The acute abdomen and its management

Emergency referrals represent nearly 50% of general surgical practice. The acute abdomen makes up the bulk of these emergency referrals. As in all branches of medicine a number of seemingly straightforward questions need to be answered.

1. Is the patient sick?
2. What is the diagnosis?
3. Can the problem be treated successfully?

The answer to the first question is usually clearly apparent, whereas the answer to the second two questions may only be found at laparotomy. In addition to these questions, when considering the acute abdomen a decision must be made as to whether surgical intervention is required and how urgently.

PRESENTATION

Common presenting symptoms and signs of the acute abdomen include abdominal pain, altered bowel habit, vomiting, abdominal distension, gastrointestinal haemorrhage, pyrexia, tachycardia and hypotension. The site and nature of the abdominal pain often provides a clue to the underlying pathology. The other signs and symptoms of the acute abdomen are frequently non-specific and special investigations may be required to help establish the diagnosis. A careful history including details of medication and past medical and surgical history should be taken. Examination along with appropriately selected special investigations aid the clinician in the diagnosis.

It is important in the history not to overlook past medical and surgical history. Skinner et al report in this issue (p. 740) that an unexplained prior thrombotic episode can alert the clinician to a possible thrombotic cause for the acute abdominal presentation. Venous thrombosis of the portal circulation is a rare cause of an acute abdomen and is difficult to diagnose because of its insidious symptom onset and lack of signs. Splenomegaly or a previous history of venous thrombosis should raise the suspicion of portal thrombosis.

A patient who presents with an acute abdomen following recent abdominal surgery should be considered most likely to be experiencing a complication from the previous procedure until proven otherwise. This was true in the case presented by Salih and Insall in this issue (p. 742). New techniques such as laparoscopic cholecystectomy are often associated with new complications and this is certainly the case with spilled gall-stones that can lead to intra-abdominal abscess formation (Hui et al, 1999). A review of the operation notes from the previous surgery can provide a clue to the nature of the complication.

SPECIAL INVESTIGATIONS

The routine investigations for the acute abdomen include the following:

- Full blood count with differential white count
- Urea, electrolyte, glucose and amylase measurement
- Urine analysis including nitrites
- Erect chest and supine abdominal films.

In addition to these, other tests can be helpful:

- Liver function tests (to rule out pancreatitis and suspected hepatic disorders)
- Abdominal ultrasound (to rule out obstructive jaundice and abdominal masses)
- Computed tomography scanning (to rule out abdominal masses, particularly in the obese)
- Contrast radiology (for differentiation between mechanical and pseudo-obstruction)
- Mesenteric angiography (to rule out gastrointestinal haemorrhage)
- Endoscopy (to rule out gastrointestinal haemorrhage).

The availability of investigations out of hours has gradually increased over the last 20 years. This has enabled better diagnosis and planning of surgery in the acute abdomen.

Pelvic masses may mimic acute urinary retention; if urinary catheterization does not yield a large volume of urine and resolve the problem, ultrasound or computed tomography scanning will help make the diagnosis (Moreno-Gallego et al, 1997). Riaz et al report in this issue (p. 739) of a case of rectus sheath haematoma masquerading as an enlarged urinary bladder that highlights this.

CONCLUSIONS

The National Confidential Enquiry into Perioperative Deaths (NCEPOD) reports have identified shortcomings in the management of acute surgical admissions (Campling et al, 1990). The principal areas of concern were:

- Inappropriate out-of-hours operating
- Lack of preoperative optimization particularly in elderly patients
- Surgeons and anaesthetists with inadequate experience operating on emergencies
- Lack of adequate recovery, high dependency units and intensive care units.

There is still a lack of high dependency unit and intensive care unit beds throughout the country but the other areas have been addressed and corrected.

The most important early decisions are first does the patient need urgent

lifesaving surgical intervention, second if intervention is required do they need preoperative optimization and third is the patient so frail that surgical intervention will almost certainly lead to death and the patient and family should therefore be counselled accordingly.

It is vital to approach the acute abdomen considering the patient as a whole, with careful review of past medical and surgical history and the appropriate use of special investigations.

The acute abdomen is a Pandora's box and we must anticipate the unexpected. HM

Paul Carter
Consultant Surgeon
The Royal Liverpool Univesity Hospital
Liverpool L7 8XP

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Moreno-Gallego A, Aguayo JL, Flores B, Soria T, Hernadez Q, Ortiz S, Gonzalez-Costea R, Parrilla P (1997) Ultrasonography and computed tomography reduce unnecessary surgery in abdominal rectus sheath haematoma. *Br J Surg* **84(9):** 1295–7

KEY POINTS

- The acute abdomen represents a significant proportion of general surgical emergency workload.
- The patient must be considered as a whole and in particular careful details of previous medical and surgical history should be taken.
- Special investigations when used appropriately can be helpful in both diagnosis and the planning of surgery.
- Try to anticipate the unexpected; diagnosis, careful history, examination and special investigations often provide the clue.