



NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.™

Helping Hand™

Health Education for Patients and Families

Mandibular Distraction Osteogenesis

Mandibular Distraction Osteogenesis (MDO) is a surgery done for infants with Pierre Robin sequence. MDO lengthens the jaw to help open the airway so the baby can breathe safely and comfortably on their own.

Cause

Pierre Robin sequence is a condition that includes a small jaw (micrognathia), a tongue that falls back into the throat (glossoptosis), and breathing trouble. Most babies with Pierre Robin sequence also have a cleft palate. (Please refer to Helping Hand HH-I-449, *Pierre Robin Sequence*, for more information).

About the surgery

Some babies with Pierre Robin sequence need surgery to help them breathe safely. Your child's airway team (Plastic Surgery and ENT) will help you make this decision.

One of the surgeries that can be done for breathing difficulties in Pierre Robin sequence is MDO. During the procedure, the mandibular bone (lower jaw) is cut, and distractor devices are temporarily placed. The distractor devices are turned for about 3 weeks, moving the lower jaw slowly forward and allowing new bone to form. This lengthens the jaw to provide more space in the airway. After the procedure, your baby is better able to breathe on their own.

During surgery

MDO is done while your child is under general anesthesia. A small incision is made under the jaw on both sides of the neck. The mandible is cut on both sides, which separates the front and back of the jaw. Two distraction devices are placed, one for

each side. The devices are attached to the front and back sections of bone. Small activation arms are connected to the distraction device. They are brought out of the skin to allow for the devices to be used.

After surgery

After the MDO surgery, your child will be taken back to the Neonatal Intensive Care Unit (NICU) with a breathing tube in place. Your child will stay sedated for about 1 week. A few days after surgery, the surgical team will use the activation arms to slowly move the jaw forward. This widens the space between the cut edges of the bone, allowing new bone to form in the space, and lengthening the jaw. Making the jaw longer also improves the position of the tongue. The tongue is pulled forward as the jaw lengthens.

Your surgeon will give you an estimate of how many days the activation arms need to be turned. The goal is to make sure your baby's lower jaw lengthens enough to improve their airway. The activation arms are usually turned for about 3 weeks. After the jaw is moved enough forward, the distraction device will be left in place for 3 to 4 months to make sure the new bone heals properly.

After the 3 to 4 months, the distractor devices will be removed in the operating room with your child under general anesthesia. They are removed through the same incisions that were used when they were placed. Your child will have small scars where the activation arms were located.

The surgical team will discuss any risks with you before surgery.

What to do and watch for at home

While you are at home, keep the activation arms clean. You do not need to use any special soap or anti-bacterial cream on the sites. If you notice any redness, swelling, drainage or changes in the look or function of the activation arms please call your child's Plastic Surgeon's office. They may request that you send pictures for them to review.

- MDO does not cause problems with long-term feeding or speech development. Babies who have MDO are able to successfully drink liquids and begin eating solids with a spoon.

After your baby is discharged from the hospital, a feeding therapist with the Cleft/Craniofacial team will see the baby regularly at clinic appointments to monitor

feeding. The feeding therapist will give you suggestions to help both you and your baby if you need any help with feeding.

Follow-up appointments

After your baby has been discharged from the hospital, they will have a follow-up appointment with the Craniofacial/Plastic Surgery Clinic. This appointment will be scheduled before your baby leaves the hospital. The team will check your child's surgical sites and will continue to follow and monitor your child's airway, feeding, development and other essential aspects of care.

If you have questions before the appointment, please contact the Craniofacial/Plastic Surgery clinic Monday through Friday from 8 AM to 4:30 PM at 614-722-6449. For any urgent concerns during evenings, weekends or holidays, please call (614) 722-2000. Ask to speak with the plastic surgeon on call.