THOM’S JOINT JACK

D. THOMAS
D. ZANIN
In 1981, digital stiffness costed as much as Colles’ fracture management (medical treatment + compensation)

J.Y. De la Caffiniere – M. Mansat

SOFCOT 55th meeting

Hand therapy management
Extension mobilisation
Splinting
Modality of choice
Glasgow
If the deformity is long standing, greater than 30° and no extension end-range give is felt, elastic traction splints are relatively worthless. Inelastic traction mobilization splints in the form of serial casts or splints that allow incremental adjustments of inelastic traction are the most efficient method to improve PIP flexion deformities.
SERIAL STATIC LOW FORCE / LONG APPLICATION № 1

EVEN PRESSURE DISTRIBUTION
COMFORT, OEDEMA CONTROL
PATIENT ADHERENCE, NO CHOICE

« INEVITABILITY OF GRADUALNESS
CELLULAR GROWTH » Paul BRAND
STATIC PROGRESSIVE: ADJUSTABLE FORCE AND WEAR TIME N°2

ADJUSTMENT BY TURNBUCKLE, GUITAR KEY, VELCRO, METAL BENDING, BELT BUCKLE etc…
THE IDEAL STATIC PROGRESSIVE SPLINT SHOULD:

ADAPT TO SEGMENT DISPLACEMENT ➔ PIVOTING TROUGH/GUTTER

SPREAD PRESSURE EVENLY ➔ LARGE COMFORMABLE CUFF

BE: USERS FRIENDLY, DISCRETE, EASILY ADJUSTABLE
Mobilisation by short lever arms = Joint rotation and glide

Ideally: counter pressure area on either side of fulcrum
Double lever of second order
PHYSIOLOGICAL JOINT MOBILISATION: CRUCIAL IMPORTANCE OF PRESSURE AND COUNTER PRESSURE PLACEMENT

Mobilisation by short lever arms = Joint rotation and glide

Ideally: counter pressure area on either side of fulcrum
Double lever of second order
Mobilisation by long lever arms away from fulcrum (joint axis) = joint rotation, no glide + uncomfortable counter pressure
Single lever of second order
SMALL, NON SWIVELING PRESSURE / COUNTER PRESSURE TROUGH / CUFFS CANNOT SPREAD PRESSURE EVENLY

Hyperpressure

Hypo

Hyperpressure

Hyperpressure
PIP PROGRESSIVE STATIC EXTENSION SPLINTS

JOINT JACK
Adjustment by screw

BUNNELL’s SAFETY PIN
Adjustment by buckle

NO SWIVELING TROUGH
Small contact area
UNEVEN PRESSURE DISTRIBUTION
THOM's JOINT JACK

Swiveling n, large pressure/counter pressure areas
Precise adjustment by screw

1.5 mm. welding rod
Leather
Screw + washer + butterfly bolt
Thermo plastic
Pliers
Punch
Scissors
Shears
Hot water pan
DUPUYTREN’s contracture

The TEC treatment for severe Dupuytren’s contracture of the fingers  
2mm/jour = extension in 2-3 weeks.

“Early recurrence of contracture”  
C. Dumontier

DIGIT WIDGET

Preliminary Soft-Tissue Distraction with the Digit Widget™ in the Management of Advanced Dupuytren Contracture at the Proximal Interphalangeal Joint  
Solomon Azouz, Atanu Biswas, and Anthony Smith, 2017 USA
DISTRACTION CORRECTION OF CHRONIC FLEXION CONTRACTURES OF PIP JOINT

1 mm distraction per day. 34 days

Distraction Correction of Chronic Flexion Contractures of PIP Joint: Comparison Between Two Distraction Rates Shirzad Houshian, MD, Chandrasekar Chikkamuniyappa, MS Department of Orthopaedics, Upper Limb Unit, University Hospital Lewisham, London, UK.
THOM’s joint jack. Extension + distraction
CONCLUSION
THE IDEAL ORTHESIS

SHOULD ADAPT TO JOINT AXIS DISPLACEMENT
SPREAD PRESSURE EVENLY
BE : USERS FRIENDLY
EASILY ADJUSTABLE
EASY TO MAKE
ECONOMICAL
SIMPLICITY IS THE SUPREME SOPHISTICATION
LEONARDO DA VINCI

CREATING SOMETHING SIMPLE IS SOMETIMES MUCH MORE COMPLICATED THAN CONCEIVING SOMETHING COMPLICATED
Mikhaïl KALACHNIKOV

SIMPLER IS BETTER