

# THE READERS' CORNER

JOHN J. SHERIDAN, DDS, MSD

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*(Editor's Note: The Readers' Corner is a quarterly feature of JCO in which orthodontists share their experiences and opinions about treatment and practice management. Pairs of questions are mailed periodically to JCO subscribers selected at random, and the responses are summarized in this column.)*

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1. How do you treat a Class II, division 1 malocclusion with a retrusive mandible at age 9, at age 18, at age 27, or at age 60?

Age 9: The vast majority of respondents indicated that the focus of their treatment would be to encourage mandibular growth. Most said they would normally use a functional appliance such as a Herbst or twin block, with a few preferring a MARA or bionator. Several clinicians indicated that a maxillary restraining device such as headgear could be used to augment the effectiveness of the functional appliance. On the other hand, a significant number of respondents said they would not treat the condition at this early age, preferring to wait until the adolescent growth spurt had begun or the second molars had erupted. Individual answers included:

- "I would make sure the maxilla is wide enough to accommodate the mandible when brought forward into a Class I relationship. If not, I either expand then or include expansion as the first part of comprehensive therapy approximating the pubertal growth spurt."
- "We do not do many Class II, division 1 cases



Dr. Sheridan is an Associate Editor of the *Journal of Clinical Orthodontics* and a Professor of Orthodontics, Jacksonville University, 2800 University Blvd. N., Jacksonville, FL 32211.

at this age due to patient management and stability. If the malocclusion is severe and the family asks for treatment, we use a Herbst appliance."

Age 18: There was a mixed response for this age group, with most clinicians favoring surgery, fixed appliances, or a combination of the two to resolve the problem. A minority of the respondents said they would attempt to take advantage of residual growth and, if unsuccessful, would resort to surgery or camouflage treatment, usually involving the removal of upper premolars. A typical comment was:

- "I am willing to try a Herbst-type appliance, hoping to distalize upper molars and maybe get some mandibular advancement. However, depending on the severity of the mandibular retrusion, I would advocate for surgery."

Age 27: At this age, surgery was the predominant choice for treating a retrusive mandible. If, for whatever reason, surgery could not be performed, the consensus was to do the best one could to give the patient some esthetic improvement. Many clinicians noted that they would treat patients at age 27 in the same way as they would patients at age 18. A few said they would probably extract the upper premolars and settle for a compromised facial result. Some individual responses were:

- "I would propose mandibular surgery, but also use my imaging/cephalometric program to illustrate the probable facial changes from adult compromise treatment, usually with upper bicuspid extraction, and then let the patient decide which treatment they would prefer."
- "Quite frequently I would suggest a genioplasty in conjunction with compromise or surgical treatment to benefit facial esthetics."

Age 60: Although surgery was frequently mentioned, there was a definite trend away from surgery at this age, compared to the 18- and 27-year-old categories. The general preference was to minimize intervention while focusing the treatment plan on the best possible esthetic result. Several clinicians indicated they would not treat this malocclusion at age 60. A pertinent reply:

- "Because I'm hesitant to extract at this age, I would propose relief of crowding through conservative reproximation, leveling the lower arch to prevent deep-bite sequelae. I would not advocate for surgery, but the patient should be made aware of that option."

*What are your criteria for extraction in Class II, division 1 cases?*

The majority of respondents cited a combination of three criteria: severe crowding, a protrusive profile, and flared incisors coupled with lip incompetence. In a patient with no remaining mandibular growth, many said they would extract upper premolars if at all possible, and would advise the patient and parents of the potential need for surgery if an acceptable result could not be achieved with conventional appliances. Also mentioned was the importance of good patient cooperation in nonextraction treatment. Specific comments included:

- "I would extract in both arches if there was lower arch crowding greater than 4mm and flaring of the upper incisors with no available space. I would extract in the upper arch only if the lower arch was acceptable and the patient had finished growing."
- "My guidelines would be maxillary protrusive patients or patients who are unwilling to have surgery and understand that non-surgical treatment may be less than ideal."

*What are your criteria for extraction in Class II, division 2 cases?*

There was a definite reluctance to extract in Class II, division 2 cases, especially in the lower arch, because of the growth potential of adolescent patients and the common pretreatment finding of a strong mandible with a good or accept-

able facial form. When extractions were considered, they usually involved only the upper first premolars. Lower first molars were sometimes removed in cases of excessive mandibular crowding, poor facial esthetics, or poor cooperation. A typical response:

- "I find that Class II, division 2 patients are usually better growers with flatter mandibular plane angles and can be treated with fewer extractions than division 1 patients."

*What problems are unique to each type of malocclusion?*

The problems unique to Class II, division 1 centered on the retrusive mandible and the treatment modalities needed to correct that situation. Patient cooperation was also a primary concern, especially in regard to anchorage control, and open bites were found to be difficult to correct and retain. Some clinicians said they would try to avoid extractions in fixed appliance treatment of Class II, division 1 patients with extremely retrusive mandibles, because of the complexities that would arise if the patient later required another round of fixed appliances to prepare for surgery. Others mentioned the need to avoid exacerbating a steep mandibular plane angle, which would result in the chin moving downward and backward.

The problems unique to Class II, division 2 included the typical deep bite and retroclined maxillary incisors. An excessive column angle (crown angulation to root angulation) often had to be considered when establishing proper torque control of the central incisors. Specific remarks included:

- "With Class II, division 1 patients, there is frequently difficulty in reducing overjet in a non-growing patient when the mandible is retruded. Without surgery, profile improvement is usually unlikely."
- "The muscular pattern of Class II, division 2 patients makes closing extraction sites much more difficult. However, patients with growth left respond very well to Herbst treatment."

2. *What types of patient records do you currently keep in digital form? What types of digital records are you planning to implement within the next year, or in more than one year?*

Every respondent to this survey was either already using digital technology or planning to use it in the future. The vast majority of practices currently employed more than one type of digital records, including, in descending order of use: photographs, cephalometric analysis, appointment schedule, financial records, x-rays, initial exam worksheet, progress notes, informed consent, and models.

By far the most common current applications were digital photographs, cephalometric analysis, and scheduling. Those who planned to add digital systems within one year or later usually listed informed consent, progress notes, x-rays, or models as potential applications.

*How do you store these records?*

Eighty-three percent of the respondents used in-office servers to store their digital records. Of the remainder, approximately equal numbers relied on storage by outside service providers or at individual work stations. It was apparent that orthodontists are concerned about preserving and recalling their digital records, because many practices used redundant systems to store their records. This kind of arrangement usually involved an office server coupled with an outside service provider.

*How do you back up your records?*

Backing up digital records was obviously a serious matter for the respondents. The most prevalent methods were daily tape backups and external hard drives. Many clinicians said they had dual backup systems, such as an in-house server combined with an offsite backup server. Less frequently mentioned were ZIP drives, taking the backup disk home every night, memory sticks, and DVDs. One respondent said that as an additional precaution against loss, he put the backup tape in a fireproof safe every evening.

*Do you have remote access to your records, and*

*do you allow patients to access their own records?*

Three-quarters of the respondents did have remote access to their records, but about the same percentage did not allow patient access. Those who let patients see their own records often required a password and limited their patients' access to areas such as photographs, x-rays, appointment schedules, and financial records.

*What do you find to be the major advantages of digital record-keeping?*

The primary advantage of digital records was thought to be the ease of access and retrieval of data. Other benefits included consistency of record-keeping, the ability to view digital photographs immediately, the availability of remote access (from home, for instance), the elimination of film and processing, and the marketing edge gained by appearing technologically up-to-date.

*What problems have you found with digital record-keeping?*

About 18% of the practitioners did not see any problems with digital record-keeping. The few disadvantages that were mentioned tended to be computer issues such as changes in software, hardware crashes, the initial expense of the digital components and maintenance contracts, and the learning curve involved.

*Do you believe digital records are less expensive than traditional paper records? By how much?*

In general, the clinicians believed that digital records were well worth their expense. The usual response was that the initial costs of a digital system were high, but that over a period of time this expenditure was more than compensated for by the efficiency of the system.

In quantifying the economic advantage of digital records over paper records, the modest end of the range was indicated by comments such as "not by much" or "the cost is about the same or a little more for digital". On the other hand, there were clinicians who believed that digital records had saved them thousands of dollars over time in the management of their practices.

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Dr. Christopher F. Anderson, Lubbock, TX  
Dr. William A. Barton, San Diego, CA  
Dr. Joachim O. Bauer, Glen Carbon, IL  
Dr. Michael J. Bernard, North Canton, OH  
Dr. Peter Brown, Chatham, Ontario  
Dr. Jorge Carcao, Toronto, Ontario  
Dr. Kyle R. Childers, Benton, IL  
Dr. Francis J. Feeney, Ludlow, MA  
Dr. J. Courtney Gorman, Jr., Marion, IN  
Dr. James B. Gray, Roswell, GA  
Drs. Stanley W. Gum and Nancy L. Gum, San Jose, CA  
Dr. Kenneth R. Irigoyen, Miami, FL  
Dr. David A. Jones, Lawrence, KS  
Dr. Shoel Kerzner, Skokie, IL  
Dr. Scott L. Kesselman, Riverside, CT  
Dr. G. Mark Kingry, Montgomery, AL  
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Dr. Jean Seibold McGill, Easton, PA  
Dr. Brian A. Mohr, Spring, TX  
Dr. R. William Moore, Napa, CA  
Dr. David G. Niles, Eugene, OR  
Dr. Robert A. Norris, San Antonio, TX  
Dr. S. Warren Phillips, Jr., Wilmington, NC  
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Dr. Dale C. Rogers, Midlothian, VA  
Dr. Neil D. Ross, Los Altos, CA  
Dr. Michael R. Sabat, Parma, OH  
Dr. Jason L. Schmit, Cedar Rapids, IA  
Dr. David E. Smith, Temecula, CA  
Dr. Alena R. Spielberg, Apex, NC  
Dr. Paul J. Styrt, San Diego, CA  
Dr. Richard J. Sutter, Clackamas, OR  
Dr. Terry L. Thames, Carrollton, TX  
Dr. Stephen M. Weisner, North Andover, MA  
Dr. John C. White, Northfield Center, OH  
Dr. Timothy G. Wilson, Hagerstown, MD