PODIATRY

Feet & Practice

A foot health message from Bayswater Allied Health

Clubfoot

Clubfoot is a congenital condition usually diagnosed either at birth or in the weeks following birth. The contorted foot shape results from shortened tendons and ligaments, forcing the foot to twist inwards.

Symptoms:

- The condition is easily recognisable due to the unusual shape of the foot as it is misaligned and rotated inwards with very high arches.
- If only one foot is affected it will be approximately 1 cm shorter than the other foot.
- 50% of cases have clubfoot affecting both feet.
- The patient will present with underdeveloped calf muscles due to abnormal muscle development as a result of the condition.
- Severe cases of clubfoot can be twisted to such a degree that the foot appears inverted.

Clubfoot is idiopathic, with the main risk factors for the condition being:

- Male sex: boys are two times more likely than girls to be born with clubfoot.
- Family history of clubfoot: risk is increased if parents or siblings suffer from clubfoot.
- Existence of other congential disorders, such as spina bifida can increase the risk of clubfoot.
- Maternal smoking during pregnancy, especially when family history is also a risk factor.
- Illicit drug use during pregnancy.
- Infection during pregnancy.
- Low levels of amniotic fluid surrounding the foetus during pregnancy.

Children born with clubfoot are usually otherwise healthy and the condition is not painful. The main effects of clubfoot include:

- Decreased mobility.
- Stability and gait problems: a child affected by clubfoot may not be able to walk normally and will compensate by walking on the sides or balls of the feet, which lead to other biomechanical problems.
- Shoe size when only one foot is affected, with the affected foot being up to one and a half times small than the healthy foot.
- Arthritis.
- Low muscle mass and poor muscular development through lack of use of the calf muscles.
- Self-esteem and self-image problems, particularly during teenage years.

TREATMENT OPTIONS FOR CLUBFOOT

Treatment to correct clubfoot should be started as soon as possible, usually within the first two weeks of birth. There are two main courses of treatment used for clubfoot internationally, with the main treatment options detailed below:

1. The Ponseti method

The Ponseti method is the most common course of treatment for clubfoot and studies have shown that this method is 95% effective with an outcome of normal-looking and healthy feet, allowing patients to go on to live active lives without the burden of mobility problems. The Ponseti method is usually performed by a doctor or podiatrist and involves the manipulation of the foot to correct the position and the placement of a plaster cast to hold the foot in place. The foot should be realigned and recast at least once a week — twice if needed — for up to eight weeks. Once casting is no longer required, a percutaneous Achilles tenotomy is usually performed and a final cast applied for post-operative healing.

Maintenance of the foot alignment achieved in the clinical setting should be performed through a strict at-home care regime involving exercises and the fitting of custom corrective shoes with bar and braces. Thorough parent education is required to ensure compliance with the treatment plan. At-home care may be necessary for up to three years.

2. The French method

The French method involves manipulating the foot into position and taping the foot to hold it in position. This method is usually performed by a podiatrist or physical therapist in tandem with the child's parents, and is performed daily. In addition to daily stretching and taping, a machine is used to ensure constant movement of the limb throughout the night. This treatment should be maintained for two months, at which point stretching should continue on a daily basis, however taping can be reduced to alternate days until the infant reaches six months.

After six months the alignment of the foot should be correct, however maintenance will be required by the parents in the form of daily stretching exercises and the application of night splints for up to three years. Again, thorough parent education is required to ensure compliance and to reduce recurrence.

3. Surgery

The Ponseti or French methods are usually successful for the treatment of clubfoot, however recurrence is possible, especially if treatment instructions are not followed and severe cases may not respond to these therapies. Treatments described above may need to be repeated or more invasive surgical intervention may be required to lengthen the tendons, sometimes in combination with the removal of bone and the patient should be referred on to a podiatric or orthopaedic surgeon.

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