Barking, Havering and Redbridge University Hospitals NHS Trust

The Referral pathway for Clubfoot -Talipes Eqvinovarus

1. Primary Care Provider (PCP) / Paediatrician:

Prenatal Diagnosis: Clubfoot can be detected during routine prenatal scan.

Postnatal Diagnosis: Clubfoot is often identified at birth during the newborn and infant physical examination (NIPE).

The PCP or paediatrician confirms/suspect the diagnosis based on the appearance of the foot and clinical assessment. When club foot is suspected or identified the paediatrician /PCP will refer the newborn to the paediatric orthopaedic surgeon.

2. Referral to Specialist

Paediatric Orthopaedic Surgeon:

The primary care provider refers the infant to a paediatric orthopaedic surgeon specializing in congenital foot deformities. The referral should be made as soon as possible to ensure early intervention, ideally within the first week of life. This structured referral pathway ensures comprehensive care for children with clubfoot, promoting effective treatment and positive long-term outcomes.

3. Professionals involved in the care:

-Physical Therapists.
-Social services
-Support groups.

If you need advice or have any suspicion of club foot, please contact Amanda Barlow Lead Orthopaedic Technician Queen's hospital Romford 01708 43500 EXT 6144 Contact email amanda.barlow3@nhs.net

Understanding club foot:
A guide for parents and carers

What is Clubfoot?

Clubfoot, also known as congenital talipes equinovarus (CTEV), is a common congenital birth defect, characterized by fixation of the foot in a hand-like orientation – in adduction, supination, and varus – with concomitant soft tissue abnormalities. It can be bilateral or unilateral.

Congenital = present at birth, talipes = ankle and foot, and equinovarus = pointed inward and downwards as shown in the pictures below.

Diagnosis

It can be diagnosed antenatally with US from 12 weeks' gestation, or postnatally as part of the Newborn and infant physical examination (NIPE) screening program. These examinations are performed within 72 hours of life and at 6-8 weeks of age.

Causes of Clubfoot

The exact cause of clubfoot is not known, but it is believed to be due to a combination of genetic and environmental factors. It can occur in isolation or as part of a syndrome.

Risk factors:

- **Family history**

First-degree relatives have an occurrence rate 17 times higher than the general population. Second-degree relatives have an occurrence rate 6 times higher than the general population. Monozygotic twins have a >30% chance of both twins being affected.

- **Male sex**

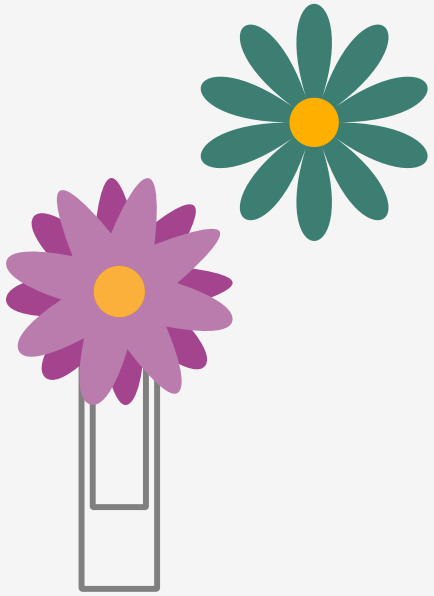
Boys are affected twice as often as girls.

- **Associated congenital abnormalities**

Such as arthrogryposis, cerebral palsy, polio, spina bifida, and syndromes such as amniotic band, Down's, Freeman-Sheldon syndrome, or Mobius syndrome, and developmental dysplasia of the hip with other birth defects.

Types of Clubfoot

1. Idiopathic Clubfoot: Occurs without any associated abnormalities. The deformity is not correctable with an examination.
2. Postural: Correctable with examination.
3. Non-Idiopathic Clubfoot: Associated with neuromuscular disorders or syndromes.



Initial assessment

- **Full history (including social history and family setup).**
- **Extremities, spine, and hips should be examined.**
- **The spines should be assessed for evidence of dimples or hair patches.**
- **The foot should be assessed for deformities. Club foot will have fixed equinous, and dorsiflexion is not possible.**
- **Full neurological examination to exclude underlying neurological cause.**
- **Radiographs of the foot are not routinely required.**
- **Pirani scoring which is a system used to grade the severity of club foot.**

The British Society for Children's Orthopaedic Surgery BSCOS recommends that all babies with club foot deformity should receive a hip US screen.

Treatment Options

Early treatment is crucial for correcting clubfoot and ensuring normal foot function. The primary treatments include:

Ponseti Method:

- **It is a method to straighten the foot using manipulation, stretching, and casting that is repeated every 4- 7 days until correction is achieved. In uncomplicated cases, Ponseti procedure should begin between 2 and 6 weeks of life.**

Per cutaneous Achillies tenotomy:

About 85-95% of cases will require Percutaneous Achilles tenotomy. It is a small surgical procedure that only takes seconds in which the Achilles tendon (heel cord) is cut, it allows the ankle to flex upward(dorsiflex).

This procedure is usually done in outpatient clinic under local anaesthesia and is performed by the paediatric orthopaedic surgeon. Following the Achilles tenotomy anew ponseti blaster is applied holding the foot in its new maximally corrected position.

The procedure is generally safe but like any surgical procedure there is element of risks. The risks associated with the Achilles tenotomy are small and include:

- **Pain.**
- **Infection.**
- **Damage of adjacent nerve or blood vessel.**
- **Bleeding. · Failure of the procedure.**

Bracing: After the casting phase, the baby will need to wear a brace to maintain the correction. Once a child's foot and ankle are in the correct position, they will be held in place with special boots and bars worn until the age of five years.

Surgical Treatment

Surgical Treatment: In rare cases where non-surgical methods fail, surgery may be required to correct the foot position.

Long-Term Outlook
With proper treatment, most children with clubfoot can achieve a nearly normal foot and lead active, healthy lives. Regular follow-up with a healthcare provider is essential to monitor the progress and address any recurrence.

Coping and Support

Education and Counselling: Learning about clubfoot and its treatment can help parents and caregivers manage the condition better.

Support Groups: Connecting with other families facing similar challenges can provide emotional support and practical advice.

FAQs

Q: Is clubfoot painful for the baby?
A: Clubfoot itself is not painful for the baby. However, without treatment, it can lead to pain and difficulty in walking later in life.
Q: What will happen if it is left untreated?
If left untreated the child with club foot will walk on the lateral side or dorsum of the foot. This will result in pain, skin breakdown, poor balance, reduced mobility, and inability to wear shoes.
Q: Can clubfoot come back after treatment?
A: There is a small chance of recurrence, which is why bracing, and regular follow-up are critical to maintaining correction.
Q: Is clubfoot preventable?
A: Since the exact cause of clubfoot is unknown there are no specific measures to prevent it. However, early detection and treatment are highly effective.

References

1-Hopwood, S. et al. (2023) 'Clubfoot: An overview and the latest UK guidelines', British Journal of Hospital Medicine, 84(1), pp. 1–7. doi:10.12968/hmed.2022.0380.

2-Clubfoot Consensus Steering Group BSCOS. Available at: https://www.bscos.org.uk/public/consensus-projects/consensus-project/clubfoot-consensus-steering-group

3-Bina, S. et al. (2020) 'Interventions for congenital talipes equinovarus (clubfoot)', Cochrane Database of Systematic Reviews, 2020(5). doi:10.1002/14651858.cd008602.pub4.

4- Equinovarus foot deformity - symptoms, diagnosis and treatment | BMJ best practice. Available at: https://bestpractice.bmj.com/topics/en-gb/745

Information compiled by;
Paediatric SpR at Barking Havering and Redbridge University Hospitals
Dr.Bushra Rafique
Dr.Hanaa Hamour
Graphic designer: Dr Emeema Govindu

A special thanks to Dr Krishna Vemulapalli , paediatric orthopaedic surgeon at Queen's Hospital Romford for his guidance and support