

THE EDITOR'S CORNER

ROBERT G. KEIM, DDS, EDD, PHD

Some Thoughts on Patient Compliance

One of the earliest mentions of orthodontic tooth movement in the scientific literature was by Hippocrates himself.¹ Somewhere around 400 B.C., he noted that teeth could be moved to more desirable positions in the dental arch with continuous finger pressure. He prescribed such therapy routinely. While he made no mention of his average treatment time, retention protocol, or staffing needs, it is interesting to note that the main problem in getting successful results with his technique was that patients frequently failed to follow his instructions. They did not comply with the doctor's orders. It doesn't take much imagination to envision Hippocrates shaking his head in disgust and sighing with frustration at some young patient who hadn't pushed on his tooth as he was told and, as a result, had experienced no tooth movement since his previous appointment. You can just hear the boy's mother complaining that no progress was being made and asking what the doctor planned to do about it.

Jump ahead a couple of millennia, and we see the same scenario being played out time and again in orthodontic offices the world over. Patients don't wear their headgear, lose their bite plates, are lackadaisical about their oral hygiene, or fail to show up for appointments. I can't think of any greater cause of compromised treatment results than patients' failure to comply with instructions. If there is one subject that permeates every aspect of the practice of orthodontics, from active biomechanics to practice management to retention and case conclusion, it is patient cooperation. Indeed, when the string "patient compliance" is entered in the search engine, JCO's Online Archive turns up no less than 71 different papers published since 1967 in this journal alone. Clearly, the subject has been one of great interest and frustration for orthodontists for a long time. In a cruel twist of irony for a specialty so focused on control, however, it is the one aspect of practice over which we have the least control.

Bite plates and headgear are remarkably effective in treating growing Class II malocclusions, but only when patients wear them as prescribed. At times in the past, it seemed as if the quality of case outcome depended almost entirely on patient compliance. Fortunately, that era seems to be drawing to a close, at least with regard to active treatment. Over the last 20 years, the problem of reliance on patient cooperation has been addressed on two fronts-- termed by Barbour and Callender the "psychological- educational" and the "physiological-mechanical".² The former deals with predicting and/or altering patient behavior, the latter with the use of treatment modalities that are not dependent or--more accurately--less dependent on the patient's voluntary compliance.

Because of individual psychological variation, the doctor will never be able to completely control patient behavior, and this is probably a good thing in the long run. After all, who among us wants anyone else controlling our own behavior? Seems almost un-American. The psychological-educational model of patient compliance does not purport to do that. Instead, as explained by a number of different authors, it helps us understand the psychological underpinnings of patient compliance and non-compliance.⁴⁻⁸ More important, it allows us to include some key psychological cues in our case presentations and ongoing interactions with patients. White has presented one of the best discussions of this "new paradigm".^{3,9} His model emphasized the need to realize that a patient's compliance depends heavily on that individual's sensitivity level, and that we are more

likely to get compliance when what we ask the patient to do does not hurt. He suggested that we "tame the pain" with practical measures such as using the simplest mechanics possible, using bonded brackets rather than bands whenever possible, using the most resilient archwires possible, and prescribing anti-inflammatories and chewing gum immediately after adjustments to minimize post-treatment discomfort. A comfortable patient is more likely to be a compliant patient.

Another important aspect of the psychological- educational approach is the concept of patients' ownership of their own treatment and partnership with the doctor in achieving optimum results. In last month' s issue of JCO, Sondhi pointed out that "instead of trying to ' sell' treatment to children and parents, . . . a lot of the time spent tearing our hair out over problems with patient compliance could be saved if the children were made partners in the consultation process."¹⁰ He noted that he has had success in effectively presenting treatment plans to children as young as 7 or 8 years old. Nothing beats establishing a good rapport with the patient from the outset. This may be the most important thing we can do to encourage patient compliance.

Tremendous strides have also been made in the physiological-mechanical arena. Most major orthodontic manufacturers have introduced effective "non-compliance" or minimal-compliance appliances. The original Herbst appliance now has a track record of 98 years. Class II correctors that do not depend on patient compliance have met with tremendous clinical and market success since the Herbst appliance was reintroduced to the United States in 1979.¹¹ Most orthodontists I know currently include at least one of these appliances in their armamentaria. In fact, it would behoove each of us to master at least one intra-arch appliance to deal with maxillary protrusions in non-compliant patients and one interarch appliance to facilitate our treatment of mandibular retrusions.¹² Failure to do so would seem to put a contemporary orthodontist at a competitive disadvantage.

Additionally, the dream of skeletal anchorage now seems on the verge of becoming a reality.¹³ Although the use of implants, minipins, and microscrews is still controversial and should be regarded as experimental at this stage, widespread clinical usage seems likely within the next decade. Knowledge of the appropriate clinical techniques associated with skeletal anchorage will become mandatory for practicing orthodontists in the near future.

So what is left? To the best of my knowledge, a reliable substitute for reverse-pull headgear is still not available. Carano, Bowman, and Valle have recently introduced an interesting appliance for moderate Class III interceptive treatment that requires minimal compliance, but is not intended to deal with more severe Class III cases.¹⁴ It seems as if the facemask will be with us for some time to come.

Patient compliance with oral hygiene remains a vexing issue. Various mechanical toothbrushes, floss threaders, mouthwashes, and dentifrices have made things more tolerable, but it is still up to the patient to get in there and get the job done. Many do not. A number of researchers are developing vaccines for the various bacteria responsible for plaque. These seem to hold the most promise for overcoming patient negligence in dental hygiene and, once available, will greatly improve our patients' oral hygiene without our depending on them entirely for plaque control.

Given the advances in both the psychological- educational and physiological-mechanical areas of compliance management, today' s practitioner has the ability to overcome most of the behavioral issues that have plagued us since the time of Hippocrates. By employing the techniques suggested by White, Sondhi, and others, we can encourage patients to cooperate as much as possible, while

admittedly never being able to completely control their behavior. Appliances currently available allow us to take advantage of skeletal anchorage and thus avoid extraoral anchorage, while others allow us to correct most actively growing skeletal Class II malocclusions without depending on the patient for results. Perhaps the only area of patient compliance that will remain out of the doctor' s control for the foreseeable future--despite the advent of telephone and e-mail reminders--is that of keeping appointments. Hippocrates may have had the answer to that problem 2,000 years ago: He relied heavily on house calls. •

REFERENCES

- 1** Graber, T.M.: Development of a concept, in *Orthodontics, Principles and Practice*, 3rd ed., W.B. Saunders Co., Philadelphia, 1972, p. 1.
- 2** Barbour, A. and Callender, R.S.: Understanding patient compliance, *J. Clin. Orthod.* 15:803-809, 1981.
- 3** Mayerson, M. and White, L.W.: Management and Marketing: A new paradigm of motivation, *J. Clin. Orthod.* 30:337-341, 1996.
- 4** Albino, J.E.: Psychological reasons for orthodontic treatment explored, *J. Am. Dent. Assoc.* 98:1002-1003, 1979.
- 5** Albino, J.E.; Lawrence, S.D.; and Tedesco, L.A.: Psychological and social effects of orthodontic treatment, *J. Behav. Med.* 17:81-98, 1994.
- 6** Ando, Y.: Psychological responses of patients in orthodontic treatment, *J. Nihon U. Sch. Dent.* 3:134-139, 1961.
- 7** Ashcraft, C. and Fitts, W.H.: Self-concept change in psychotherapy, *Psychother. Theory Res. Pract.* 1:115-118, 1964.
- 8** Baldwin, D.C. and Barnes, M.L.: Patterns of motivating orthodontic treatment, *IADR* 43, No. 461, 1965.
- 9** White, L.W.: A new paradigm of motivation, in *Creating the Compliant Patient*, ed. J.A. McNamara and C. Trotman, Center for Human Growth and Development, University of Michigan, Ann Arbor, 1997.
- 10** Sondhi, A.: Efficient and effective consultations, *J. Clin. Orthod.* 37:81-89, 2003.
- 11** Pancherz, H.: Treatment of Class II malocclusions by jumping the bite with the Herbst appliance, *Am. J. Orthod.* 76:423-442, 1979.
- 12** Vogt, W.: A new fixed interarch device for Class II correction, *J. Clin. Orthod.* 37:36-41, 2003.
- 13** Gottlieb, E.L.: Editor' s Corner: Stationary anchorage, *J. Clin. Orthod.* 36:665-666, 2002.
- 14** Carano, A.; Bowman, S.J.; and Valle, M.: A fixed reverse labial bow for moderate Class III

interceptive treatment, J. Clin. Orthod. 37:42-46, 2003.