
YEAR BOOK[®]

YEAR BOOK OF CRITICAL CARE MEDICINE[®] 1991

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1991

The Year Book of CRITICAL CARE MEDICINE®

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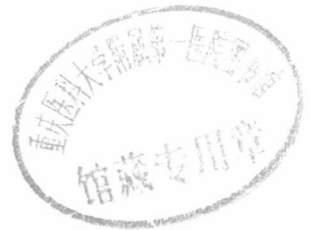
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Journals Represented

Mosby—Year Book subscribes to and surveys nearly 850 U.S. and foreign medical and allied health journals. From these journals, the Editors select the articles to be abstracted. Journals represented in this YEAR BOOK are listed below.

Acta Chirurgica Scandinavica
Acta Neurologica Scandinavica
American Heart Journal
American Journal of Cardiology
American Journal of Diseases of Children
American Journal of Emergency Medicine
American Journal of Infection Control
American Journal of Medicine
American Journal of Pathology
American Journal of Physiology
American Journal of Surgery
American Review of Respiratory Disease
Anesthesia and Analgesia
Anesthesia and Intensive Care
Anesthesiology
Annals of Emergency Medicine
Annals of Internal Medicine
Annals of Neurology
Annals of Surgery
Annals of Thoracic Surgery
Archives of Disease in Childhood
Archives of Internal Medicine
Archives of Neurology
Archives of Physical Medicine and Rehabilitation
Archives of Surgery
British Heart Journal
British Medical Journal
Chest
Circulation
Circulation Research
Circulatory Shock
Cleveland Clinic Journal of Medicine
Critical Care Medicine
Dermatologica
Electroencephalography and Clinical Neurophysiology
European Heart Journal
European Respiratory Journal
Head and Neck
Heart and Lung
Hepatology
Intensive Care Medicine
International Journal of Cardiology
Israel Journal of Medical Sciences
Journal of Applied Physiology
Journal of Burn Care & Rehabilitation
Journal of Clinical Investigation
Journal of Clinical Psychopharmacology
Journal of Emergency Medicine

Journal of Infectious Diseases
Journal of Neurology, Neurosurgery and Psychiatry
Journal of Neuroscience Nursing
Journal of Pediatric Surgery
Journal of Pediatrics
Journal of Surgical Research
Journal of Thoracic and Cardiovascular Surgery
Journal of Trauma
Journal of the American College of Cardiology
Journal of the American Geriatrics Society
Journal of the American Medical Association
Lancet
Laryngoscope
Neurology
Neurosurgery
New England Journal of Medicine
Pediatric Emergency Care
Pediatric Infectious Disease Journal
Pediatric Radiology
Pediatric Research
Pediatrics
Quarterly Journal of Medicine
Scandinavian Journal of Clinical Laboratory Investigation
Southern Medical Journal
Stroke
Surgery
Surgery, Gynecology and Obstetrics
Transplantation

STANDARD ABBREVIATIONS

The following terms are abbreviated in this edition: acquired immunodeficiency syndrome (AIDS), the central nervous system (CNS), cerebrospinal fluid (CSF), computed tomography (CT), electrocardiography (ECG), and human immunodeficiency virus (HIV).

Acknowledgment

This volume would not have been possible without the tireless dedication of Peggy Riley, Cindy Sheffield, Geri Byrd, and Katherine Swanigan, who spent countless hours coordinating this project. The editors are deeply in their debt.

Dedication

To the families of the editors of the YEAR BOOK OF CRITICAL CARE
MEDICINE.

Introduction

The 1991 YEAR BOOK OF CRITICAL CARE MEDICINE features a whole new set of papers that have been carefully abstracted and commented on to reflect recent developments in critical care medicine. For those of us in the specialty, it is both exciting and disturbing to see so many of the considerations of critical care medicine revolve around ethical and financial issues. The lay press is filled with concerns about continuing or removing life support systems, expenses of medical care (particularly intensive care), and similar considerations. The financial and ethical concerns in critical care medicine are now topics for the evening news, for family discussion, and for new legislation.

As a result of these considerations, it is apparent that the tradition of having sections of the YEAR BOOK OF CRITICAL CARE MEDICINE dealing with ethical and financial issues is both appropriate and important. Along with reviewing the current areas of new treatments for infectious disease, concerns about AIDS, new modes of support for ventilatory failure, and ways to treat patients with acute myocardial infarction, the YEAR BOOK has continued to grow and develop its sections on the social and economic implications of the specialty.

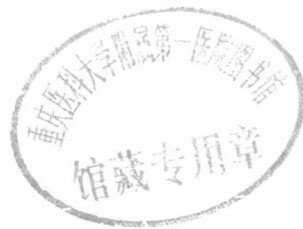
Mark C. Rogers, M.D.
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1 Trauma



Trial of Normobaric and Hyperbaric Oxygen for Acute Carbon Monoxide Intoxication

Raphael J-C, Elkharrat D, Jars-Guinestre M-C, Chastang C, Chasles V, Vercken J-B, Gajdos P (Hôp Raymond Poincaré, Garches, France; Hôp St Louis, Paris) *Lancet* 2:414-419, 1989

1-1

Acute carbon monoxide intoxication remains a frequent occurrence in the home. Oxygen is the usual treatment, but the indications for hyperbaric oxygen (HBO) remain uncertain. The value of HBO was studied within 12 hours of hospital admission in 629 adults who were poisoned at home. When consciousness was intact, 6 hours of normobaric oxygen (NBO) were compared with 2 hours of HBO at 2 atm absolute plus 4 hours of NBO. In those with initially impaired consciousness, 1 and 2 sessions of HBO were compared. The 2 sessions were 2-12 hours apart.

In patients with intact consciousness, treatment with NBO alone and combined HBO-NBO was similarly successful. About two thirds of the patients recovered within 1 month. In those with impaired consciousness, 1 session of HBO and 2 sessions of HBO had similar effects. All of these patients also received NBO. Just more than half of these patients recovered within 1 month. All 7 patients with neuropsychiatric sequelae and all 4 who died were comatose on hospital arrival. The type of treatment still made no difference when the outcome was stratified by the carboxyhemoglobin concentration.

Normobaric oxygen is adequate for carbon monoxide-intoxicated patients whose consciousness is unimpaired. Those with brief loss of consciousness should have 1 session of HBO. It is not likely that 2 HBO sessions have significant value, but whether more than 2 sessions are indicated remains uncertain.

► Definition of the proper role of HBO in the treatment of carbon monoxide intoxication has been difficult because the outcome measure depends on the resolution of subjective neuropsychiatric symptoms, and because previous studies have been uncontrolled with small numbers of patients. The large, controlled study by Raphael et al. adds important information: (1) Level of consciousness is more important than carboxyhemoglobin level in predicting outcome. In the absence of coma, there is no advantage of HBO over NBO in improving the neurologic outcome regardless of the initial carboxyhemoglobin level, even though carboxyhemoglobin levels are lowered more rapidly by HBO. (2) Two sessions of HBO do not improve serious neurologic morbidity or mortality compared to 1 session in comatose patients. In the design of this study, the authors made the assumption that coma secondary to carbon monoxide intoxication justified at least 1 session of hyperbaric oxygenation. However, their data suggest that a well-controlled, randomized study comparing

NBO with HBO in comatose patients is needed urgently if the continued use of a scarce resource such as HBO for carbon monoxide is to be justified.—D.G. Nichols, M.D.

Traumatic Rupture of the Thoracic Aorta: A Clinicopathological Study

Søndena K, Tveit B, Kordt KF, Fossdal JE, Pedersen P-H (Rogaland Central County Hosp, Stavanger, Norway)

Acta Chir Scand 156:137–143, 1990

1–2

The incidence of traumatic rupture of the thoracic aorta is probably underestimated, because most patients so injured die before arrival at the hospital and autopsy is often not performed. A retrospective review was performed to determine the incidence of traumatic rupture of the thoracic aorta.

During a 6-year study period, 18 males aged 7–72 years and 9 females aged 16–83 years sustained traumatic rupture of the thoracic aorta. Eighteen patients died instantly, but in 2 of them death was caused by head injuries. One patient had vital signs after the accident but died during transport to the hospital; 5 others were treated but died in the hospital. All 5 had extensive injuries other than the aortic rupture, and in 4 of them the aortic injuries were not diagnosed before death. The remaining 3 patients survived. Twenty of the 27 patients were injured in automobile accidents.

Two of the 3 survivors underwent direct cross-clamping of the aorta with Dacron interposition grafting soon after admission. The third survivor had placement of a Gott shunt and Dacron interposition graft the day after the accident. The chest radiograph demonstrated rib fractures and lung contusions on the right side and widening of the mediastinum with deviation of the trachea to the right. This patient survived but was paraplegic.

Most patients who died at the scene were in a condition that precluded any life-saving measures. A chest radiograph in survivors suspected of traumatic injury of the thoracic aorta is mandatory; it may show a number of signs that indicate aortic rupture, of which mediastinal widening is considered the most reliable. Some authors recommend that aortography be performed in all patients suspected of rupture of the thoracic aorta by virtue of the mechanism of injury. Most patients should immediately undergo left fourth intercostal thoracotomy. Several surgical techniques are available, but there is still no agreement on what constitutes the safest technique. Paraplegia remains the most feared complication of cross-clamping. The simple-clamp repair technique appears to be just as reliable as other techniques in avoiding paraplegia.

Based on a total population of approximately 240,000 inhabitants served by the present hospital, the incidence of traumatic rupture of the thoracic aorta was 1/53,000 inhabitants. Therefore, this type of traumatic injury occurs more often than is generally thought.

► Traumatic rupture of the thoracic aorta is a well-known complication of decelerating injuries such as “steering wheel” trauma. During the 6 years of this study, 18 males and 9 females were identified who sustained traumatic rupture of the thoracic aorta. The conditions that cause some to die instantaneously and allow others to reach the hospital alive are discussed in some detail, and it is a useful review of the subject.—M.C. Rogers, M.D.

Rupture of the Distal Thoracic Esophagus Following Blunt Trauma: Case Report

Micon L, Geis L, Siderys H, Stevens L, Rodman GH Jr (Methodist Hosp of Indiana, Indianapolis)

J Trauma 30:214–217, 1990

1–3

Rupture of the distal thoracic esophagus from blunt external trauma is uncommon because most ruptures involve the cervical esophagus. Only 5

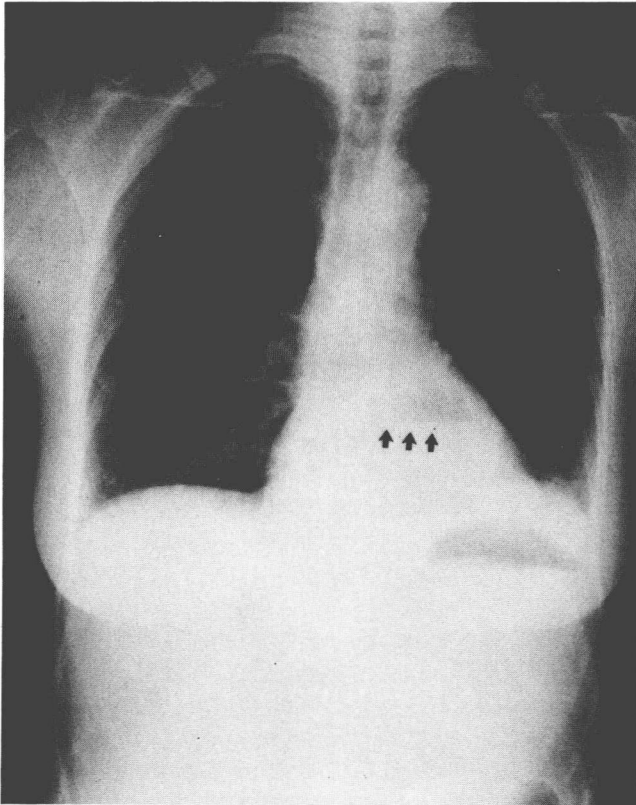


Fig 1–1.—Repeat posteroanterior and lateral chest radiograph, 90 minutes after presentation. Note air-fluid level in mediastinum (arrows). (Courtesy of Micon L, Geis L, Siderys H, et al: *J Trauma* 30:214–217, 1990.)