Basic principles of Intensive Care medicine for junior physicians

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The 4th edition of ‘Fundamental Critical Care Support’, with contributions by 46 experts, is the textbook for the FCCS Course in the Netherlands. This course, which concludes with an examination, is primarily designed for junior physicians (ANIOS), to learn about the basic principles of Intensive Care medicine. In addition, residents in internal medicine, emergency medicine and surgery are also eligible to follow this course. The FCCS course book is a good preparation for this course, and it functions as an excellent reference book.

The book consists of two parts. Part One contains sixteen chapters dealing with the essential principles of diagnostic procedures and management of intensive care-related pathology. The main subjects are airway pathology and management, treatment of cardiovascular disease, cardiopulmonary and cerebral resuscitation, and the diagnosis and treatment of shock and life-threatening infections. Additional chapters deal with the recognition and assessment of seriously ill patients, treatment on the ICU of neurological emergencies, intensive care during pregnancy and basic principles of care of children on the ICU. The chapter ‘Special Considerations’ describes some specific clinical pictures and one chapter is devoted to ethics on the intensive care unit.

Every chapter starts off with a short summary of outlines which will be taken into consideration. This is followed by a case study which is the contextual basis for further discussion. The texts are formulated clearly and classification of chapters is well-organized. Important remarks are mentioned in separate text boxes. Every chapter ends with a list of ‘key points’, followed by ‘suggested reading’ of both literature and online publications.

Part Two contains seventeen appendices, in which indications, contra-indications and step by step actions are described for clinical procedures that are frequently performed on an ICU. Examples are the insertion of a central venous catheter, endotracheal intubation, performing a thoracostomy and cardioversion. Pictures, tables and flow-charts illustrate the text.

The book is designed in an American style with tables, clear enumerations and accents in separate text boxes. This set up makes the book clearly structured and very accessible to the reader.

A disadvantage is the descriptions of the American medication strategies and dosage (especially antibiotics) that sometimes vary greatly from Dutch guidelines. The use of the index is somewhat hampered by the many pages that are referred to after each keyword.

In conclusion, this textbook and the associated Dutch Fundamental Critical Care Support course form a stable basis for all physicians for whom the ICU is a new work area.

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The CT scan shows dilated loops of small and large intestine, with gas-fluid levels. There is ascites but no evidence for abscesses or perforation.

Gas is present in the wall of the small and large intestine, so-called pneumatosis intestinalis (PI). Our patient was scheduled for urgent exploratory laparotomy. A distension of the coecum with imminent perforation and a perforation of the ileum at the previous resection site was seen. Ileocele resection and segmental resection with primary anastomosis of the ileum was performed. Furthermore, a diverting ileostomy was created. In the resected specimens severe ulcerating inflammation and subserosal fibrosis was found, most probably ischaemic in nature. After this procedure his condition improved slowly but was complicated by difficult weaning from haemodynamic and respiratory support. After 4 weeks the patient was discharged to the ward in a fair clinical situation and his postoperative course has now been uneventful for more than 6 months.

PI is an uncommon radiographic finding defined as the presence of gas within the wall of the gastrointestinal tract [1,2]. It has been found in several distinctive clinical settings such as enteritis, colitis, bowel obstruction and intestinal ischaemia, but is also seen in pulmonary diseases such as asthma, bronchitis, emphysema and infectious diseases (clostridium difficile, various viruses) and is related to the use of certain drugs particularly steroids, chemo- and immunotherapy [1,2]. In some cases it can be attributed to iatrogenic causes (barium enema, postsurgical, enteric tubes). The pathogenesis of PI is still unclear [1]. One hypothesis is that translocation of gas into the bowel wall, either of intestinal luminal or pulmonary origin, is the result of increased intraluminal pressure. Another is a bacterial theory which proposes that gas-forming bacteria enter the submucosa and produce gas in the bowel wall. A third hypothesis is a combination of both theories i.e. that bacterial overgrowth can lead to increased gas formation in the bowel, with as a result distension and dissection of gas into the bowel wall.

It is important to note that the clinical manifestations of PI are not caused by the intraluminal gas, but are ascribed to the underlying disease. Therefore treatment must be focused on the underlying illness inciting PI [2,3]. Determining the need for surgery depends on the clinical condition of the patient and the suspected underlying disease. The presence of pneumoperitoneum or portal venous gas is a further reason for surgery, as these conditions are associated with perforation or ischaemic bowel [3].

References