Screw Fixation in Distal Interphalangeal Joint Arthrodesis

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• Painful and instable distal interphalangeal joints in patients with primary or posttraumatic osteoarthrosis or with RA are usually treated performing arthrodesis.
Biological arthroplasty or arthroprosthesis were and are proposed to maintain DIP motion but Arthrodesis is well tolerated and its results are more reproducible and reliable.
• Kirschner wires were and are the most used stabilization system performing DIP arthrodesis
• Complication rate—as infections, painful nonunion, hardware migration—are about 20%
Furthermore with Kirschner wires a nuisance for every day life is present.
• Compression screws actually used for DIP arthrodesis have changed surgical view.
• We want check if DIP arthrodesis performed by using Acutrak Fusion compression screw is a reproducible reliable and patients-friendly surgical technique
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16.0mm  18.0mm  20.0mm

2.5mm  2.5mm  2.5mm
Methods

• From January 2007 to December 2011 I performed 34 DIP arthrodesis in 23 patients using Acutrak Fusion Compression Screw (standard surgical technique)
• 19 women -18 posttraumatic osteoarthrosis ;1 SLE (this one with a story of arthrodesis failure performed with K wires

• One of 19 had 4 DIP operated in the same hand;one 3 and six 2

• 4 men –all posttraumatic –one operated before with Kwire without consolidation

• Age from 40 to 66
• All patients don’t use splint after surgical treatment and can immediately utilize their hands
Results

• All patients checked at two ws, one month, two months and six months. X-ray at two months for all patients
• FU from 1 year to 5
• No infections
• No hardware or skin problems
• All cases consolidated at two months
• In two cases screw is too volarly set in P2 but without complication

• In all cases good aesthetic result except SLE(5° of axial deviation)

• All patients consider friendly this surgical technique; some of these ask for same operation for DIP to treat of for DIP before treated by cheiloarthroplasty
Conclusions

- You need of exact technique because the system is very rigid
One month after surgery

- Acutrak Fusion is not able to modulate DIP flexion but this is not a problem for patients
- The screw used is 2.5 mm large and from 14 to 24 long: it is useful for little ray DIP too
Two months after surgery
• In a case the screw has resolved the problem of non consolidation of DIP arthrodesis performed using K wires.

• In this case the screw in percutaneous technique
If arthroplasty of PIP joint may be required subsequently the screw is positioned more distal in P2. General contraindications to use screws...