



# Ethical dilemmas present new challenges

DAVID L. TURPIN

*Editor-in-Chief, American Journal of Orthodontics and Dentofacial Orthopedics; Professor, Department of Orthodontics, School of Dentistry, University of Washington, Seattle, Washington, USA.*

This brief presentation was designed to highlight the type of ethical dilemmas that continue to challenge the orthodontic clinician, the journal editor and the publisher. Many of these problems may seem unrelated, but all eventually have an impact upon the orthodontic treatment delivered to our patients in one form or another. Examples of these ethical dilemmas are presented for the purpose of stimulating discussion that will create greater awareness and eventual change in what is deemed unethical behavior. The examples selected are meant to be controversial and the behavior described may or may not be considered unethical by those in the audience.

## THE CLINICIAN

The use of digital imaging is becoming commonplace by many clinicians when predicting treatment results for the new patient. But as efficient as the technology is becoming, care must be taken by the orthodontist to base such predictions on the evidence as published in the scientific literature. The following example is selected to make my point. When meeting with the parent of a child who has mandibular micrognathia, some clinicians may want to describe the need for additional mandibular growth during treatment to correct a rather severe skeletal disharmony. Through the use of imaging software, the clinician can show how much mandibular growth will be needed to correct the existing facial disharmony. Although this is an effective means of communication, it is critical that such a prediction be based on reality. To make the point more forcefully, if the patient just happens to have Pierre Robin Syndrome, how often does a deficient mandible actually catch up with the maxilla, eliminating the disharmony?

In an article published in October 2001 of the *AJO-DO*, "The mandibular catch-up growth controversy in Pierre Robin sequence" (Daskalogiannakis et al., 2001), this never happens. The authors followed the

growth of 38 Pierre Robin patients longitudinally from 5.5 years to 16.8 years with complete records. "Not one of these patients exhibited significant improvement in their skeletal pattern." This type of Class II patient is obviously not one that should be subjected to digital imaging as a means of raising parental expectations.

## THE EDITOR

The approval by a human subjects review committee is a critical element in all research papers submitted to the editors of scientific journals today. But from the viewpoint of most editors, this may mean different things in different parts of the world. Is it acceptable to lay a surgical flap to make direct measurements of bone levels while conducting a periodontal study when the patient's treatment could have been completed successfully without the flap? The extra procedure may have resulted in a better study, but at what cost in discomfort and healing time to the patient?

Known treatment outcomes also pose a dilemma for the researcher when it comes to the design of randomized clinical trials. For example, you may want to study the effectiveness of two different forms of maxillary protraction headgear. In prior studies one of the extra oral appliances has been shown to cause counterclockwise rotation of the maxilla and the other appliance does not. After randomization of the patients and the initiation of treatment, it becomes apparent midway through the study that some of the patients are not doing well. They happen to be the patients with high mandibular plane angles and increased face heights. Was this an expected outcome based upon research already published? Is this ethical research and should it be published or is it just the price we must pay to be thorough in our quest to enhance evidence-based practice? It seems clear that treatment modalities should be assigned to patients based on the most appropriate diagnosis.



When treating identical twins in our dental schools and private practices, it is always tempting to compare two different treatment approaches during an early phase of care. But in my 36 years of practice, I have never seen this succeed. Within the first 6 months of treatment one of the treatment modalities appears to be better than the other and the child's mother immediately demands that they both receive, what she perceives to be, the "best care" for the remainder of the time. I am reminded that no one ever said it would be easy to conduct meaningful research. The 1996 Health Insurance Portability and Accountability Act (HIPAA) is now being implemented in the United States and promises to add another layer of barriers when it comes to assigning patients to randomized clinical trials (Turpin, 2003).

## THE PUBLISHER

For the publisher, image resolution has become a challenge when asked to publish clinical material. Five years ago most orthodontists were using relatively low-resolution digital cameras compared to the cameras now on the market. Those images with a resolution of 72 dpi are not acceptable for publication in a scientific journal even if they look good as printed in a letter with an ink jet printer. The other complication is the expansion of commercial imaging software that automatically compresses images for storage purposes. The clinician may be left with a collection of low-resolution patient photos that can never be improved enough for use in a publication. There are two solutions to this dilemma. First, the commercial imaging companies must include in their software the capability to retain and store the original high-resolution images indefinitely. There are legal reasons for doing this as well even if you don't plan

on doing research. With this change in software, each respective company also has a responsibility to educate its users of the need to save their original images and to periodically encourage the purchase of a new, high-resolution clinical camera.

Secondly, it is up to the clinician as well as the researcher to value excellent photography and to take the initiative to save all original high-resolution images indefinitely. Most publications require an image to be at least 300 dpi at 3 1/2 x 5 inches, or it will appear fuzzy and out of focus after publication in a journal. When preparing a paper to be published, place the selected images on a compact disk (CD) or send them electronically directly to the editorial office.

With this brief review, one has a glimpse of the breadth of ethical concerns that can interrupt the publication of all-important scientific findings. The clinician/researcher has a responsibility to select and monitor the most appropriate technology as it becomes available, as does the editor when it comes to evaluating decisions made by the human subjects review committee. Lastly, much of this research and clinical experience will go unreported if we fail to retain original data in a high-resolution format. Technology is here to stay and it is up to us to determine how it is to be used or abused.

## REFERENCES

- Daskalogiannakis J, Ross B, Thompson B. The mandibular catch-up growth controversy in Pierre Robin sequence. *Am J Orthod Dentofacial Orthop* 2001;120:280-5.
- Turpin DL. Protecting the privacy of your patients. *Am J Orthod Dentofacial Orthop* 2003;123:593.