

Radial Annular Ligament Reconstruction with ArthroFlex®

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CASE STUDY

The stability of the elbow is provided through osteoarticular architecture, the capsule, ligamentous parts and neuromuscular factors.¹ Regardless of this stability, dislocation of the elbow is common, especially among adolescence and young adults.² However, isolated dislocation of the radial head (RHD) in adults is rare.³ If neglected, this causes restriction of forearm supination and pronation, secondary degenerative arthritis of the elbow and distal radioulnar joints.⁴ ArthroFlex, a decellularized dermal matrix implant, has demonstrated ability to provide soft tissue support and coverage of soft tissue repair⁵⁻⁸ and shows promising potential for this type of case.

The following describes the use of ArthroFlex to treat a challenging dislocation of the radial head.

Patient

- 26-year-old female
- History of falling on an outstretched hand

Diagnosis

- Conventional x-rays (AP and L) and TAC have shown the dislocation of radius (**Figure 1**)
- No major neurovascular damage was noted
- Presence of pulse positive
- The elbow remained unstable after manual reduction (**Figures 2, 3**)

Treatment

- Surgery was performed for reduction of the luxation with reconstruction of the annular ligament with ArthroFlex.
- An optimal site in the ulna was selected, and a tunnel was drilled. A strip of ArthroFlex was passed through it and wrapped around the radial collar for reduction of radial head. (**Figures 4, 5**)

- The loaded suture anchor and its attached suture were placed into the hole in the bone for suturing the ArthroFlex strip. The two ends were fixed to the bone with a suture anchor. The stumps of the annular ligament were sutured over the strip of ArthroFlex. (**Figure 6**)

Post Surgical and Follow-Up

- The patient was immobilized in hinged splint at 70° to 90° flexion and rotation of neutral forearm for five weeks.
- Assisted exercises were performed after removal of the splint. Shoulder abduction was avoided to reduce elbow stress when the patient was treated with active flexion.

Outcome

- The use of ArthroFlex for radial annular ligament reconstruction was successful.

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Figure 1.
Radiograph of dislocated radial head.

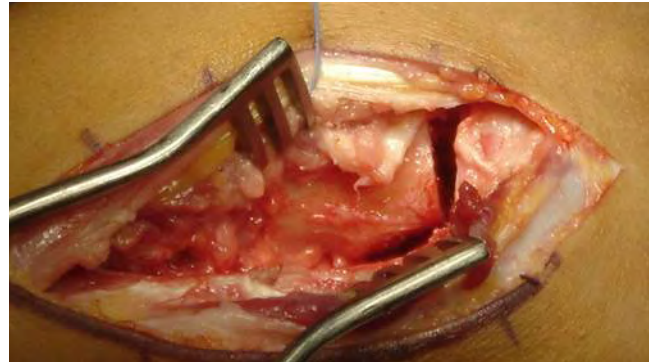


Figure 2.
Image of torn annular ligament.



Figure 3.
Preoperative image of the elbow joint.



Figure 4.
ArthroFlex being inserted into elbow joint.

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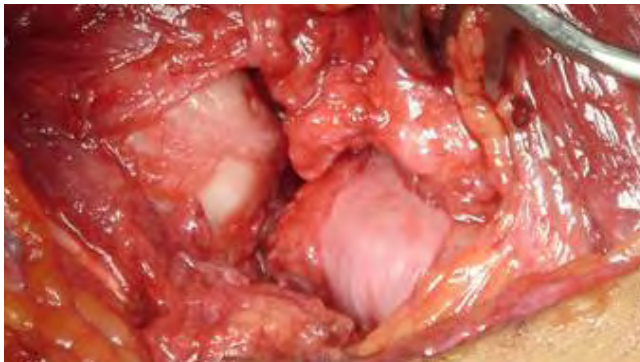


Figure 5.
ArthroFlex wrapped around radial collar.

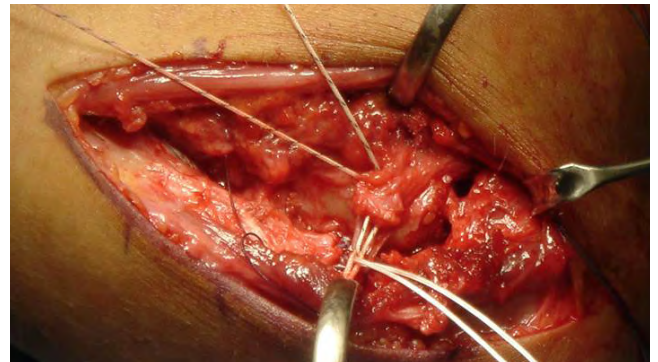


Figure 6.
The torn annular ligament was sutured over ArthroFlex.



Figures 7, 8.
Successful treatment of dislocated radial head using ArthroFlex at 6 months post-operative.

References

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