

EDITORIAL

Long Head of Biceps: From Nuisance to Ally

A. Ali Narvani, FRCS (T&O)¹; Mohamed A. Imam, FRCS (T&O)¹¹ Rowley Bristow Unit, Ashford & St Peter's Hospital NHS Trust, Surrey, UK, Fortius Clinic, London, UK

For decades, the long head of the biceps tendon (LHB) has been something of an enigma—viewed by some as a vestigial structure to be sacrificed, by others as a source of persistent pathology demanding intervention. The “biceps killers” have long championed tenotomy, while those of us disinclined to accept the cosmetic “Popeye” deformity—and perhaps with a little encouragement from industry—have argued for tenodesis.¹

Yet to see the LHB only through the lens of “cut” or “fix” is to underestimate its true potential. In recent years, the tendon has been reimagined not merely as a structure of pathology, but as a structure of possibility. Increasingly, surgeons are recognising that the LHB can be harnessed as a dynamic and biological tool in the management of some of our most challenging shoulder conditions.

Today, its applications extend beyond the binary of tenotomy versus tenodesis, into three particularly exciting domains:

- Dynamic Anterior Stabilisation (DAS) for glenohumeral instability
- Biological Superior Capsular Reconstruction (SCR) for irreparable rotator cuff tears
- Rotator cuff repair with LHB augmentation

Dynamic Anterior Stabilisation

When Collin and Lädermann² first described using the LHB as a dynamic sling for anterior instability, it was a spark that ignited a new frontier. Anchoring the tendon to the anterior glenoid through subacromiophyseal split transforms it from a passive structure into an active stabiliser, providing a biomechanical sling at the precise point of instability [Figure 1].

Since then, a body of biomechanical and clinical evidence has consolidated its promise, with meta-analyses confirming improved outcomes without restricting motion.³ Perhaps its most compelling indication is in patients with subcritical bone loss and compromised soft tissue—patients for whom traditional procedures fall short.⁴ In this context, the LHB is no longer a bystander; it becomes a partner in stability.

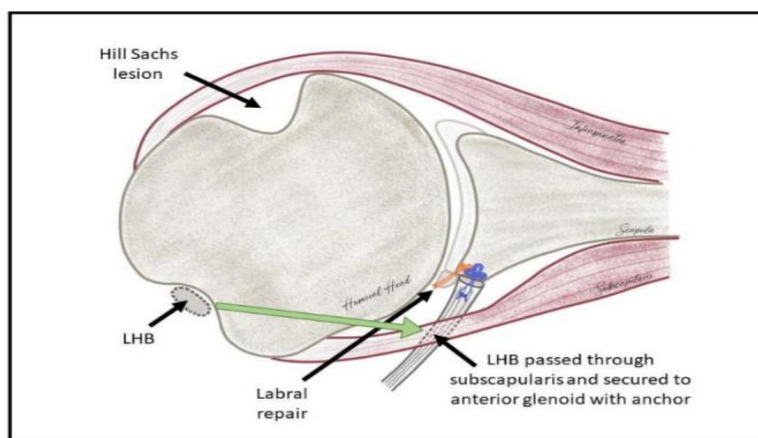


Figure 1. Dynamic Anterior Stabilization with LHB (taken from ABJS)

Corresponding Author: A. Ali Narvani, Rowley Bristow Unit, Ashford & St Peter's Hospital NHS Trust, Surrey, UK, Fortius Clinic, London, UK

Email: alinarvani@shoulder-elbowsurgery.com



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Biological Superior Capsular Reconstruction

Superior capsular reconstruction (SCR) was a landmark innovation when Mihata et al. introduced fascia lata autografts to restore superior stability. But donor-site morbidity proved a price not all were willing to pay. Hirahara and Burkhart later popularised acellular dermal matrix (ADM) grafts,⁵ but high cost and inconsistent healing limited their widespread acceptance.

Here again, the LHB has stepped forward. Used as an autologous graft, retaining its glenoid attachment, it offers biological advantages and avoids additional donor-site morbidity [Figure 2]. Early clinical reports are promising,⁶ and with its intrinsic vascularity, the LHB may represent the “living graft” that SCR has always aspired to deliver.

Rotator Cuff Augmentation

Despite growing interest in techniques involving rotator

cuff repair with extracellular matrix patch augmentation, augmentation using the LHB is an alternative that is gaining popularity. The advantages are clear: the LHB is autologous, biologically familiar, and often retains some vascularity, as in most techniques its glenoid portion remains attached. It is also markedly more cost-effective compared with ECM patches.

The LHB may be utilised in two principal ways [Figure 3]. Firstly, it may be used as a biological SCR, with the repaired cuff placed over the tendon. Additionally, in those patients where a complete repair is not achievable, the rotator cuff may be repaired directly to the LHB when it cannot be mobilised back to the tuberosity. In this manner, the LHB can serve as an augmentation scaffold for both supraspinatus and subscapularis repairs, offering a versatile biological solution in difficult cases.

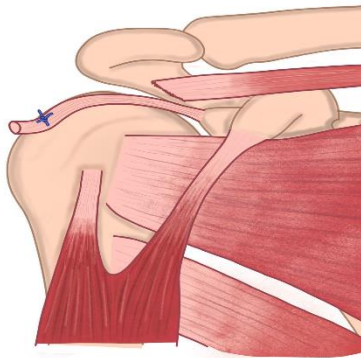


Figure 2. Biological SCR using LHB (courtesy of Richard Dimock)

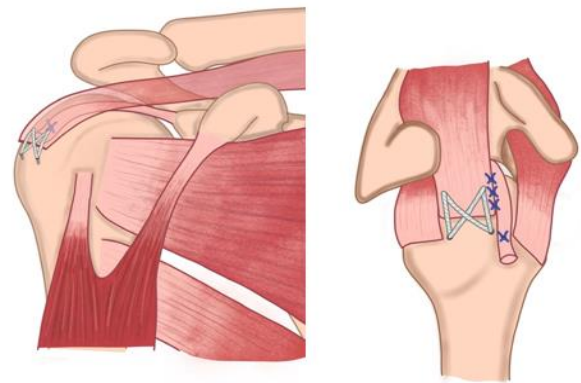


Figure 3. LHB in different augmentation modes (courtesy of Richard Dimock)

Conclusion

The story of the long head of the biceps tendon is undergoing a renaissance. Once dismissed as a nuisance, it is now emerging as a versatile ally—dynamic stabiliser, biological scaffold, and autologous graft. Its future will depend on careful clinical validation, but the trajectory is clear: the LHB has far more to offer than we once imagined.

Science advances not only through new techniques, but also through new ways of seeing. Perhaps it is time to stop asking what we should do for the long head of biceps, and instead ask what the long head of biceps can do for us.

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A. Ali Narvani FRCS (T&O)¹

Mohamed A. Imam FRCS (T&O)¹

1 Rowley Bristow Unit, Ashford & St Peter's Hospital NHS Trust, Surrey, UK, Fortius Clinic, London, UK

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