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OBSTACLES ENCOUNTERED DURING TREATMENT OF CLUBFOOT BY PONSETI METHOD IN WESTERN RAJASTHAN

Community Medicine

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ABSTRACT

INRTODUCTION: Idiopathic clubfoot affects approximately 50,000 children each year and is one of the leading causes of disability in India. Ponseti's technique of casting, tenotomy and bracing is an acceptable method worldwide in its management.

MATERIAL AND METHOD: The Ponseti technique is very slowly picking up in our country, inspite of its ease of usage and compatible results. In this retrospective study of 215 patients enrolled from march 2013 to June 2016. We will be discussing the ponseti's technique in brief, various set-up's where the technique is being adopted and the obstacles faced by parents at each level.

RESULTS: In our study total 37 (17.2%) parents' encountered obstacles. The most frequent obstacles to the Ponseti method in our study are lack of awareness for clubfoot treatment (43.2%), patient transportation and distance to treatment centres (24.3%),poor socioeconomic status (13.5%), complications during serial casting (13.5%),and (5%) other obstacles.

CONCLUSION: Inspite of Ponseti casting technique becoming a common method to treat clubfoot worldwide. In India there are several physician & patients related factors influencing the outcome. There is lack of awareness programs in media (TV/newspaper), schools and colleges and in public meetings. In our country there is no national health programme for clubfoot deformity, so diagnosis of clubfoot deformity is frequently missed at delivery points like sub centers, PHC, CHC and District hospitals. Poor transportation in remote, hard desert area producing hurdle for weekly serial casting and regular follow up.

KEYWORDS

Club Foot, Ponseti's Technique, Indian Population.

INTRODUCTION

Clubfoot or Congenital Talipes Equino Varus (CTEV) is a common complex congenital deformity of the foot. It is a three-dimensional deformity having four components: Equinus, Varus, Adductus and Cavus[1,2]. Many cases are associated with neuromuscular diseases, chromosomal abnormalities, Mendelian and non Mendelian syndromes and in rare cases with extrinsic causes. The incidence differs in different races[3]. Idiopathic clubfoot affects 1-2children per thousand live birth and is one of the leading causes of disability worldwide. Ponseti's technique of casting, tenotomy and bracing is an acceptable method worldwide in its management[4,5]. However, in this study, only the cases with idiopathic congenital clubfoot deformity are included, occurring in otherwise normal infants.

Ponseti's Technique:

The technique is done in the followingstep[6,7,8,9]-

1. Classifying the child's deformity based on aetiopathology and treatment stage on first presentation.
2. Grading the deformity by Dimeglio's / Pirani's classification system.
3. Patient's family counselling and setting up of club foot clinics.
4. Application of casts in a weekly manner by first putting the foot in supination and then gradually abducting in sequential casts till the navicular covers the talar head completely clinically manifested as 70° of abduction, avoiding eversion or forced dorsiflexion in weeklycasts[11].
5. Tenotomy, if it is found that tendoachilles is tight ,as without tenotomy we cannot achieve 10° of dorsiflexion.
6. Bracing schedule to be followed till the age of 3 years and follow-up subsequently. Ponseti's technique is presently established only for congenital idiopathic club feet and trials are undergoing for syndromic, neglected and complicated club feet.

The Ponseti method has change the management of idiopathic club foot deformity from a typically surgical approach[12] to a primarily non operative Approach[13,14].

Establishment's or setup's where Ponseti's technique is being practised in India:- Government or Institutional setups; Non Government institutional setups; Private nursing homes and clinics.

AIMS &OBJECTIVES

1. To find out the obstacles during treatment of ctev by Ponseti.
2. Enligten the solutions for obstacles to achieve 100% acceptability for treatment.

RESULTS

Out of the 215patients treated 139 patients (65%) were from a rural background and 76 patients (35%)belonged to urban areas .

Table;1-Distribution of patients according to Area.

Area/Background	No Of Patients	Percentage (%)
Rural	139	65
Urban	76	35
Total	215	

The patients were classified as per Pirani scoring system. In our study 37 (17.2%)patients encountered obstacles in the treatment of ctev. The most frequent obstacles to the Ponseti method in India in our study was lack of awareness of treatment of ctev in the country 16 (43.3%) these patients missed follow-up and serial casting weekly, which led to improper follow up after Correction and incompatibly issues with brace application .

patient transportation and distance to treatment centres 9(24.3%), in our study patients came from rural desert area 60 patients from about 50 km,12 patients from about 100 kms,37 patients from 150 kms,22 patients from 250 kms,8 patients from 300 kms ,Patient transportation and distance to treatment centres which led to patient's not returning back till full correction .

Poor socioeconomic status 5 patients (13.5%), these parents cannot afford expenditure of treatment. and complications during serial casting.

5 patients (13.5%) which led to patient's families discontinued the treatment in between or led to complications like skin blisters, incorrect application of plaster Casts. 90% of the parents had attended weekly clinics with 67% indicating that they did not know about clubfoot and its treatment.

Table;2- Obstacles Encountered During Treatment Of Clubfoot by Ponseti method In Western Rajasthan

S.No.	Obstacles Encountered During Treatment Of Clubfoot In Western Rajasthan	No.of patients	Percentage (%)
1.	lack of awareness of treatment of ctev	16	43.3
2.	Patient transportation and distance to treatment centres	9	24.3
3.	Poor socioeconomic status	5	13.5

4.	Complication like skin blisters, incorrect application	5	13.5
5.	Other complication	2	5.4
Total		37	

Factors Influencing the Successful Management at Various Level of Healthcare:-

Patient related- Other forms of club foot management like- parents may seek non ponseti management methods, traditional medicines and other methods. These are ineffective and delay make ponseti treatment more difficult. This problem can be managed with education of family and there health care provider. There is public belief in some culture that clubfoot is caused by evil spirits , due to sins or misdeed of family or parents . The child with disability is a source of shame and is hidden by family .They do not have the benefits of an examination of newborn by trained healthcare workers . They don't have awareness of the diagnosis and the need for early treatment including misinformation that ponseti method is ineffective . These obstacles can be overcome by establishing clubfoot clinic and make ponseti management facility for every clubfoot affected feet . Engage parents to clubfoot clinic and discuss management and follow up to parents ,caregivers, and convey the message of free treatment in the society. Involve local government, panchayat, municipal corporation, schools, meetings, PHC ,CHC ,religious places, NGO to assist the very poor by facilitating transport and spread awareness about complete cure of CTEV patient.

Health institutional- Most of the government setups do not treat children with club foot deformity in a major manner. This is because clubfoot has not received importance at govt level in the centre or state , in spite of being the major presentation .This is the sad reality even under the department of Health and Family Welfare at PHC, CHC and even district hospitals where doctors and nursing staff are not aware about CTEV treatment by ponseti. There is neither any training facility to empower skills in CTEV treatment nor any national health programs for CTEV disbilty . In rajasthan where 75% rural and 60 % area is desert and less institutional delivery, awareness programs are very necessary at each level from beneficiary to health system . There is less number of orthopedic surgeon in the state and orthopaedic surgeons in these setups are busy in population control programs/Trauma or private practice rather than taking care of club foot children. Even most of the medical colleges in the govt setup do not stick to exclusive use of Ponseti's technique inspite of having speciality clinics. Ponseti's technique is used only if a thesis is given to a post-graduate or if a particular consultant is trained in this technique . "Cure" along with govt. has taken initiative in managing these patient's , specially in some states where comprehensive care in the form of training, counselling, models and materials, follow-up record sheets& braces are provided by them . But such scheme is yet limited to large cities and medical colleges.

The patient related barrier are simple to understand. Most of the Govt. set ups including Govt. Medical Colleges cater to the poor people. Poverty, illetracy and distances are the major barrier in managing a club foot child by parents. Parents prefer a one time surgery may be with inferior results rather than travelling long distances every week to get the plaster changed. Also routinely there is no provision to admit children for day-care Ponseti's technique. The need for prolonged bracing is the second barrier in the method. Insuring economic/free supply of bilateral foot dorsiflexion - Abduction brace is almost impossible.

Speciality clinics:- Most of the poor parents discontinue treatment due to lack of awareness. long term brace does not suit the parents & compliance becomes an important issue. Most of the medical colleges, even if they run a speciality clinic of club foot have their day and time fixed and so patient's with club foot won't get round the clock attention, apart from any emergency treatment if complication arises. Ponseti's clinics overcomes these problems to some extent as the parents see the outcome of others who are not following instruction, leading to recurrence of symptoms.

Non govt funded institutes:- They also treat club foot in the ideal way i.e. Ponseti's technique but the cost of treatment becomes tremendous as the consultation fee/plastering fee/plaster material cost/Anaesthetist cost/OT cost for tenotomy and post op. ward even in a day care setting are very high. They also require trained assistants to hold the foot in corrected position or apply the cast. Tenotomy even if it is a minor surgery require the complete pre-operative/Intra operative and postoperative protocol in these institutes.

So, parents think that instead of having so many plaster's and then surgery, why not go for a single one timed surgery which will not only save money but time as well.

Summary of obstacles in the practice of Ponseti's technique

1. Parents from affluent societies insist to give anaesthesia, so that child is not irritable and do not cry during manipulation or cast application. This eventually leads to more complications, oedema and poor results.
2. Orthopaedic surgeons are still not very familiar to new terminology, classification systems and Ponseti's technique.
3. The technique does not work if speciality clinic is not initiated. Patient counselling is a must.
4. Institutes which do not have full time Orthopaedic Surgeons insist one time correction rather than repeated visits of patient and orthopaedic surgeons.
5. Tenotomy is projected as a major surgery at times.
6. Avoiding tenotomy or bracing is a major cause of recurrence.
7. Poor results are also seen if a wrong selection of case is done & neglected, Complicated or syndromic clubfoot are counselled and treated like idiopathic club foot.
8. Social stigma of CTEV.

Recommendations for overcoming obstacles:-

1. Making the government aware of Ponseti's protocol and taking its help in establishing club foot clinics, where children with club foot will be treated only by trained and appointed orthopaedic surgeons .
2. Provision of post correction basic braces free of cost, where the brace is returned after use and reapplied to another child till 3 years of age.
3. Provision of well equipped operation theatre with anaesthetist so that tenotomy may be done properly with antisepsis and without pain and children with neurological, syndromic and complicated clubfoot be also treated with surgical care. Provision of a post operative ward and shelter for these children and their families.
4. Free transport of these children to and from to the pre identified clinics as to insure attendance and full treatment.
5. Making a national health programs for CTEV patients.
6. Making a training schedule for CTEV treatment and counselling to orthopaedic doctors and assistants.
7. Engage more and more public to CTEV treatment awareness programs via media TV/newspaper, posters in hospital premise, schools ,colleges, awareness programs in community meetings ,and religious places.
8. Involve more NGO for awareness, counselling of CTEV parents.
9. Make a provision to give expenditure to CTEV patients.
10. Make a future policy for CTEV affected children.
11. Arrange a clubfoot clinic in remote desert area.

DISCUSSION

In spite of Ponseti casting technique becoming a common method to treat clubfoot worldwide, in developing countries like India, there are several physician & patients factors influencing the outcome. Skill management in improving Physician and Patient's family factors should be integrated in practise to prevent neglect in treatment .A Programme about proper application of Ponseti technique for doctors and patient's family education can help .

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