

Digital Flexor Tendon Repair for Tension-Relieving and Early Motion in Zones I and II Using a Dynamic Anchor Pull-Out Loop

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Dynamic Anchoring Pull-Out

Purpose:

To present our Protocol with an Ancillary Removable Suture Primary Repair Zones I - II FDP ± FDS - Tidy Wounds



The ingoing leg of the pull-out suture passes under pulleys A2 and A4, anchoring at the proximal tendon stump. The outgoing leg will run parallel to the tendon, under the pulleys and out again, through the nail plate.



Dynamic Anchoring Pull-Out Loop

Patients & Methods

2000-2008

8 Women - Median Age (42) Non-Dominant Hand (6)
12 Men - Median Age (38) Dominant Hand (8)

Affected Digits Follow-up: Minimum 6 Months

Index	4	1 Patient Lost to Follow-up
Middle	4	
Ring	5	2 Patients Not Evaluated at 6 mo
Little	11	
Total	24	



The tendon stumps are sutured using Kessler's modified technique: 4/0 nylon core-sitch, + and 6/0 nylon running suture.

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Biomechanical principles for suture tension relieving
The pull out needle transects the nail-plate, then goes back into the same orifice to exit distally in the repaired area.



Dynamic Anchoring Pull-Out Loop



Biomechanical principles for suture tension relieving: When flexed under tension, the finger flexes "bowstringing" the slackened tendon segment



Dynamic Anchoring Pull-Out Loop

It allows early motion protecting the more delicate S/D suture, both in active flexion and extension. A dorsal plaster slab keeps the wrist in a 20-30° flexion and the finger joints are free to move.



Dynamic tenodesis: Wrist & fingers extension flexion is helpful



Acute phase:

1) Pre Tendon repair



Pull-out loops on index middle ring fingers



2) Intra op. Finger positions First week dressing change

The post-op protocol comprises 6 weeks until the pull-out loop is removed



Final results
Index + Middle + Ring at F2
Flex. Profundá at 5 mo.



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Case nº 3: Intraop and early motion at 2nd week



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Results

Pulp Flexion to Palmar Skin = Minimum 2 cm
Lacks Extension 15/20° DP/DIP
15 Pts = no pain, ADL & work resumed

Well-tolerated post-op. – No infection;
No nail plate deformity; no suture ruptured

Complications

1 PIP Contracture > 30°
1 Failed tenolysis. Declined arthrodesis;
1 Inadvertent early loop removal;

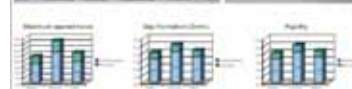
Conclusion

Anchoring Pull-out Loop = Encouraging Results of Preliminary Series

Invited Multicentric Studies

Estudo biomecânico comparativo da resistência à tração entre técnicas de suturas dos tendões flexores da mão*
A comparative biomechanical study of traction resistance among hand flexor tendon suturing techniques*

Luiz Antonio Buendia, Rames Mattar Junior, Heitor J. R. Ulson
Rev. Bras. Ortop. – Vol. 40, nº 7 – Julho 2005



Green is the colour of medicine and of hope
Let's keep our planet green!



In Brazil we are doing our part!
This picture is dedicated to Alfred Swanson MD, a druidic prophet