ORIGINAL RESEARCH PAPER

Volume-7 | Issue-6 | June-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

MANAGEMENT OF NEGLECTED AND RESISTANT CASES OF CTEV BY JESS EXTERNAL FIXATOR

Orthopedics

Dr Viaykumar Kulambi Professor , Department Of Orthopaedics, Jjm Medical College ,davangere

Dr Anand Katakdhond * Post Graduate Student ,department Of Orthopaedics, Jjm Medical College Davangere
*Corresponding Author

ABSTRACT

BACKGROUND AND OBJECTIVES: Club Foot is the most common congenital deformity. It can be identified at birth by observing forefoot adduction, hind foot inversion,pes cavus and equinus deformity. The study was conducted to evaluate the functional outcome of controlled fractional differential distraction in the management of neglected and resistant club foot by Joshi's external Stabilization System (JESS)
METHODS: 20 children underwent 20 JESS procedure at department of orthopaedics, JJM Medical College, attached to government hospital , Davangere and Bapuji hospital , Davangere. During the period from September 2015 to September 2107,patients were followed regularly. Three dimensional corrections was achieved by use of the distractor device.
RESULTS: Excellent results in 7 feet, good results in 9 feet, and fair in 3 patients and 1 feet was poor
CONCLUSION: The **JOSHI'S EXTERNAL STABILIZATION SYSTEM** is a semi invasive method, safe method for correction of neglected and resistant cases of CTEV. It avoids all surgical methods post-operative complications, by causing physiological lengthening of soft tissues, by histiogenesis of soft tissues provides, proper control of all components of correction

KEYWORDS

Club Foot; External Fixator; Jess; Ctev

INTRODUCTION

Idiopathic clubfoot is one of the oldest and commonest congenital deformities of mankind, It occurs in variable severity(1).
Many operative techniques have been tried to achieve full correction, but the average failure rate in clubfoot surgery is 25% (1)
. The discovery of principles of distraction histoneogenesis by Ilizarov came like a silver lining in the dark clouds of managing complex deformities of limbs (2-4).
However, application of Ilizaorov technique was complicated due to its bulky nature and complicated management (5) Joshi et al developed a lighter and simpler version of the same technique which could be easily applied to smaller feet
This external fixator has many theoretical advantages like avoiding fibrous tissue formation, absence of further shortening unlike bony procedures, proper control of all components of corrections, actual lengthening and histoneogenesis of the soft tissue.

However, there exist only few studies reporting the efficacy of this technique (7, 8). Hence, the present study was done to assess the efficacy of JESS method of differential distraction as a method of treatment in resistant and neglected clubfeet complications like joint subluxation, rocker bottomdeformity occurred

MATERIALS…..AND METHODOLOGY

This study includes management of 20 feet in 17 patients with Neglected and Resistant cases of CTEV by JESS. Between September 2015 to September 2017 admitted at Chigateri General Hospital and Bapuji Hospital attached to J.J.M. Medical College, Davangere.out of 20 feet ,3 were bilateral.

- **Inclusion criteria:**
- Age 1-8 years
- Type of club feet: Resistant and Neglected cases.
-
- **Exclusion criteria:**
- Non-idiopathic clubfoot.
- Patients who are medically unfit for the surgery
- Parents refusal for surgery
- We operated all our patients under general anaesthesia.
- Repeat assessment was done at the end of 3 rd, 6th, 9th month after removal of JESS fixator and results were analysed. They were told to report in case of relapse of any deformity. Cases were considered as failure if (a)there was no or incomplete clinico-radiological correction (b)

- **JESS INSTRUMENTS**

Operative procedure

- It includes three and the metatarsal hold and then connecting the these segmenal, holds. With the help of connecting rods „"L"rods "Z"rods
- the Tibial hold
- the Calcaneal hold
- The metatarsal hold

Tibial hold

Calcaneal hold

Axial calcaneal hold

metatarsal hold

PRE OP DEFORMITY

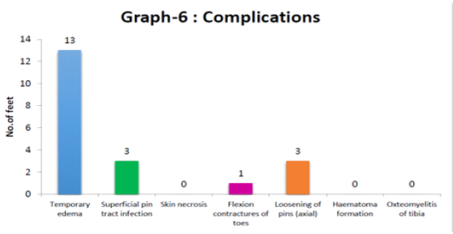


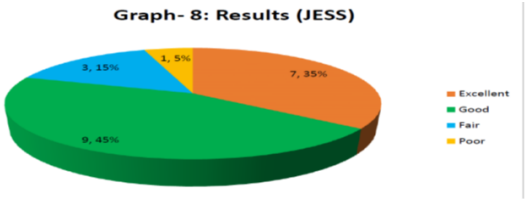

POST OP CORRECTED FOOT

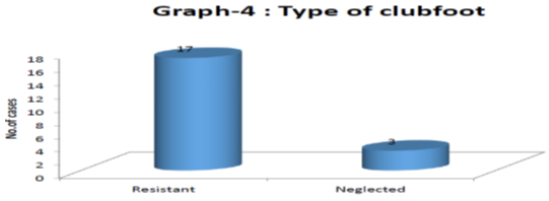


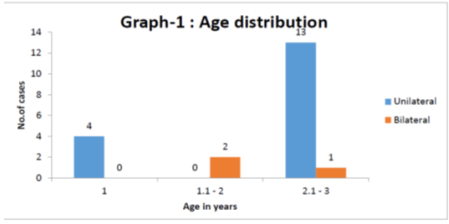

WITH JESS FIXATOR

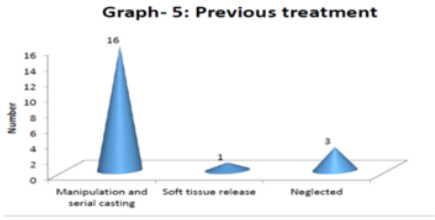










Distraction method

- Differential distraction was begun on the 3rd post-operative day. There is a square knob which has to be turned to enable distraction.
- Medial distracters (tibio-calcaneal and calcaneo-metatarsal) were distracted 1 mm / day divided into four 90 degrees turn. Lateral distracters were distracted 0.5 mm/ day divided into two 90 degrees turn of square knob'

Postoperative

- The fixator was retained for a period of twice the distraction period in order to allow the stretched ligaments and capsule to heal.
- Once the fixator was removed, an above knee cast was given with the foot in maximum abduction and dorsiflexion.
- Child was encouraged squatting position .walking with help of tricycle wooden made,walking on slope.

Discussion

Correction by distraction has distinct advantage of histoneogenesis, lack of scar tissue formation and the absence of further shortening of the foot.

There are many reports of the fixators distractor correction of clubfoot with variations in the technique with good outcome (3-8).

Suresh et al found JESS to be ideal for correction of residual and relapse clubfoot in their study involving 26 children with 44 clubfeet (7).

0Similar results were found by Oganesian and Istomina (11). Short-term assessment of results of clubfeet Joshi's External Stablization System (JESS) Application For Correction Of Resistant Club-Foot 4 of 5 correction with JESS distractor by Anwar and Arun showed excellent and good results in 59.7% of cases (8).

The better results in the present study can be attributed to enthusiastic and compliant parents and longer hospitalisation during post-operative period

Anwar and Arun found a strong correlation between better results and children who strictly follow the distraction-static phase protocol and the final outcome, stressing the fact that parent involvement is an essential component in treating neglected clubfeet (8).

A longer period of post-operative stay provided a controlled environment for the static period and reduced the risk of pintract infection and other complication

CONCLUSION

- The goal of any clubfoot surgery is to obtain a cosmetically acceptable,pliable, functional, painless, and plantigrade foot, and to spare the parent and the child from the ordeal of frequent hospitalization and years of treatment with casts and braces.
- The procedure used in the current study holds promise for fulfilling the above-mentioned goals.
- The JESS fixator provides three dimensional correction of the deformity,by virtue of its principle of fractional controlled differential distraction.

REFERENCES

1) Pandey S, Kumar A. Club foot revisited. 1st Edn., Jaypee Brothers, Mumbai 2009;p.3,60,61.
2) Vincent J Turco. "Clubfoot", Churchill Livingstone, 1981:1-84.
3) Antonio Scarpa. Pathological anatomy of club-foot. J Bone Joints Surg, 1963;45-A:45.
4) Sheldrake T. Distortions of the legs and feet in children. 1806.
5) Mathew B Dobbs, , José A Morcuende, Christina A Gurnett and Ignacio V Ponseti, Treatment of Idiopathic Clubfoot-An Historical Review, Iowa Orthop J. 2000; 20: 59–64.
6) Little WJ. A treatise on the nature of club-foot and analogous distortions. London: W Jeffs, S Highley; 1839.
7) Dickson R. An essay on club-foot and some analogous distortions. NY quart. J Med Surg. 1835;2:1.
8) Carroll NC, Gross RH. Operative management of clubfoot. Orthopedics. 1990; 13:1285–1296.
9) Dunn N. Stabilizing operations in the treatment of paralytic deformities of the foot. Proc Roy Soc Med. 1922;15:15.