



DEPARTMENT OF PLASTIC SURGERY HAND CLINIC: CONSTRICTION RING SYNDROME

The Department of Plastic Surgery at Children's Hospital Boston provides a wide variety of comprehensive reconstructive and cosmetic surgical treatments for children with various craniofacial anomalies, vascular anomalies and congenital hand defects. Patients from around the world are referred to Children's Department of Plastic Surgery for state-of-the-art treatment approaches and methods. With our affiliation with Brigham and Women's Hospital, the Department of Plastic Surgery continues to care for young adults and adult patients.

Children's Hand Clinic specializes in the evaluation and treatment of congenital and acquired hand problems. Some of the conditions that we treat include arthritic conditions, traumatic injuries, sport injuries, fractures, sprains, and dislocations. We also specialize in treating congenital anomalies, including syndactyly (webbed fingers), polydactyly (extra fingers), club hand, finger or hand size anomalies, and vascular malformations.

Constriction Ring Syndrome

Constriction ring syndrome, also known as amniotic band syndrome, is a congenital (present at birth) disorder that occurs when fibrous bands of the amniotic sac (the lining inside the uterus that contains the fetus) become entangled around a developing fetus.

In some cases, the bands wrap around the fetus's head or umbilical cord. More commonly though, the bands wrap around a limb, fingers or toes, creating severe constrictions—similar to what happens when you wrap a rubber band around your arm or leg.

This sometimes results in nothing more than an unsightly, circumferential cleft (indentation) extending around a finger or limb. However, deeper bands can cause severe swelling, cut off of lymphatic or venous flow, and interfere with development of the appendage. If a band is tight enough, the constriction may even cause an in utero (before birth) amputation of the appendage.

What causes constriction ring syndrome?

The exact cause of the syndrome is unknown, but it is not believed to be hereditary. Many cases seem to occur for no apparent reason.

How common is constriction ring syndrome?

Constriction ring syndrome occurs in about 1 in every 10,000-15,000 births. It is believed to occur more frequently in the upper extremity rather than lower extremity.

How is constriction ring syndrome diagnosed?

Occasionally, constriction ring syndrome can be diagnosed before birth by prenatal ultrasound. However, the majority of cases are diagnosed at or shortly after birth. The diagnosis is typically made by the treating physician after a thorough medical history and physical examination. X-rays of the affected limb are also used to help assess the degree of involvement.

How is constriction ring syndrome treated?

Treatment of constriction ring syndrome is individualized according to your child's specific condition. In general, if your child has shallow, incomplete constriction rings, he may be treated with a simple day surgical procedure. If your child has deep constriction rings, one or more surgeries may be required to improve the appearance and function of the affected hand.

Surgeries are usually performed after your child and his hand have had time to grow (6 months-1 year). Deep constriction rings that impede blood flow must be addressed immediately, however. It is important to note that despite the differences in appearance, affected hands/fingers generally have excellent long-term function.



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Board Certifications

American Board of Plastic Surgery,
American Board of Surgery,
Certificate of Added Qualification in
Hand Surgery

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