How does instrumented gait analysis help decision making in the Indian setting for Cerebral palsy treatment? - Experience from a tertiary referral centre

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**Background:**
- Instrumented Gait Analysis – increasingly being used for assessment in Cerebral Palsy

**ADVANTAGES:**
- Objective
- Dynamic Assessment
- Reproducible
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Objectives:
1. Is Instrumented Gait Analysis necessary for experienced clinicians in India to assist their decision making?
2. What are the pathologies where clinician gets additional inputs from Gait Analysis?

Materials & Methods

Study Design: Retrospective Case series

Study Period: June 2018 to February 2020

Place of Study: State-of-the-art Gait Facility at AIIMS, New Delhi with 8 force plates, 12 Infra-Red cameras and 2 video cameras (BTS, Italy). Helen Hayes protocol was employed in all patients.

Figure 1: Demonstration of marker placement as per Helen Hayes Protocol
Results

Demographics:
Mean Age- 12.2 years (Range 5 to 24 years)
Male: Female = 37 : 17 (Ratio= 2.18: 1)

✓ Six patients had their surgery deferred after Gait Analysis reports (all of them had Crouch gait and were planned for Hamstring release- on Gait analysis, patients found to have nearly full extension during stance)- managed with Orthotics

✓ Eight patients – Minimalised surgery after Gait Analysis report – Five Gastrocnemius release avoided for Apparent equinus, three Hamstring release avoided

✓ Six patients – Functional Psoas tightness demonstrated on Gait Analysis which was not evident on clinical examination (Thomas test) – Double Bubble in Pelvic Tilt (See Figure 2)
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CONCLUSION:
✓ Gait Analysis is quite useful whenever there is a disagreement between experienced clinicians
✓ Minimizes errors by avoiding excessive release (especially Gastrocnemius release)
✓ Additional findings are revealed (ex: functional Psoas tightness) which cannot be picked up on Static examination

References