THE CALCANEOSTOP PROCEDURE, when it is indicated and how does it work?

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SAVE THE DATE

WHAT'S NEW IN FOOT AND ANKLE SURGERY
International Advanced Course in Foot and Ankle Surgery

ROMA, 6-7 MAY

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ASK TO ANTHONY
CALCANEO-STOP

When?

How does it work?
FLEXIBLE FLAT FOOT

IS IT A NORMAL CONDITION FOR CHILDREN?
.. IT COULD BE!

2 Y.O.:
NEARLY 100% FEET ARE FLAT

10 Y.O.:
4% ARE STILL FLAT!!

Pediatric foot is not just a smaller version of the adult one (Sullivan)
Which foot is the candidate for surgery?

FLEXIBLE, REDUCIBLE...
...symptomatic (4%) 

most of the time aspecyfic symptoms!! 

not painful!!
Helfet (1956): no evidence of treatment efficacy, insoles could be even dangerous leading to dependency.

The choice is no more between conservative and surgerycal treatment, whether to treat or not!!

Surgical procedure classification

- **SOFT TISSUE**
  - BONE
    - (Osteotomy & Arthrodesis)
  - ARTHROEREISIS
    - (Endo sinus tarsi technique or eso sinus tarsi technique)
ARTHROEREISIS

ENDO SINUS Tarsi

ESO SINUS Tarsi OR CALCANEOSTOP PROCEDURE
TIMING

- no before than 8 y.o. to avoid hyper-correction (Viladot A.)
- 8-12 y.o. (ideal range) (Carranza A.)
- no older then 14 (Roth S.)


How does it work?

- Calcaneo stop is a minimal invasive procedure that acts at the **CORA (D. Paley)** of the deformity in a **constraint structure (B. Nigg)**.

- Biomechanical stop + Neuroproprioception

**Paley D.**  Principle of deformity correction. Berlin: Springer-Verlag **2002**

**Nigg BM.**  Biomechanics of the muscoloskeletal system. 2nd Edition. New York: John Wiley and Sons, **1994**

3 DIFFERENT PHILOSOPHIES

CANCELLOUS SCREW

CASTAMAN’S SCREW

CNF IMPLANT
CALCANEO-STOP VS ENDORTHESIS
Riabsorbable???
Male, 12 y.o.
Contraindications

- Neurological feet
- pathological flexible feet (S. Marfan, S. di Down)
- tarsal coalition
FEMALE, 16 Y.O.

MARFAN SYNDROME
CALCANEAL STOP 4 YEARS BEFORE

IN CARICO
REVISION WITH A TN FUSION
MALE, 12 Y.O.

UNCOMPLETE TARSAL COALITION
REVISION WITH A TN FUSION
DO WE TOLLERATE UNDERCORRECTION?

- CORA deformity distal to TALO-NAVICULAR joint
- Residual deformity rather than accessory procedure??
- MIller Hoke + calcaneo stop??
Adults???

- biomechanic more important than neuroproprioception
- removal = deformity recurrence = failure
- short followup satisfaction or hardware removal
- 39% Needleman removal rate (for endorthesis)

**Needleman RL.** Current topic review: subtalar arthrodesis for correction of flexible flat foot. Foot Ankle Int 2005: 26:336-46
THANKS