

Skeletal Expansion for Unilateral Crossbite in a Growing Patient Using the Invisalign® Palatal Expander System.



Dr. Manal Ibrahim (Naperville, IL)

Dr. Manal Ibrahim is a Diplomate of the American Board of Orthodontics and a dual-trained specialist in both Prosthodontics and Orthodontics. She founded Innovative Orthodontic Centers in Illinois, and along with her Prosthodontic husband, Dr. Anthony LaVacca, also founded Innovative Dental Partners providing general, pediatric and specialty dentistry. Dr. Ibrahim received her Dental and Prosthodontic Degrees from the University of Illinois where she serves as a clinical faculty member in the Department of Orthodontics. She also received a Degree in Orthodontics from New York University.

As an Invisalign Diamond Plus Provider, and the #1 Orthodontic Invisalign Provider in Illinois, she has treated over 5500 patients of all ages with a variety of complex dental needs with Invisalign clear aligners. Dr. Ibrahim is an Align Faculty member, serves on the Align Ortho Advisory Board, is an Align Speaker, and is a Mentor on the Align Orthodontist Network. She also serves as a KOL/advisor for Align Technology, collaborating on limited market research projects, product developments and enhancements for the last 10 years.

Dr. Ibrahim has lectured nationally and internationally, authored many articles and has been featured on both TV, radio and print. She's won "Best Dentist" in her local community for 17 consecutive years as she continues to grow her passion of orthodontics and prosthodontics.

Report written by Dr. Manual Ibrahim and co-authored by Dr. Palak Mittal, Align Technology, Inc.

Case report

Patient:

Age: 10 years old male

Chief concern: Complete right posterior crossbite.

Diagnosis & clinical conditions:

A thorough intraoral exam was completed and radiographic records, intraoral and extraoral photo-graphs and an intraoral scan using iTero™ scanners were obtained.

- Mixed dentition, dental unilateral right mild Class II malocclusion
- Anteroposterior: Mild skeletal Class II malocclusion with 1mm overjet
- Vertical dimension findings: ~50% overbite
- Transverse dimension findings: Narrow maxilla, right side constriction with complete right posterior crossbite including primary canine
- Mandibular left canine is partially blocked by primary first molar
- Upper arch crowding is moderate, central diastema present
- Lower arch crowding is mild

Treatment goals:

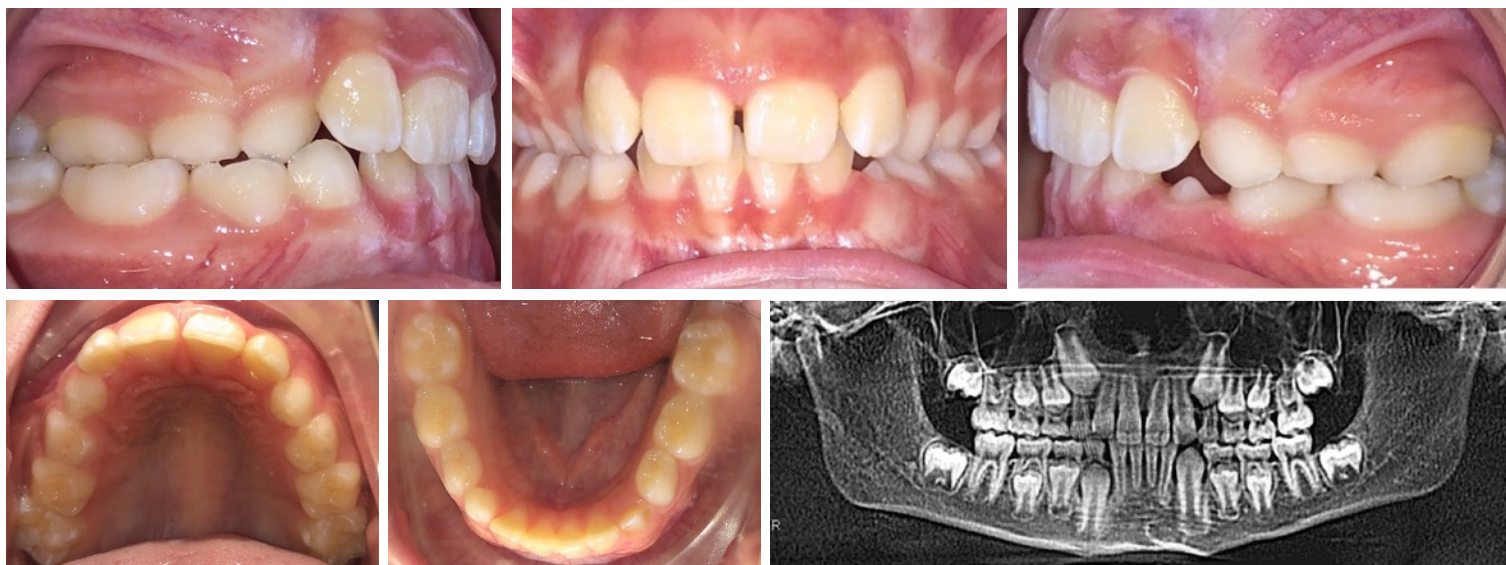
Expand maxillary arch to resolve right posterior crossbite and create space for eruption of permanent teeth.

Treatment plan:

Expand maxillary arch to correct right posterior crossbite using Invisalign® Palatal Expander (IPE) System.

- First expander (Stage 0) is not activated. Each expander is programmed with active expansion up to 0.25mm per day for a total of 24 active expanders giving 6mm of total expansion.
- Expansion protocol – wear Expander #0 to practice on first day followed by stages 1-10 changed daily; expander stages 11-24 wore 2 days each.
- All expanders were handed to the patient at the beginning and patient was instructed to bring them to the office at each visit.

Pre-treatment:



IPE delivery: Invisalign Palatal Expander delivery showing device fit.

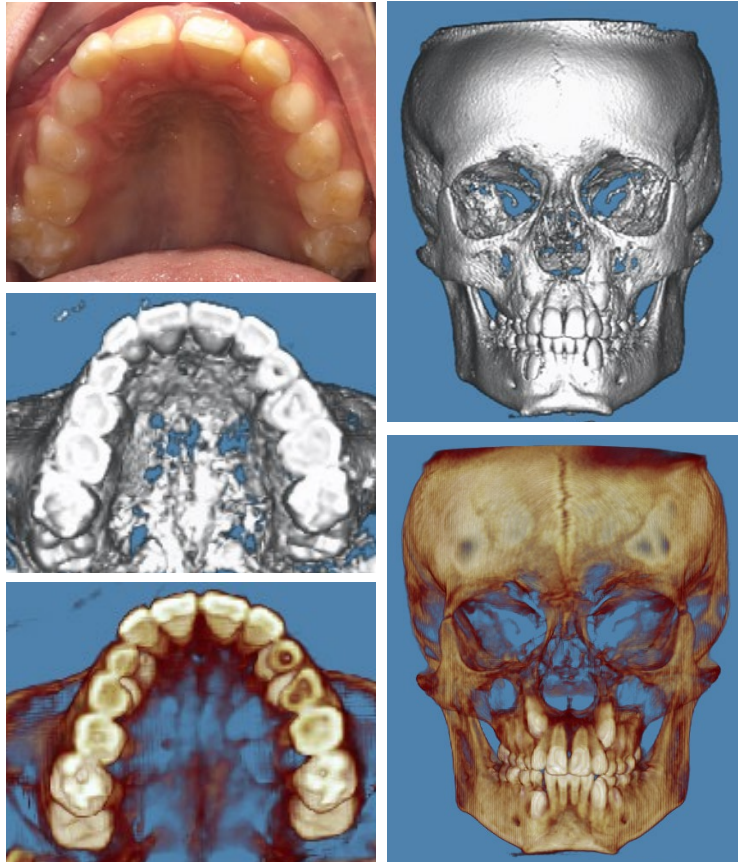


After active expansion is completed with 24 stages (around 8 weeks) of Invisalign Palatal Expanders:

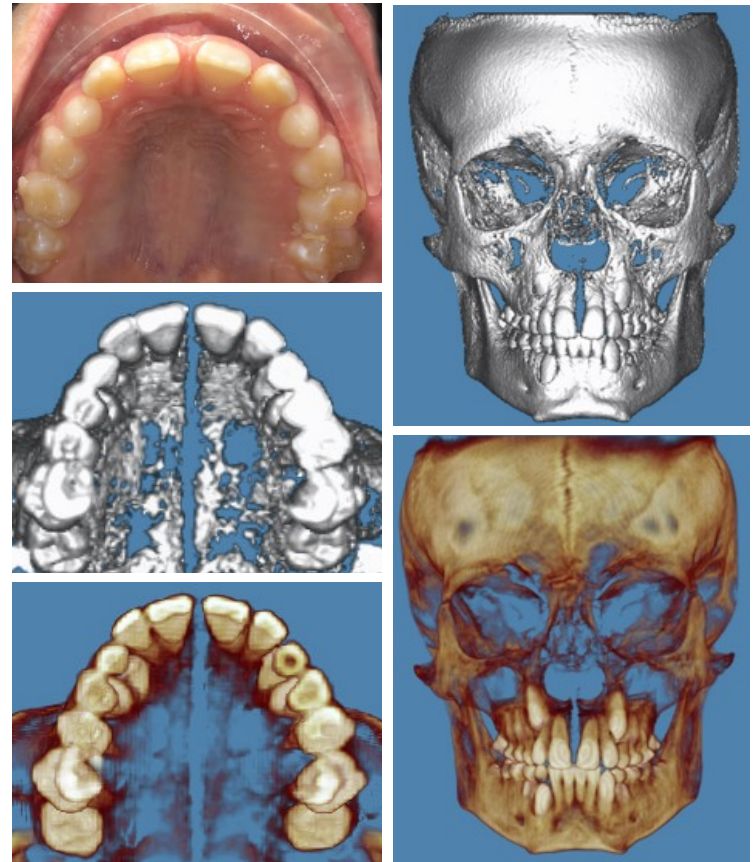


Comparison of pre-treatment and post-treatment records. Post-treatment records indicate sutural opening with associated diastema via intraoral photograph and different digital scan views.

Pre-treatment:



After Invisalign Palatal Expander (IPE) split suture diastema:



Holding protocol:

Stabilize/hold the palate for three months after active expansion with Invisalign® Palatal Holders, changed every 2 weeks.

- No new scan was taken for holders. 6 holders were ordered from expander stage #24 providing a 12-week holding time. Each holder was worn for 2 weeks.
- After 3 months of holders, attachments were removed and patient entered the 'growth and development program' at the doctor's office where case will be monitored at a regular cadence to observe natural development for the premolars to erupt that would set readiness to start Invisalign Comprehensive treatment.
- Appointment schedule: 1 delivery, Expansion checks as needed, 1 holder delivery and 1 attachment removal followed by move to growth and development observation.

Clinical results:

Achieved the treatment goal of planned expansion. More symmetrical upper arch was achieved.

Pre-treatment:



Post-expansion IPE #24:



Holder delivery:



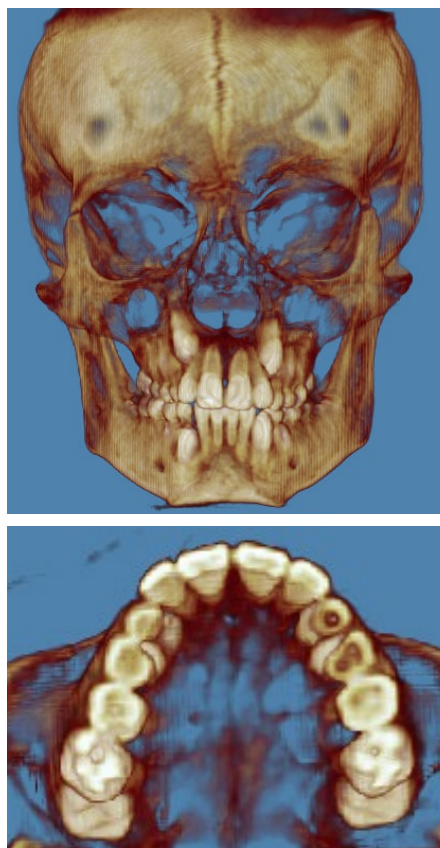
Holder:



3 months observation:



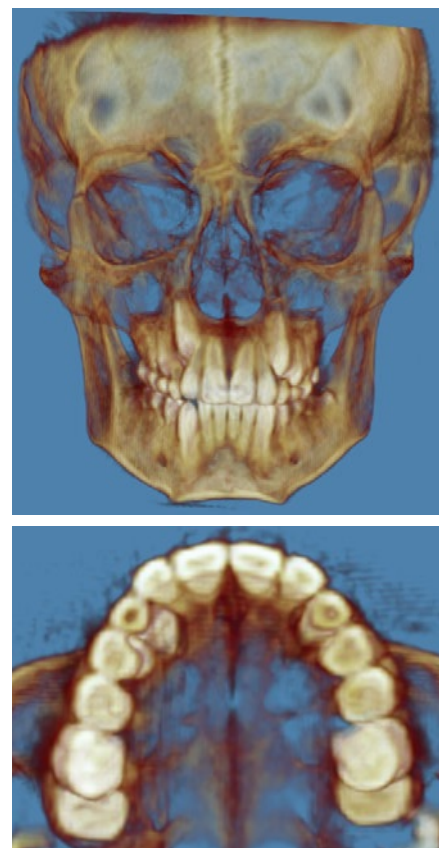
Pre-treatment:



After IPE split suture diastema:



3 month observation, 8 month progress:



3-month observation records indicate sutural healing. Incisors are aligning with available space in the arch with closure of diastema due to bone remodeling.

Patient experience with the Invisalign® Palatal Expander System (IPE)

Patient only had one active expansion appointment check. He had no issues with it at all. Patient was worried about midline diastema but, doctor reminded/reassured that it was an excellent signal for successful treatment outcome.

Excellent patient cooperation, patient did not eat while wearing the devices but wore at all other times. Patient demonstrated excellent compliance with the treatment plan.

Parents were very satisfied with the entire process. Patient's mother was thrilled with the outcome and requested consultation for Invisalign treatment for herself.

Subsequent treatment plan

Patient entered growth and development program where case will be monitored and continue with Invisalign Comprehensive treatment when premolars have erupted.

“This was one of the first Invisalign Palatal Expander (IPE) System cases in our practice and given such a positive experience for patient, parent, doctor and staff, it gave us confidence to incorporate IPE in our practice as a treatment option”.

–Dr. Manal Ibrahim

If you have Invisalign treatment results from your practice that you would be interested in sharing with your peers, please submit your cases to the Invisalign Gallery at:

submit.InvisalignGallery.com