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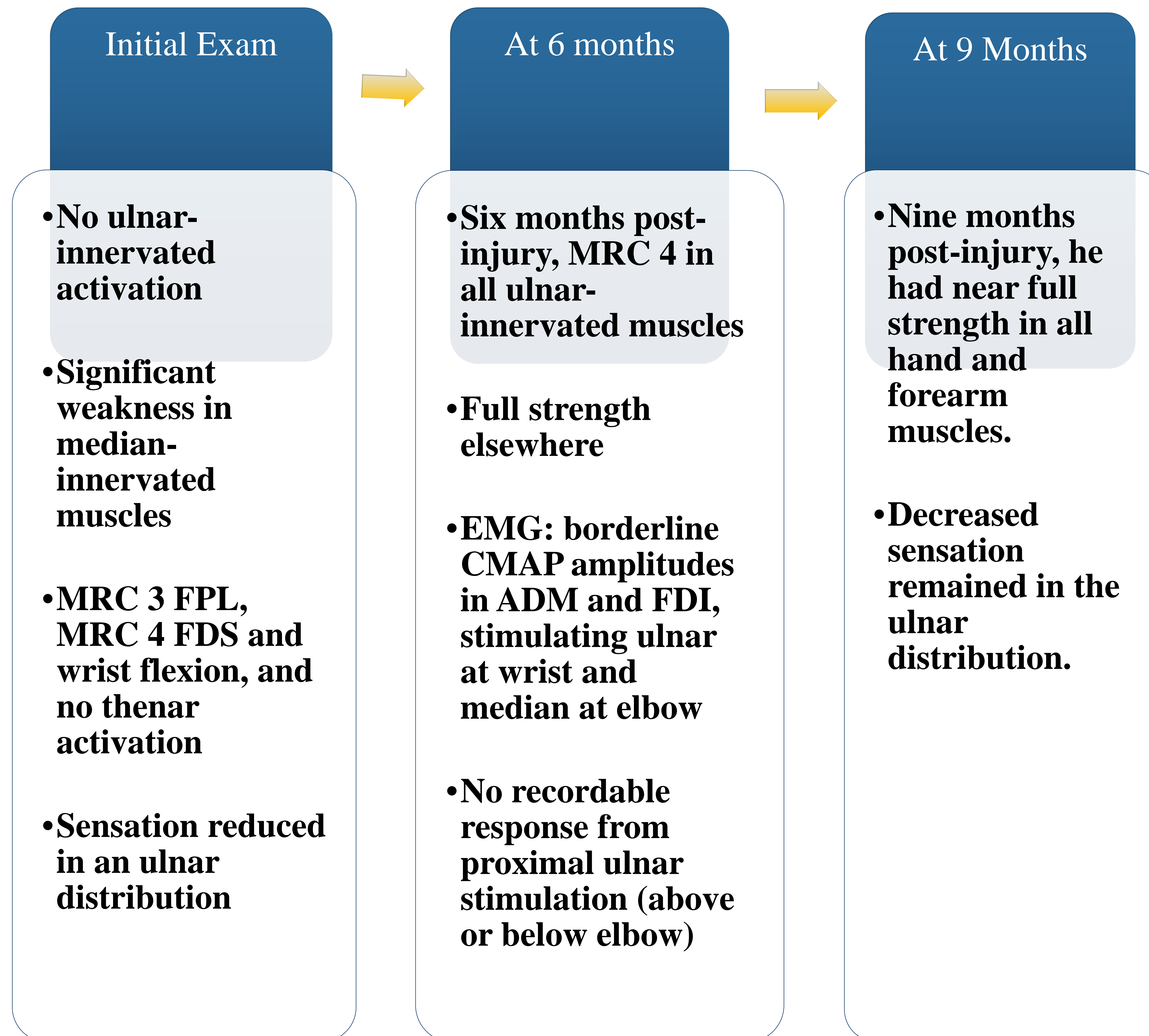
Introduction

- **Martin-Gruber anastomosis (MGA)**, from median to ulnar, usually occurs in the forearm, in approximately 20% of the population.
- **Axons destined for ordinarily ulnar-innervated thenar, hypothenar, and dorsal interosseous muscles are involved, travelling most of their course in the median nerve instead.**
- **Muscles receiving mixed innervation can benefit from collateral reinnervation if either source nerve is lost (median or ulnar).**
- **We present a patient who likely benefited from such an anastomosis, with robust collateral reinnervation after complete loss of ulnar innervation proximally.**

Patient

36-year-old male with a gunshot to his left arm. The bullet exited posterior medial, 2 inches proximal to the medial epicondyle.

Clinical Course



Discussion

- In this interesting and fortunate patient, the MGA acted as a natural median to ulnar nerve transfer
- Enough anastomotic axons were present to restore near normal function through collateral reinnervation
- Functional rehabilitation was not required as no axons were repurposed
- If ulnar grafting were pursued, the fate of regrown native ulnar axons on finding their muscle fibers occupied by collateral sprouts is unclear but could be evaluated through motor unit number estimate quantitative neurophysiologic techniques.
- These techniques could also be used to inform on the critical number of anastomotic axons required to restore adequate function and thereby the possibility for early intervention and improved outcomes.

