ARTHROSCOPIC SUPRAPECTORAL BICEPS TENODESIS USING AN ONLAY TECHNIQUE

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Introduction

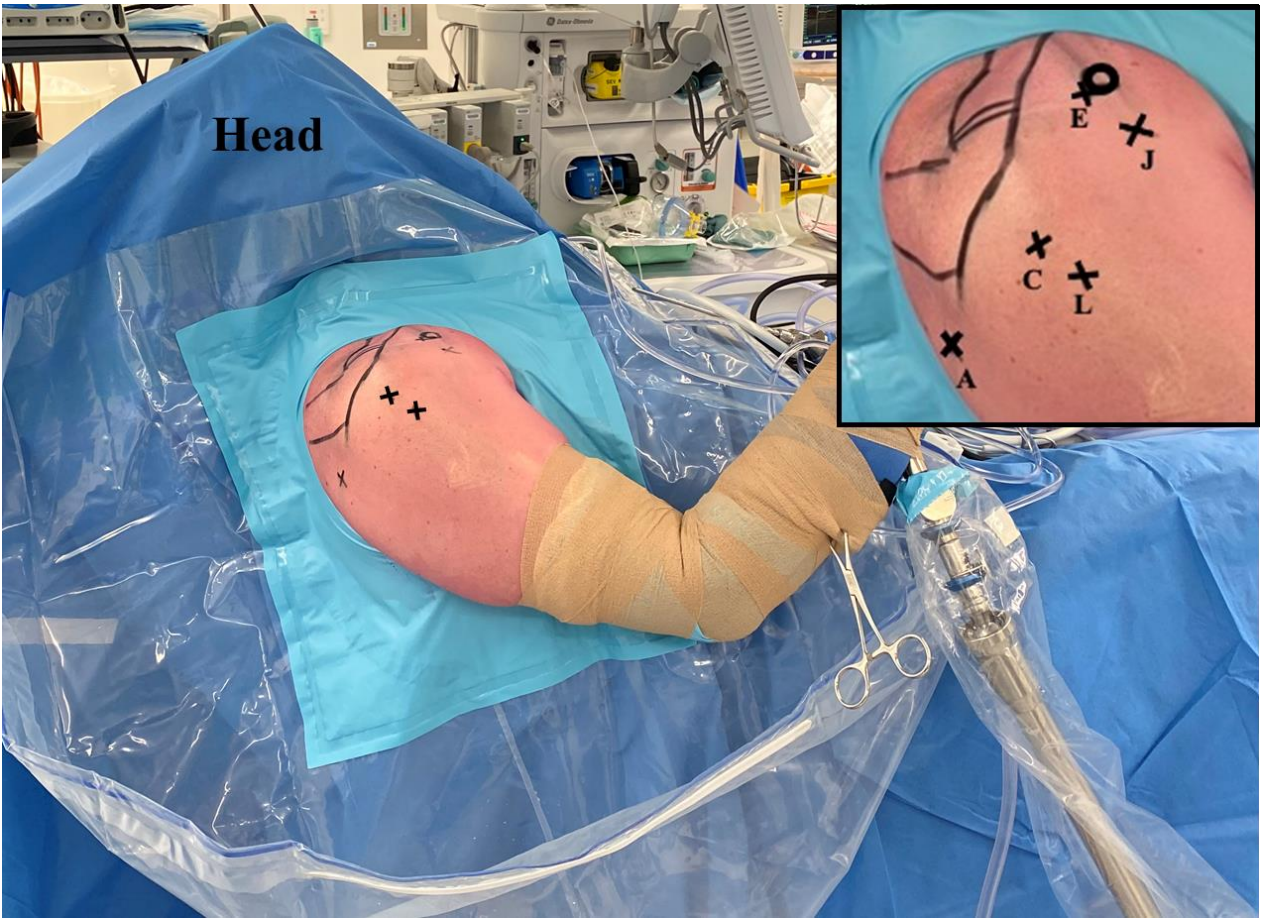
Tenodesis of the long head of biceps is a common shoulder surgical procedure.

It can be performed either arthroscopically or open and within the glenohumeral joint, within the bicipital groove, or below the pectoralis major tendon insertion.

We describe an all-arthroscopic onlay technique for biceps tendon fixation at an extra-articular position within the bicipital groove, above the pectoralis major insertion.

The technique uses standard arthroscopic equipment and a single knotless suture anchor.

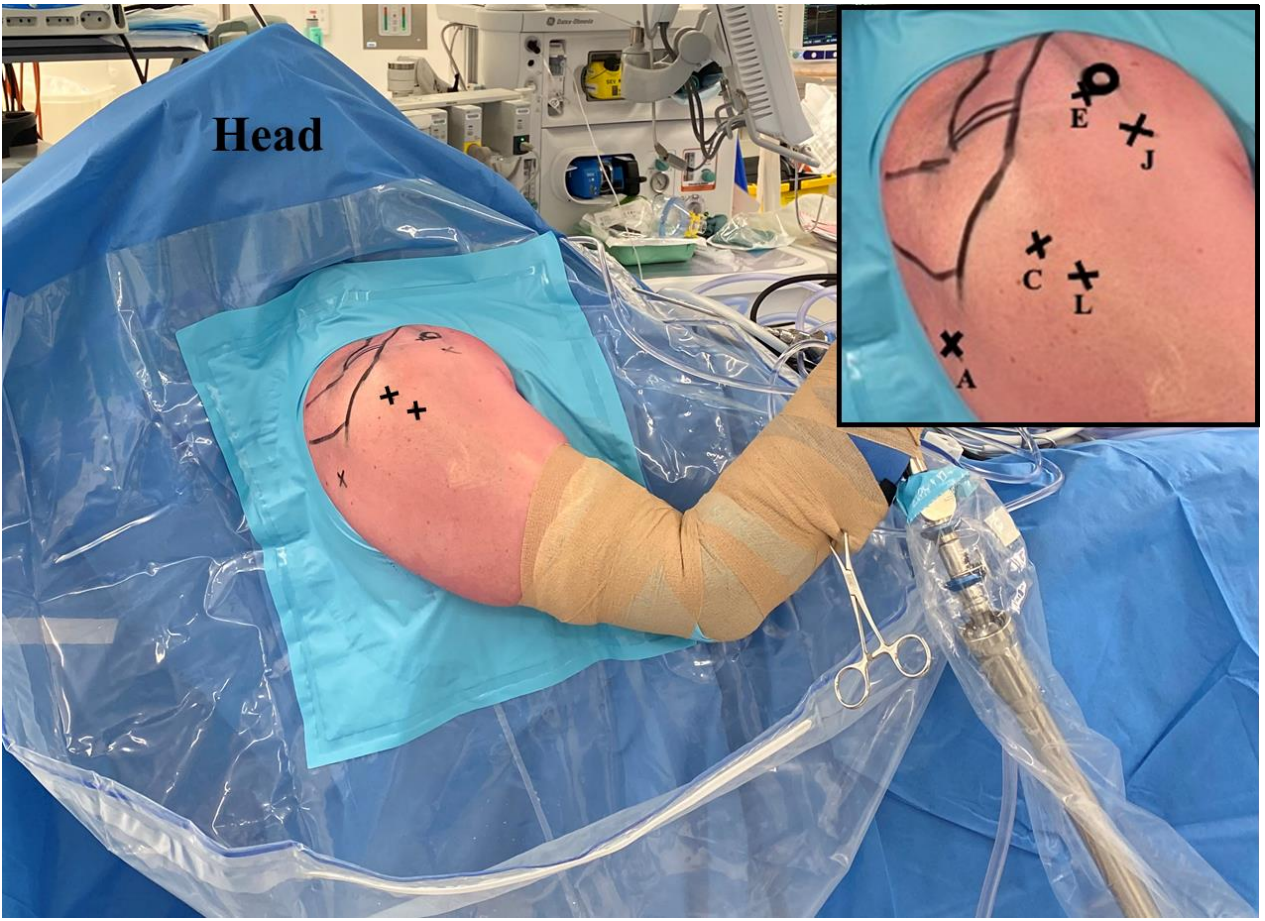
Surgical Technique



General Anesthesia

T-MAX table and Spider at 20 degrees forward flexion and in longitudinal traction

Surgical Technique



A - Standard viewing portal

C - Working portal for subacromial decompression and viewing portal for long head biceps tenodesis

J - Working portal to identify and prepare the bicipital groove and to pass the anchor.

L - Working portal to pass the suture and create the loop.

Surgical Technique (Steps)

1. Perform the diagnostic arthroscopy to identify the concomitant lesions
2. Visualize the biceps tendon from C portal
3. Establish the biceps working J portal
4. Identify and expose the long head of biceps in the bicipital groove
5. Establish the working L portal for placement of the luggage loop
6. Use the fiberlink suture to make the luggage loop configuration around the tendon using KingFisher and bird-beak penetrator
7. Prepare the fixation site and make a pilot punch
8. Fix the fiberlink suture to the bone using the SwiveLock suture anchor
9. Release the tendon at its proximal origin, and resect the tendon stump

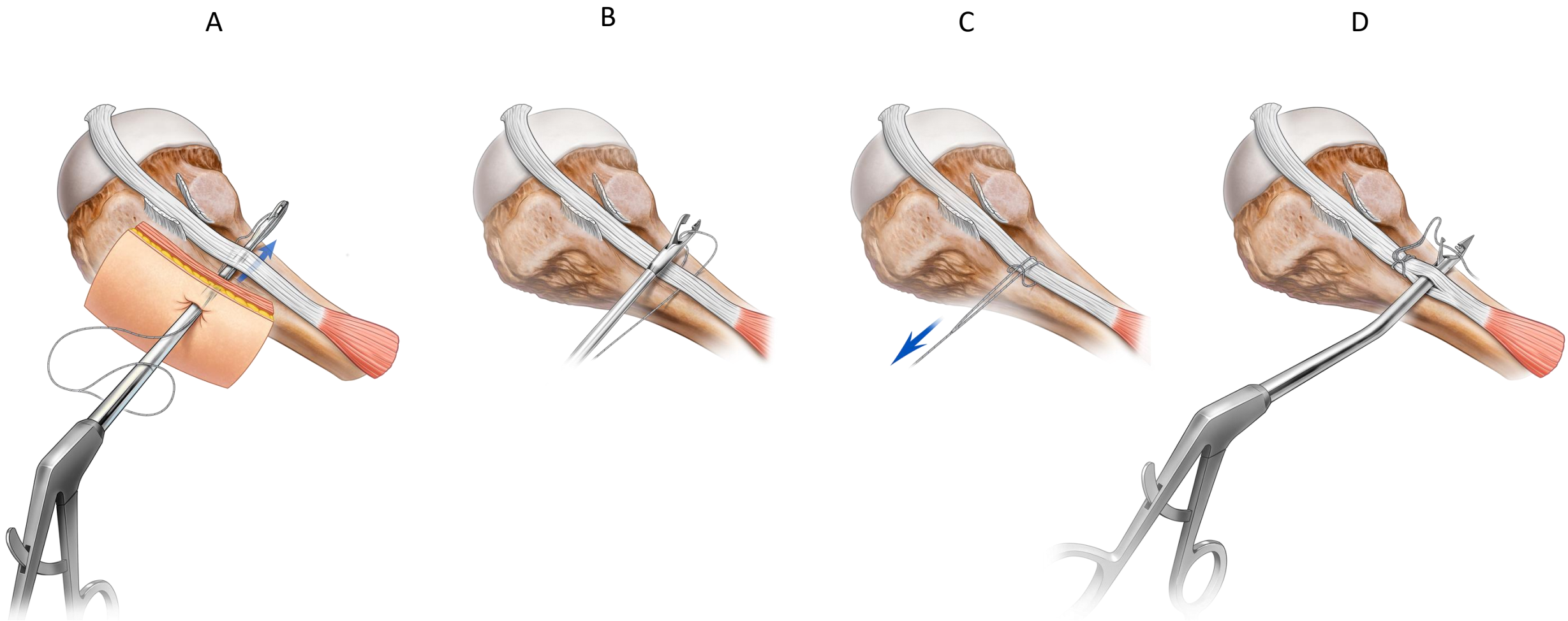
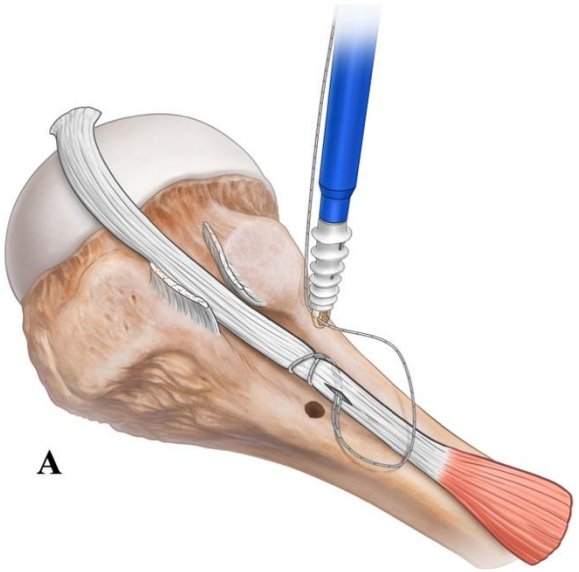
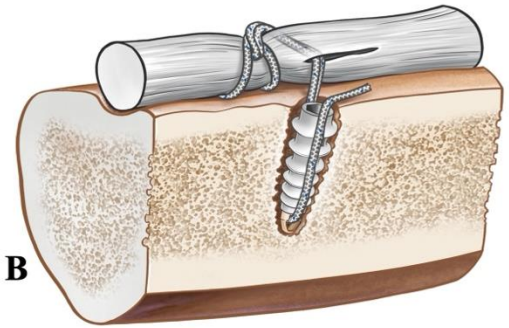
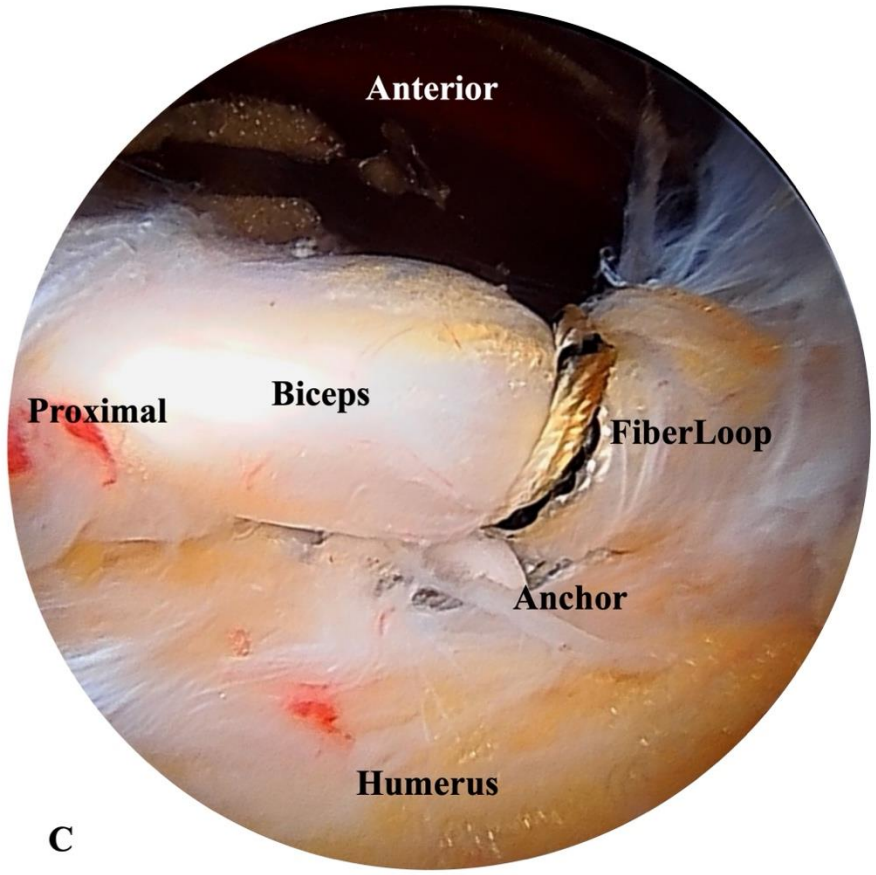


Fig: The patient is positioned in the beach-chair position with the Tmax table and spider at 20 forward flexion and in longitudinal traction. The patient's right shoulder is shown. (A) A Kingfisher loaded with 1.7-mm loop suture tape, introduced through the "L" working portal, is passed under the biceps tendon. (B) Working from the "L" portal, the grasper is then passed forward over the biceps tendon to retrieve the tail end of the loop suture tape out of the shoulder, while (C) cinching the loop down to the tendon. (D) A bird-beak penetrator, introduced through the "L" portal, retrieves the suture tape tail through the penetrated tendon.

Surgical Technique







(A) The tail end of the suture tape is loaded into the anchor. A pilot hole is created with a bone punch adjacent to the hitch in the biceps tendon. (B) A knotless suture anchor is inserted into bone. (C) Arthroscopic view of the final construct looking from posterior to anterior.

Discussion

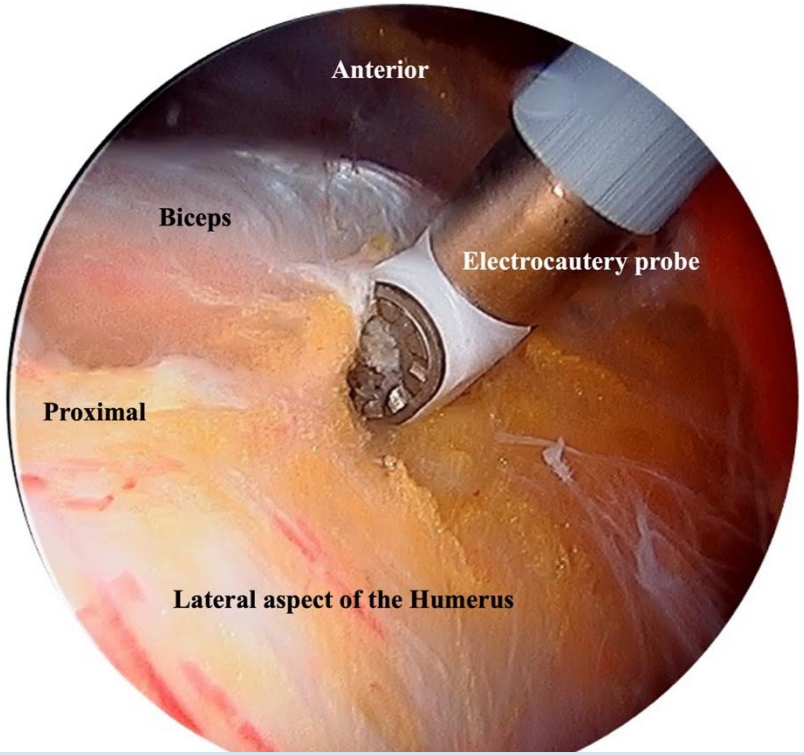
Advantages

- Relatively safe and reproducible onlay technique
- Facilitates identification of intra-articular and bicipital groove lesions
- Exteriorization of the tendon is not required, thereby reducing the risk of infection
- Facilitates maintenance of correct length-tension relationship of the tendon
- Reduces risk of fracture compared with some interference techniques
- Knotless technique ensures that knot-related complications to soft tissues are avoided
- Fast technique once mastered

Disadvantages

- Learning curve for beginners
- Potential fixation failure because it is heavily reliant on anchors until fibrous healing
- Possibility of suture pull-out
- Cost
- Six weeks in sling

Discussion



View is from a "C" portal lateral to the acromion and 1 cm posterior to the anterior margin of the acromion. The tip of the electrocautery probe, introduced through a "J" portal over the midportion of the bicipital groove, is placed in contact with the bone of the lateral aspect of the proximal humerus and then swept forward, watching for the wave effect to identify the bicipital groove.

Pearls:

- ✓ Use the wave test to identify the biceps tendon in the bicipital groove.
- ✓ Forward flexion of the arm will often improve visualization of the operative site.
- ✓ Place the L working portal slightly more posterior than the C portal used for arthroscopic visualization.

Pitfalls:

- ✓ Locating the biceps tendon in the bicipital groove can be difficult.
- ✓ Bleeding can often occur when the fascia is opened over the bicipital groove.
- ✓ Must remember to release the biceps tendon from its labral insertion.
- ✓ Avoid excessive stump resection because it may cause suture pull-out.

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Collaborate with QUASR

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