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SPECIALIZED RESOURCES:

Clubfoot Casting

By Brie McDaniel BS, CCLS

As a child life specialist working in an outpatient orthopedic clinic, I regularly work with the clubfoot population. Clubfoot is a congenital condition where a person's foot is turned inward and downward. Because clubfoot is a congenital condition, most of these patients are newborns. Families typically begin treatment for clubfoot immediately after a baby is born and will often present to clinic within a few weeks to begin the process of serial casting using soft fiberglass. Each week for about 6-8 consecutive weeks, parents bring their baby to clinic for casting. Upon arrival, the family is brought to our patient room that is designated for clubfoot casting. My institution has a specific room dedicated for clubfoot casting that allows for environmental modifications as well as minimizing exposure to germs to protect the infant's developing immune system. Before casting begins, I provide parents with a preparation book that helps them understand what clubfoot is and details what their journey is going to look like.

Like many procedural supports for infants, I focus on decreasing overwhelming sensory input and providing calming sensory input. For example, in our clubfoot casting room we use the natural light from the windows and have a sound machine running. The patients lay on top of a vibrating mat which provides a soothing tactile input, as well as having their top half swaddled with a donor-made swaddle (that way we don't ruin their personal swaddle with fiberglass). The patient's parents will stand or sit by the patient's head to provide a familiar presence and soothing touch and I will provide a

pacifier with sucrose. All of this is done while the cast technician and the orthopedic surgeon are working together to cast the feet into different positions in order to correct the foot deformity. The casts are removed at home by the caregivers on the morning of their appointment. I always encourage families to massage and play with the baby's feet after cast removal so that they are getting positive stimulation and not just the stretching during casting.

The last step of the casting phase is a tenotomy. Not all babies require this procedure, however, most do in order to achieve the last position of casting. A tenotomy is a procedure in which the Achilles tendon is released. The baby then goes into their last cast for three weeks while the tendon heals in the lengthened position giving them a full range of motion. The tenotomy is completed in clinic. Prior to the procedure a numbing cream is applied to the back of the heel and secured first with press'n seal wrap and then a sock. Using press'n seal wrap instead of tegaderm allows us to remove the dressing without upsetting the baby like tegaderm often does. The sock ensures that the baby does not kick the wrap off while the numbing cream is activating. While we wait for the numbing cream, the baby stays with the parents in the waiting room. Once the numbing cream has been on for the appropriate amount of time, I bring the baby back to the clubfoot room where the set up mirrors the baby's regular casting appointments- the only difference is that the family waits in the waiting room as the tenotomy is a sterile procedure.

The goal of bringing the baby back myself is to reaffirm to the family that my only role is to care for the baby's well being and ensure the baby is coping positively. When the procedure is complete and the casts have been applied, myself and the orthopedic surgeon bring the baby back to the parents in the waiting room.

These casting appointments can be very challenging for families. Not only are they navigating life with a newborn, but they are accepting what is often an unexpected diagnosis and processing how newborn milestones may look a little differently than how they planned. Some therapeutic activities that I implement with families to help them cope with this are decorating the casts for holidays or interests and encouraging parents to create a scrapbook or shadow box of the baby's clubfoot journey. To decorate the casts, I use the Cricut to print and cut images on regular printer paper. These can be images to represent holidays, sibling interests, or parent interests. I

place the images on the cast while the fiberglass is still wet and then wrap the casts with an ace bandage that has been dipped in water to help the images adhere to the fiberglass. Once the fiberglass is dry, I remove the ace bandage and seal the images with mod podge. In the past, I have made matching Christmas pajama casts, super bowl casts, Valentine's day casts, Bluey casts, and more. For documenting the baby's clubfoot journey, I encourage parents to create a clubfoot scrapbook that documents the baby's journey. Each week, we take a new picture of the baby's casts to document the progress being made. I encourage parents to include a journal entry with the picture to document what number cast the baby is on, how they are coping with the casts that week, what milestones they achieved despite the casts, and fun places they went to or fun things they did while in the casts. For each baby with clubfoot, the parents and I create 3D molds of the baby's foot before

clubfoot casting begins and after their last cast comes off. The molds are then put in a shadow box along with the donor-made swaddle and a piece of the casts and given to the parents to document the progress made and celebrate the end of the casting journey. I have also created ornaments as a way of scrapbooking for the parents. I take a small piece of the fiberglass from one of the casts and place it inside of a clear ornament. I then use the Cricut to cut out the baby's name and date out of vinyl which is placed on the outside of the ornament.

Additionally, parents may be working with siblings to help them cope with a new sibling who requires additional attention and special treatment. Clubfoot casting can only be done by highly specialized orthopedic surgeons and families may have to travel long distances to receive the care they need for their child. To support siblings, I encourage parents to include the sibling in the casting care. This includes having

the sibling help keep the casts dry during sponge baths, removing the casts and massaging the baby's feet after the casts have been removed. Casting a doll or stuffed animal for the sibling is another helpful way that I support siblings.

During the second phase of treatment, the child goes to an outside orthotics and prosthetics vendor where they are fitted for boots and bars which is a brace that is worn ideally until the child is 4-5 years of age in order to maintain the position of the foot. The brace is worn at all times for the first three months and then is transitioned to being worn at bedtime and for naps. This phase is often considered the most important part of treatment because the families are no longer coming to clinic each week. Instead, parents are responsible for incorporating the braces into their daily routine and if the brace is not worn, the foot will revert back to the clubbed position while the child is growing, leading to difficulty with mobility and the need for future surgeries.

MY FAVORITE RESOURCES WHEN WORKING WITH PATIENTS WITH CLUBFOOT AND THEIR FAMILIES

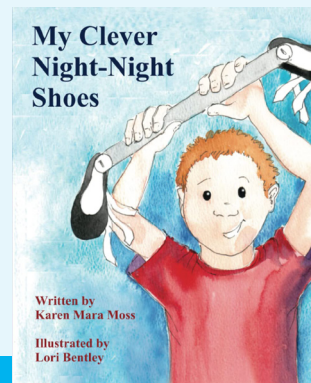


VIBRATING MAT

During casting, the baby will lay on the vibrating mat, providing soothing, comfort, gentle motion, warmth, security, calmness, relaxation, and added reassurance. Not only does this promote positive coping, but when the baby can relax their body, the providers can get a better mold on the cast.

MY CLEVER NIGHT NIGHT SHOES

This book teaches both the patient and sibling about what boots and bars are and why they are worn. Not only can this be used for understanding, but you can also have siblings read this with the baby in order to promote bonding.



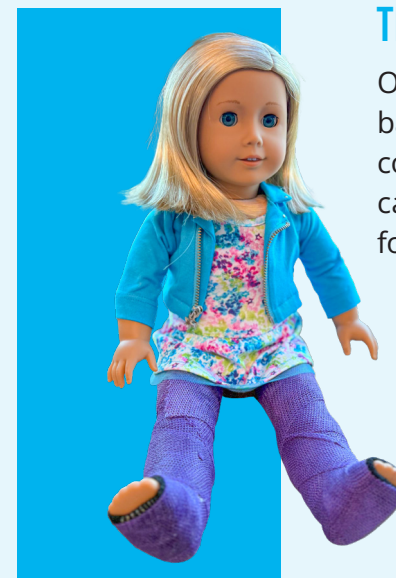
LUNA BEAN CASTING KIT

This is used as a therapeutic activity for the parents. Together, we create molds of the child's foot on the first and last day of casting. The molds are then displayed in a shadow box and gifted to families to document the progress made during the casting journey and celebrate the end of the first phase of treatment.



TEACHING DOLL

Our patients often have siblings at home who are not only coping with a brand-new baby at home but one with an unfamiliar diagnosis and treatment. To help the siblings cope with this, we place casts on a doll or stuffed animal using casting material. If you cannot use actual soft cast material for this, Coban is a great alternative.



3D PRINTED BOOTS AND BARS

There are 3D printed boots and bars that we put on stuffed animals and gift to patients so that they have a comfort item that looks like them, offering reassurance, familiarity, and emotional support during treatment.

