INTRODUCTION

Presented in this issue are the abstracts from TraumaCare 2004, held in Sydney, Australia, October 15–17, 2004. This was a joint meeting of the Australasian Trauma Society and International TraumaCare (ITACCS), attended by 500 delegates from 37 countries. An international faculty of 97 presented the latest topics related to an interdisciplinary approach to the management of trauma. Abstracts from the plenary sessions, oral presentations, and poster presentations are published here. The Winter 2005 issue of *TraumaCare* contains a message from the outgoing President of International TraumaCare, Dr. Michael J.A. Parr, as well as six articles based on presentations at the 2004 symposium on the topics of blood use, hypothermia, and brain injury.

PLENARY ADDRESSES—ABSTRACTS*

"It's All Ancient History"– Ancient Egyptian, Greek, and Roman Trauma Care

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In Egypt, the men are more skilled
in Medicine than any of human kind.
—Homer

The effect of the examination on his immediate course of action toward the patient was the most important thing for the ancient surgeon. According to the ancient Egyptian physicians, the clinical examination was "the beginning of the secrets of the physician."

The Edwin Smith Papyrus is the earliest known surgical treatise. It dates back to 1600 BC. The treatise consists of 48 cases, most of which are traumatic injuries, with "recipes" for treatment.

The text of the Edwin Smith Papyrus consists of the following sections (not all cases contain all sections):

Title:	"Instructions concerning…"
Examination:	"If thou examinest a man having…"
Diagnosis:	"Thou shouldst say regarding him 'One having a…'"
	"An ailment which I will treat."
	"An ailment which I will contend."
	"An ailment not to be treated."*

*In only 3 of the 48 cases was the verdict hopeless in the Edwin Smith Papyrus.

The first recorded procedure for reduction of a dislocation of the mandible was described as Case 25 in the Edwin Smith Papyrus:

"Instructions concerning a dislocation in his mandible."

In the examination section, the procedure is described as follows: "If thou examinest a man having a dislocation of his mandible, shouldst thou find his mouth open (and) his mouth cannot close for him, thou shouldst put thy thumbs(s) upon the ends of the two rami of the mandible in the inside of his mouth, [and] thy two claws [meaning two groups of fingers] under the chin, [and] thou shouldst cause them to fall back so that they rest in their places." To this day, mandible reduction is performed in like manner!

One of the first known wound care products was beer. An ancient Mesopotamian prescription for healing a person "sick with a blow to the cheek" was to "pound together fur-turpentine, pine-turpentine, tamarisk, daisy, flour of Inninnu. Strain; mix in milk and beer in a small copper pan, spread on skin, bind on him, and he shall recover."

Some of the "firsts" in trauma management attributed to the Greeks were the use of wine and vinegar to treat wounds. The Greeks may have been the first to recognize the danger of gangrene associated with the use of tourniquets. Placing cold water around the wound to stop bleeding was also recommended by the Greek physicians. The Greek "drug" for fresh wounds was extracts from various plants, oils, resins (myrrh and frankincense), and inorganic salts.

Is modern trauma care actually "ancient" trauma care revisited? Something to think about!

*Names of presenters are underlined.

References

1. Breasted JH, ed. *The Edwin Smith Surgical Papyrus*, Hieroglyphic Translation, Transliteration & Commentary. Oriental Institute Publications III-IV, 1991.
2. Cohen IK. Foreword. *A Brief History of Wound Healing*. Ortho-McNeil Pharmaceutical and Janssen-Cilag, Oxford Clinical Communications, Inc., 1998.

Two Centuries of Advances in Trauma Care

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Learning Objective: To comprehend the contributions made to trauma care by discoveries made between the latter part of the 18th century and the latter part of the 20th century.

History: The basic principles of respiration and the circulation had been partly unravelled by Robert Hooke, John Mayou, and, of course, William Harvey earlier in the 1600s. But it was during the latter part of the 18th century that the fundamentals of trauma care,

"the ABC," began to be established. Priestley, Scheele, and Lavoisier had, between them, discovered oxygen and given it a name. John Hunter, William Cullen, and Charles Kite had reestablished airway management with tracheal tubes and ventilation of the lungs with bellows, building on the work of Versalius two centuries earlier. This was an era of social awareness, generosity, and philanthropy. Many great hospitals were established by generous donations from the wealthy and by public subscription. Resuscitation of the nearly drowned and apparently dead proved to be the major stimulus, and the hallmark of the time was the creation of many humane societies, beginning in the land of the canal, Holland.

Electricity had been introduced into trauma care in 1774, the first recorded case being Catherine Greenhill, a 3-year-old who had fallen from a first floor window and had been resuscitated with a bellows for 20 minutes. After the shock had been delivered, the child began to breathe and made a good recovery. Herhold and Rafn, writing in 1796, believed electricity to be "the best cardiacum in a drowned person."

Up to this time, trauma surgery had been in the doldrums. Surgeons were considered rather low-grade persons (especially by physicians) and doubled as barbers. Their main activities were amputations, and wound care was by secondary intention with the application of hot tar and oil. Fractures were treated by simple splints. Osteomyelitis and infection were rife. Thoracic and abdominal injuries of any magnitude were generally lethal. Anaesthesia had not been discovered.

John Hunter was the first to bring some science to trauma surgery in the 1760s. He developed the concepts of simple and complicated wounds and fractures and low- and high-velocity missile injuries. Rest and opium were the standard care for thoracic and abdominal injuries.

In the 19th century, the leading figure in trauma care was Baron Larrey, physician and surgeon-in-chief to Napolean. Working before anaesthesia was discovered, he developed the concept of triage with rapid evacuation of the most seriously injured, regardless of rank, using his horsedrawn "ambulance volante." These were staffed by surgeons, farriers, and military EMTs and paramedics equivalents of the day. Larrey adopted a successful method of managing chest injuries, advocated fluids and a high-calorie diet for those with burns and major wounds, and performed near–painless amputations for cases of gangrene and frostbite.

Guthrie and McGrigor, working with Wellington in the Peninsular War, built on Larrey's work and introduced field hospitals. The majority of beds were occupied by soldiers ill with bowel infections, not the injured from the battlefield (just like last year in Iraq).

In the first half of the 18th century, intravenous transfusion was developed by Latte and Blundell. Ferguson and Alexander designed the syringe as we know it.

In October 1846, Morton demonstrated anaesthesia successfully in Boston. Anaesthesia allowed trauma surgery to develop, and the techniques using ether and chloroform spread, like wildfire, around the world. Airway and ventilation management began to be refined by anaesthesiologists, having lain dormant for a century. Lister introduced asepsis and Pasteur developed heat sterilisation of surgical instruments. X-rays were discovered by Roentgen in 1895 and local anaesthetic agents in the early 1900s. Blood transfusion was put on a much safer footing after the discovery of blood groups by Landsteiner in Austria, but it was not to be generally used until after the slaughter of the Great War of 1914–1918.

The hallmarks of the 20th century were inventions founded on sound basic science and technology—fluid replacement; electrolyte and acid–base balance; intravenous anaesthesia, analgesia, and sedation; prolonged management of the airway and ventilation (culminating in intensive care); and the introduction of muscle relaxants, regional anaesthesia, vasoactive drugs, and, of course, antibiotics. Little would have been possible without the discovery of plastics.

Based on these advances, trauma surgery has been able to move on with vascular and orthopaedic prostheses, internal and external fixation of fractures, cardiopulmonary bypass, transplantation, and a better understanding of head injury.

Sophisticated prehospital care and patient transport by land, sea, and air, borne of experience in the wars of the 20th century, has enabled really effective trauma care to be developed in hospital. That concept began 200 years ago…

I Have Seen the Future!

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No abstract provided.

Visions for Australasian Trauma Care: 10 Years Hence

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In Australasia, 35 years ago, trauma had overtaken infectious disease as the leading cause of years of life lost. Health professionals in Australia and New Zealand commenced a campaign to reduce injury rates and deaths—and as a result, road deaths in Australasia have been reduced by 70%.

Despite these local advances, road trauma is becoming a major global health problem, accounting for 2.1% of all deaths globally. More than 1.2 million people are killed on the road annually, and 20 to 50 million more are injured or disabled. Deaths from all types of injuries are projected to rise from 5.1 million in 1990 to 8.4 million in 2020, with road traffic injuries as a major cause for this increase. In developing countries, the costs of injury are estimated to be AU$140 billion, twice the annual amount of development aid to developing countries.

In Australasia, neurotrauma remains a significant burden, representing 70% of all major trauma patients, 55% of early trauma deaths, and the major cause of long-term disability. Locally and internationally, prevention and the improved early emergency management of head injuries will lead to the most significant improvement in outcomes.

Over the next decade, the ongoing critical review of prehospital care, the introduction of new technologies, and the further evolution of state trauma systems will continue. The establishment of a national trauma registry will facilitate multicentre prospective trials. Standardisation of trauma reception and resuscitation—with the introduction of real-time, computer-prompted algorithms and a corresponding measurable reduction in management errors—will contribute to further reductions in morbidity and mortality.

Trauma care providers from New Zealand and Australia have a long history of propagating internationally the local lessons we have learned. This, in turn, has provided us with further opportunities to critically review our own systems. As the global trauma pandemic escalates, further contributions will be expected and the people involved in trauma care will increasingly become a significant "export product."