

frequency of AIO in those with Hirschsprung's disease. In a series of 871 children who were appendectomized, 1.3% of them developed AIO, and this was highest (3.4%) in those who had perforated appendicitis.⁵ The interval between initial surgery and development of AIO is also variable. In one series, 80% of patients developed AIO within 3 months of initial operation.⁴ On the other hand over 80% of Janik et al² series developed AIO within 2 years of the initial laparotomy. The mean interval from initial operation to presentation in our series was 1.2 years, and 79.2% developed AIO within one year of initial operation, but one of our patients developed AIO 7 years after initial surgery. The diagnosis of AIO is not difficult to make, but the treatment is still controversial. Conservative treatment forms the basis of management for AIO in adults and fever, leucocytosis, or localized abdominal tenderness, or both or complete intestinal obstruction has been set as indications for surgical intervention. This however is not the case in the pediatric age group where the treatment is still controversial. For many years, it has been stated that there is no place for conservative treatment in infants and children with AIO, and to obviate delay in treatment with its attendant risks, increased morbidity and mortality, early surgical intervention was advocated.^{3,4} As a result of this aggressive surgical approach a notable decrease both in morbidity and mortality was reported.³ In our series, only 2 (8.3%) responded to conservative treatment, and 6 (30%) required intestinal resection. It is however, difficult to speculate whether this 30% resection rate could have been reduced by early surgical intervention in our patients. Although our series is small, we like others feel that conservative treatment has a limited place in the management of infants and children with AIO.

Further studies, however are required to substantiate this. With the recent advances in the diagnostic and therapeutic laparoscopy, laparoscopic management of AIO in children is now feasible, safe and an increasingly utilized form of therapy.⁶ Being less invasive, laparoscopy should prove valuable towards early surgical intervention in children with AIO.

Received 9th February 2003. Accepted for publication in final form 12th March 2003.

From the Division of Pediatric Surgery, Department of Surgery, Qatif Central Hospital, Qatif, Kingdom of Saudi Arabia. Address correspondence and reprint requests to Dr. Ahmed H. Al-Salem, PO Box 61015, Qatif 31911, Kingdom of Saudi Arabia. Tel. +966 (3) 8426666. Fax. +966 (3) 8630009. E-mail: asalem56@hotmail.com

References

- Hofstetter SR. Acute adhesive obstruction of small intestine. *Surg Gynecol Obstet* 1981; 152: 141-144.
- Janik JS, Ein SH, Filler RM et al. An Assessment of the surgical management of adhesive small bowel obstruction in infants and children. *J Pediatr Surg* 1981; 16: 225-229.
- Festen C. Postoperative small bowel obstruction in infants and

children. *Ann Surg* 1982; 196: 580-583.

- Wilkins BM, Spitz L. Incidence of postoperative adhesion obstruction following neonatal laparotomy. *Br J Surg* 1986; 73: 762-764.
- Ahberg G, Bergdahl S, Retuist J, Soderquist C, Frenckner B. Mechanical small bowel obstruction after conventional appendectomy in children. *Eur J Pediatr Surg* 1977; 7: 13-15.
- Vasder Zee DC, Bax NM. Management of adhesive bowel obstruction in children is changed by laparoscopy. *Surg Endosc* 1999; 13: 925-927.

Ultrasound as a primary tool to evaluate patients with blunt abdominal trauma

F Hassan A. Musa, MSc(UK), FRCSI.

Fifty-five cases of patients with blunt abdominal trauma (BAT) treated at Wrexham Maelor Hospital, United Kingdom, between February 1996 and February 1998 were studied retrospectively. Ultrasound was performed in all patients in the Radiology Department which is in the complex of Accident and Emergency (A&E) building a few meters from the resuscitation rooms. US was carried out by radiologist using toshiba machine with a 3.5MHz transducer. The objectives of the examination were screening for intra-abdominal fluid and solid organ injury. True-positive (TP), true-negative (TN), false-positive (FP), and false-negative (FN) rates were determined. These rates were used to calculate the sensitivity (TP/TP+FN), specificity (TN/TN+FP) and accuracy (TP+TN/TP+TN+FP+FN) of US. Positive predictive value (PPV) (TP/TP+FP), and negative predictive value (NPV) (TN/TN+FN) was also calculated. Fifty-five cases of patients with BAT, who were treated at Wrexham Maelor Hospital, from February 1996 through to February 1998 was analyzed. There were 33 males (60%) and 22 female (40%) patients, with a mean age of 36.4 years (range 4-85 years). Associated injuries occurred in 40 patients (72.6%). Road traffic accidents accounted for 59.5% of injuries. Falls accounted for 29%, assault accounted for 7.2%, trauma inflicted by animals accounted for 7.2% and convulsions accounted for 1.8%. Ultrasound examination was performed within 5-30 minutes of patient admission to A&E Department. The time required to complete the examination was 5-10 minutes. The presence of free fluid collection was observed in 7 cases. Liver contusion and hematoma was detected in 2 cases. Splenic parenchymal damage and hematoma was observed in 6 cases. Sixteen patients had positive US examinations, and 39 patients had negative US examinations. One patient with positive US finding underwent a computed tomography scan examination which was negative, and this was the only false-positive US finding in this study. Thirteen patients (23.5%) out of 55 patients underwent surgery, 12 patients with positive US results and one with a negative US result. In this study the US sensitivity is 94% with a PPV of 0.94.

US specificity is 97.4% with a NPV of 0.97 and accuracy of 96.4%.

The immediate goal of abdominal assessment after multiple system blunt trauma is rapid determination of the necessity for urgent surgery. A diagnostic screening test for abdominal injury should have both a high sensitivity and a high NPV for the need for acute laparotomy. Ultrasound satisfy these criteria and combined with its speed and non-invasive nature makes it a power tool in the initial assessment of trauma victims. Several studies in the literature refer to the potential cost savings when US is used for BAT.¹ Ultrasound technology has evolved to the point that extensive training and specialization are not required to master specific techniques, thereby making it very suitable for use in trauma resuscitation area.^{2,3} From Kuwait, Abu-Zidan et al,⁴ prospectively evaluated US on 53 patients and found a sensitivity of 85%, a specificity of 100% and an accuracy of 95%. They concluded that US is an accurate and safe method for screening patients With BAT. Hoffman et al⁵ favoured US for initial approach to patients with BAT. The results of this study indicate that US is a highly accurate means to objectively evaluate the abdomen in BAT patients. In this study, US detected 94% of injuries (sensitivity). It also identified 97.4% of the 39 patients without intra-abdominal injury (specificity), and overall accuracy of 96.4%. So the sensitivity, specificity and accuracy in this study are consistent with those studies from North America, Europe and Asia.¹⁻⁵ On the basis of the results of this study, US meets the criteria of useful diagnostic test in blunt trauma patients. It provides diagnostic information that is not available from physical examination or plane film x-ray studies. It can be obtained rapidly and integrated easily into the resuscitation. It is easily repeated, portable and fast which makes it suitable for evaluating large numbers of patients , less stable patients and patients undergoing other diagnostic and therapeutic procedures. Ultrasound should not be used at the exclusion of other Diagnostic modalities or clinical judgment but in combination with them .

Ultrasound is a sensitive, specific and accurate test with which to evaluate patients with abdominal injury requiring surgery. Routine abdominal US can be performed at bedside in emergency departments as a timely, non-invasive diagnostic test. This use of screening abdominal US examination can improve clinical decision-making for the use of emergency laparotomy. The results of this study support the continued use of trauma US as the primary technique for the assessment of abdominal trauma.

Received 18th November 2002. Accepted for publication in final form 31st March 2003.

From the Department of Surgery, Wrexham Maelor Hospital, Wrexham, United Kingdom. Address correspondence and reprint requests to Dr. Hassan A. Musa, Consultant Surgeon, PO Box 6019, Taif, Kingdom of Saudi Arabia.

Tel. +966 (2) 7364899. Fax. +966 (2) 7327813. E-mail: hassanmusa@hotmail.com

References

1. Branney SW, Moore EE, Cantrill SV, Burch JM, Terry SJ. Ultrasound based key clinical pathway reduces the use hospital resources for the evaluation of blunt abdominal trauma. *J Trauma* 1997; 42: 1086-1090.
2. Gievr S, Kessler S. The evaluation of blunt abdominal trauma: the evolving role of ultrasound. *Mt Sinsi J Med* 1997; 64: 184-188.
3. Foo E, Su JW, Menon D, Tan D, Chan ST. A prospective evaluation of surgeon performed sonography as a screening test in blunt abdominal trauma. *Ann Acad Med Singapore* 2001; 30: 11-14.
4. Abu-Zidan FM, Zayat I, Sheikh M, Mousa I, Behbehani A. Role of ultrasonography in blunt abdominal trauma: a prospective study. *Eur J Surg* 1996; 162: 361-365.
5. Hoffman R, Nerlich M, Muggia-Sullam M, Pohlemann T, Wippermann B, Regel G et al. Blunt abdominal trauma evaluated by ultrasound: a prospective analysis of 291 patients. *J Trauma* 1992; 32: 452-544.

SARS: The emergence of a new epidemic

Fahad A. Al-Ateeg, MHA, M.Ed.

At this moment the world health community is struggling to cope with a severe and rapidly spreading new disease in humans, severe acute respiratory syndrome (SARS). So far, the new disease has been diagnosed in more than 28 countries worldwide. It appears to be the first severe and easily transmissible new disease to emerge in the 21st century. What distinguishes the international health community response to this epidemic is the almost instantaneous communication and information exchange that supported every aspect of the response. The World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and national and local health agencies across the globe have disseminated up-to-the-minute information tailored for clinicians, public health officials, health care workers, travelers, household contacts, and many other affected parties. As SARS is moving too fast for traditional medical journals to stay on the top of the story, this brief report documents the chain of events in the emergence of the new epidemic, the state of clinical and virologic knowledge at the outset of this epidemic, diagnostic procedures, treatment and preventive measures based on information collected from the instantaneous and revolutionary information exchange of the world wide web.

The chain of events began on February 11, 2003 when the Chinese Ministry of Health officially informed the WHO of an outbreak and reported 305 cases of acute respiratory syndrome of unknown cause that occurred in 6 municipalities in Guangdong province in southern China. Five deaths were reported, and transmission was particularly prevalent among health care workers and