



# Complete Recovery of an Ulnar Nerve Transection using Processed Nerve Allograft in the Setting of a Pregnant Patient: Does Prolactin Play a Role?

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## Introduction

Processed nerve allografts have been shown to be safe and effective for reconstruction of peripheral nerves in the upper extremity<sup>1,2</sup>. To the best of our knowledge there is no published data for management of a traumatic injury to a peripheral nerve in the setting of a pregnant patient. We present a remarkable complete recovery of an ulnar nerve injury, and suggest that hormonal factors of her pregnancy may have aided her recovery.

## Case

23 yo RHD female, 9 wks pregnant with deep laceration to her right volar forearm 4 cm proximal to wrist crease (Fig. 1). She presented with ulnar nerve deficits and obvious flexor tendon injuries. No other medical comorbidities, non-smoker. Employed as a typist.



Figure 1

## Prolactin and the Central Nervous System

Prolactin (PRL) is a protein secreted by the pituitary gland. Levels of PRL are increased during pregnancy (Fig. 2). Remission of Multiple Sclerosis (MS) during pregnancy has led researchers to focus on the role of PRL<sup>3</sup>. PRL has been found to have important neuroprotective and remyelinating properties<sup>4</sup>. PRL stimulates oligodendrocytes, which create myelin sheath<sup>4</sup>. Pregnant mice demonstrate enhanced remyelinating capacity, which was also observed in virgin mice receiving PRL administration<sup>4</sup>. PRL has also been shown to have pro-inflammatory properties<sup>4</sup>.

Serum prolactin concentrations increase during pregnancy

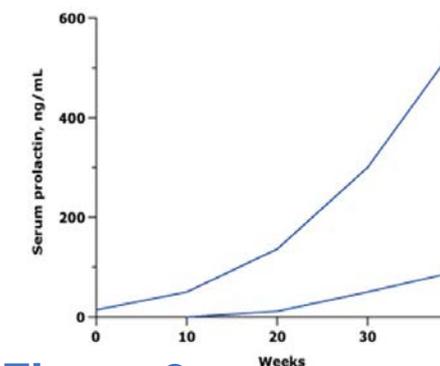


Figure 2

Tyson et al, Am J Obstet Gynecol

## Operative Details

Performed under axillary nerve block. Flexor tendons (8 total) were repaired first. After debridement, ulnar nerve with 20 mm gap. A 3-4 mm diameter x 3 cm Axogen® nerve allograft was placed by epineural repair with 9-0 nylon sutures under microscope. A nerve wrap was placed over each anastomosis and secured with 9-0 nylon.

## Remarkable Recovery

Splinted four weeks, then OT for PROM and light AROM initiated 6 wks: Ulnar nerve deficits remain. Positive Tinel sign just distal to laceration. Flexion improving.  
14 wks: Positive Froment's sign, M1 intrinsic function, S1 sensation  
30 wks: Delivers healthy baby boy.  
40 wks: Negative Froment's sign, M5 intrinsic function, S3/4 sensation. Full flexion AROM and PROM.  
Essentially a full recovery and returned to work as typist.

## Conclusions

While the effect of PRL on the central nervous system has been studied, there are no studies focusing on peripheral nerve injuries. Perhaps this could open up treatment options or adjunct therapies in the future for patients with peripheral nerve injuries. PRL is not without its own side-effects, and it is our hope that this case could lead to the development of animal studies to further characterize the effect of PRL, or other maternal hormones, on the effects of peripheral nerve healing.

## References

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