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RESEARCH ARTICLE

KITE V/S PONSETTI TECHNIQUE FOR SERIAL MANPULATION AND CAST APPLICATION IN TREATING IDIOPATHIC CLUB FOOT

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Abstract

Introduction:-

"We are dealing with a condition, the cause of which is unknown, the patho-anatomy of which is uncertain, the behavior of which is unpredictable and the treatment for which remains controversial
Gartland (1964)

Most orthopaedic surgeons will agree that the initial treatment of a patient with clubfoot when presenting early in life should be conservative

We have been using Ponsetti's method of manipulation and casting with fair results with a comparatively smaller period of casting than Kite's method .

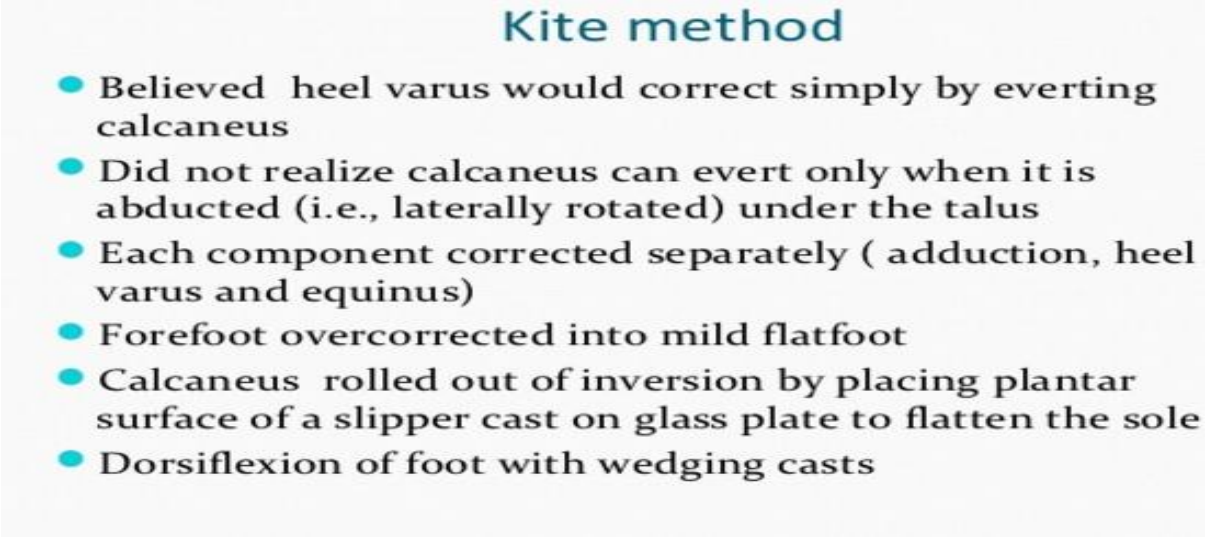
This prompted us to compare the two methods of treatment in a prospective randomised study and compare various variables like percentage of feet corrected, time and number of casts required for correction achieve.

INCLUSION CRITERIA:-

Idiopathic clubfeet < 3 months of age (5 to 90 days) attending the orthopaedic OPD of our hospital from April 2015 to December 2015 .

EXCLUSION CRITERIA:-

Older patients or those having non-idiopathic deformities were excluded from the study.
None of the patients selected for the study had undergone prior conservative or operative management.



Written informed consent from guardians
Patients randomly assigned to Ponseti group and Kite group
All the patients were assessed and followed up our senior consultant .

Statistical analysis:-

10 patients (15 feet) selected for the study
5 in the Ponseti group and 5 in the Kite group
6 males (3 in the Ponseti and 3 in the Kite group) and 4 females (2 in the Ponseti and 2 in the Kite group)
5 infants had bilateral pathology (3 in the Ponseti and 2 in the Kite group) while 5 patients had unilateral presentation.
Dimeglio's classification - Benign, moderate, severe and very severe grades
The patients underwent weekly manipulation and casting starting the day of first presentation after birth in our OPD according to the method applied (Kite or Ponsetti)
Underwent casting till they achieved correction or reached 1 year of age, whichever was earlier. Achieving no correction by 1 year was considered a failure, after which surgery was planned with the parents' consent.
The patients were followed up every month for the first year and every 3 months subsequently to assess range of motion, function and appearance of the ankle and foot.
Results were expressed as the mean and standard deviation (SD). A chi-square test and an unpaired t-test were applied for statistical analysis.
The statistical difference was considered to be significant when $p < 0.05$ and highly significant when $p < 0.001$.

Results:-

After an average follow-up period of 8months, the results were as tabulated .
The rate of correction was found to be significantly higher with Ponseti's technique

With Ponseti's group, correction could be achieved in comparatively fewer days with a smaller number of casts.

The statistical difference was found to be highly significant both in terms of time taken as well as the number of casts required for correction Ponseti's method also corrected a significantly higher number of very severe clubfeet than Kite's method , in a smaller period of time .
However, age and sex had no significant relationship to the outcome and relapse in either group .

At final follow-up, the average range of motion at the ankle joint in the Ponseti group was 7.11° (dorsi-flexion) to 12.17° (plantar-flexion).
The corresponding values in Kite's group were 6.13° (dorsi-flexion) to 10.16° (plantar-flexion).

Discussion:-

The aim of manipulation, therefore, should be to stretch the medial capsule and ligaments so as to draw the navicular laterally.

Placing counter-pressure at the lateral aspect of the talar head rather than at the calcaneo-cuboid joint obviously can do this most effectively

In our opinion, this was the cardinal mistake in Kite's method, which leads to a delayed or low correction rate.

Conclusion:-

Even though we have corrected several clubfeet with Kite's method, we find Ponseti's method to be far superior in correcting all deformities in a shorter period of time, thereby reducing the requirement of surgical intervention.

Encouraged with the results of this short-term study, we will not hesitate to offer Ponseti's method of management as the first line of conservative treatment to the patients attending our OPD.