



In critical condition: management of dental trauma

What's different in trauma management today compared with what Ellis recommended in his 1946 textbook? Oh, about 50 years! Trauma management has not changed significantly since Ellis¹ compiled his text, created a classification system, and proposed treatments still in use today. Sure, one could argue that we know more about what we can expect from an injured tooth, thanks to the work of Andreasen and others, or that restorative materials have improved. However, the fact remains that the treatments we use for dental trauma are not much more sophisticated than what Dr. Ellis and dentists of his time pulled off the shelf a half-century ago.

The College of Diplomates' session on trauma reported in this issue is particularly timely in that it addresses an area of pediatric dentistry sorely in need of attention. The workshop reports confirm that our management of trauma remains highly empirical. Much of the support for treatment is based on opinion, limited research in animals, or endodontic literature that continues to evolve and be reinterpreted. The recent change in recommendations by the American Association of Endodontists for length of time calcium hydroxide should be kept in an avulsed tooth prior to gutta percha placement, speaks to the variability in clinical protocols.² [Note: The abstract on p. 390

on an article by Krasner and Rankow and the College of Diplomates article on p. 379 also present conflicting methods of trauma management.]

The human clinical trial is a rarity. More often than not, our management of trauma is based on retrospective analyses of small samples of teeth, from even fewer patients, treated by numerous clinicians and collected over years of study.

Traumatic injury is by nature difficult to study. We're often unsure of the extent of injury or the individual's response. Once treated, a tooth gives us only minimal clues about its convalescence. Our diagnostics are primitive and our treatment choices limited. The haphazard occurrence of trauma makes human study difficult at best and the need for long-term results makes prospective human trials difficult and costly.

At the Academy's Annual Session in San Francisco, the Diplomates' session was complemented by the Academy's decision to join forces with the AAPD Educational Foundation to develop an on-line trauma registry that, once up and running, can be used to collect data on trauma and perhaps test protocols and identify promising new ways to manage dental injury.

Unintentional injury, as trauma is now called, should also be a topic for increased emphasis by the National Institute of Dental Research. It would seem that such a difficult and real treat-

ment problem that brings to bear wound healing, pharmacology, immune response, dental materials, and a number of other current research areas would be of great interest to NIDR. The association of dental trauma with child abuse, family violence, and safety adds to its national priority.

An important first step in addressing dental trauma was accomplished with the Diplomates' session in acknowledging the state of the art. Now, we need prospective trials using medications and treatments that have demonstrated effectiveness in analogous injuries. Neither steroids or antibiotics have received an adequate hearing — and what about low doses of other potent drugs placed locally? A valid and reliable trauma rating scale would help sort injuries into manageable categories. Better methods of vitality testing, cell preservation, anti-rejection, whitening, and imaging — to name a few areas — are needed. A most challenging aspect of this research will be getting it done on a condition where clinical success often depends on elapsed time, emotions run high, associated injuries take precedence, and lack of pain is a disincentive for long-term followup.

As implant success goes up and the age of patients goes down, will this be our treatment of choice for traumatic injury? If we continue down the path of expensive, prolonged endodontics leading ultimately to expensive prosthetics, we

may find — in the near future — that an implant is less costly and troublesome.

It would be a tragedy if we missed the chance to develop a simpler, more effective, and less costly way to manage traumatic injury. Pediatric dentistry is well situated to embark on this research effort because of training, experience, and hospital affiliation. Our training programs and offices handle thousands of traumatic injuries a year. Joining with the endodontic community in an organized effort would surely speed the process along.

Dr. Ellis envisioned an entire profession sensitive to the immediate and long-term needs of children affected by trauma and able to help them in their hour of need. Perhaps someday soon his dream will be realized.

1. Ellis RG: The classification and treatment of injuries to the teeth of children — a reference manual for the dental student and the general practitioner. Chicago: The Year Book Publishers, Inc, 1946.
2. The American Association of Endodontists. Treatment of the avulsed permanent tooth; recommended guidelines of the American Association of Endodontists. Chicago, IL, 1994.

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