk

Accepted 8 May 2007

REFERENCES

- 1 **DeBakey ME**, Cooley DA, Creech O Jr. Surgical considerations of dissecting aneurysms of the aorta. *Ann Surg* 1955;**142**:586–612.
- 2 **Spittel PC**, Spittel JA Jr, Joyce JW, *et al*. Clinical features and differential diagnosis of aortic dissection: experience with 236 cases (1980 through 1990). *Mayo Clin Proc* 1993;**68**:642–51.
- 3 **Sabin JA**, Vazquez J, Sala A, *et al*. Neurologic manifestations of dissecting aneurysm of the aorta. *Med Clin (Barc)* 1989;**92**:447–9.
- 4 **Gerber O**, Heyer EJ, Vieux U. Painless dissections of the aorta presenting as acute neurologic syndromes. *Stroke* 1986;**17**:644–7.

IMAGES IN EMERGENCY MEDICINE

Typhlitis with clinical presentation mimicking appendicitis

Richard Kuo, Chin-Yin Sheu, Fei-Shih Yang

A 62-year-old woman presented with diffuse persistent low abdominal pain with fever (38.8°C). She had acute myelogenous leukaemia and had received her first course of consolidation chemotherapy 1 week previously. The physical examination found severe right lower quadrant tenderness with rebounding pain. Blood analysis revealed a white blood cell count $200 \times 10^6/l$. Abdominal computed tomographic (CT) scan revealed circumferential wall thickening of the caecum and terminal ileum (fig 1). The CT findings under this clinical setting were consistent with typhlitis. Broad spectrum antibiotics were administered and the symptoms gradually dissipated within a few days. Typhlitis—also called neutropenic enterocolitis—is characterised by inflammation of the caecum and terminal ileum as a result of bowel wall invasion by intestinal organisms due to impaired host

defences. The clinical presentation of typhlitis is similar to appendicitis, but in most patients symptoms resolve after correction of the neutropenia and conservative treatment with bowel rest and broad spectrum antibiotics. However, if the clinical condition deteriorates despite aggressive supportive treatment, surgical intervention is indicated. Familiarity with the typical clinical setting and CT findings may help to prevent unnecessary laparotomy.

Emerg Med J 2007;**24**:670.
doi: 10.1136/emj.2006.041608

Authors' affiliations

R Kuo, C-Y Sheu, F-S Yang, Department of Radiology, Mackay Memorial Hospital, Taipei, Taiwan

Correspondence to: Dr Chin-Yin Sheu, Department of Radiology, Mackay Memorial Hospital, 92, Section 2, Chungshan North Road, Taipei, Taiwan; kuorichardkuo@yahoo.com.tw

Figure 1 Contrast-enhanced abdominal computed tomographic scan revealing circumferential bowel wall thickening of the caecum (arrowhead) and terminal ileum with a target appearance (arrow) associated with perifocal mesenteric strandings, suggestive of oedematous change caused by inflammation.

Accepted 30 August 2006

Competing interests: None declared.