Volar percutaneous scaphoid osteosynthesis with cannulated screw and arthroscopic assistance

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The aim of treatment is to achieve accurate articular apposition of the two fragments, taking care that they are correctly aligned and that no malrotation exists.

Tim Herbert
Technique

- Local-regional anaesthesia
- Tourniquet
- Outpatient surgery
- Short distal palmar approach
Technique
First reduction by wrist traction and arthroscopic assistance or control
Technique

Temporary Kirshner wire to stabilize the fracture with fluoroscopic control
Technique

Arthroscopic control, radio and medio carpal
(sometimes reduction with a small 3-5mm chisel)
Technique
Technique
Technique
Technique

Drilling, taping and inserting screw.
Technique

Placing pin in retrograde position
Technique

Drilling with a double size drill: proximal and distal
Technique
Tapping: proximal then distal
Technique

Absorbable screw
one size!
Technique
Absorbable screw
Technique

Arthroscopic midcarpal control for the reduction, and particularly the right position of the screw in radio carpal joint.
Technique

Arthroscopic midcarpal control for the reduction
Technique

Right position of the screw in radio carpal joint
Technique

Postoperative Management

- Joint motion started as soon as possible
- Volar splint between exercises +/-
- Follow-up X-rays at 3, 6 and 12 weeks
CLINICAL CASE
Material
38 patients
(22 simple percutaneous osteosynthesis without any reduction, 8 with absorbable screw)

- 11 women 27 men
- 13 left – 25 right : 31 dominant wrists
- 19 manual workers – 19 sedentary occupation
Material
38 patients

- Mean age at surgery: 31.5 y.o.
- Mean delay before surgery: 14 days
- Mean follow-up: 24 months (4-50)
- 4 absorbables screws

2 years of follow-up
Material
38 patients

- 38 waist fractures
- No proximal pole fracture
CLINICAL CASE
Clinical case
CLINICAL CASE
Clinical case
CLINICAL CASE
Clinical case

3 months of follow-up
Results union

Mean time to union : 50 days (45-72d)

Range of motion

- Increase in mean flexion : 46° ➔ 69°
- Increase in mean extension : 54° ➔ 71°

Grip strength

- 52% ➔ 96% of controlateral wrist
Clinical case
Clinical case
Clinical case
Complications

- Südeck's dystrophy : 0
- Nonunion : 0
- 3 screws removal
Results
Mayo wrist score

Excellent  30
Good       8
Fair       0
Poor       0

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38
Subjective results

- Satisfied without reservations: 35 patients
- Satisfied with some reservations: 3 patients
- Not satisfied: 0 patients
New absorbable screw
Conclusion

100 % union in 7 weeks
100 % satisfied patients
100 % excellent or good results

Provided that the operation has been carried out fast and correctly, complications are few.

The use of cannulated screw with arthroscopic assistance and a short distal approach give good results and obtain union in short time.

Absorbable screw avoid the screw removal