

STELLATE GANGLION BLOCK FOR UPPER EXTREMITY PAIN IN A PATIENT WITH HEMODIALYSIS ACCESS-INDUCED DISTAL ISCHEMIA

PRESENTER:
Robert Guidangen, MD

INTRODUCTION

- The construction of arteriovenous (AV) access for hemodialysis (HD) in the upper extremity may sometimes lead to ischemic complications broadly categorized as hemodialysis access-induced ischemia (HAIDI)¹.
- HAIDI can result from complications such as AV arterial stenosis and dialysis-access steal syndrome (DASS)^{1,2,3}. The resulting vascular insufficiency can produce symptoms of pain, paresthesia, and numbness.

CASE DESCRIPTION

1. 50 year-old hospitalized female with end-stage renal disease (ESRD) on intermittent HD with a left upper extremity AV graft reported ipsilateral arm and hand pain with numbness.
2. Vascular Surgery consultation determined patient’s AV graft had arterial stenosis and DASS, which were likely the cause of patient’s symptoms.
3. No immediate diagnostic or surgical interventions were deemed necessary at the time by surgical team. Patient was scheduled for outpatient follow-up after discharge from hospitalization.
4. Acute Pain Service was consulted given persistent pain despite pharmacotherapy.
5. Patient consented to a stellate ganglion block, which was performed during hospitalization. She reported significant resolution of her pain and mild improvement in numbness for 48 hours and at hospital discharge.

Stellate ganglion block is a viable analgesic modality in patients with upper extremity pain due to hemodialysis access induced distal ischemia

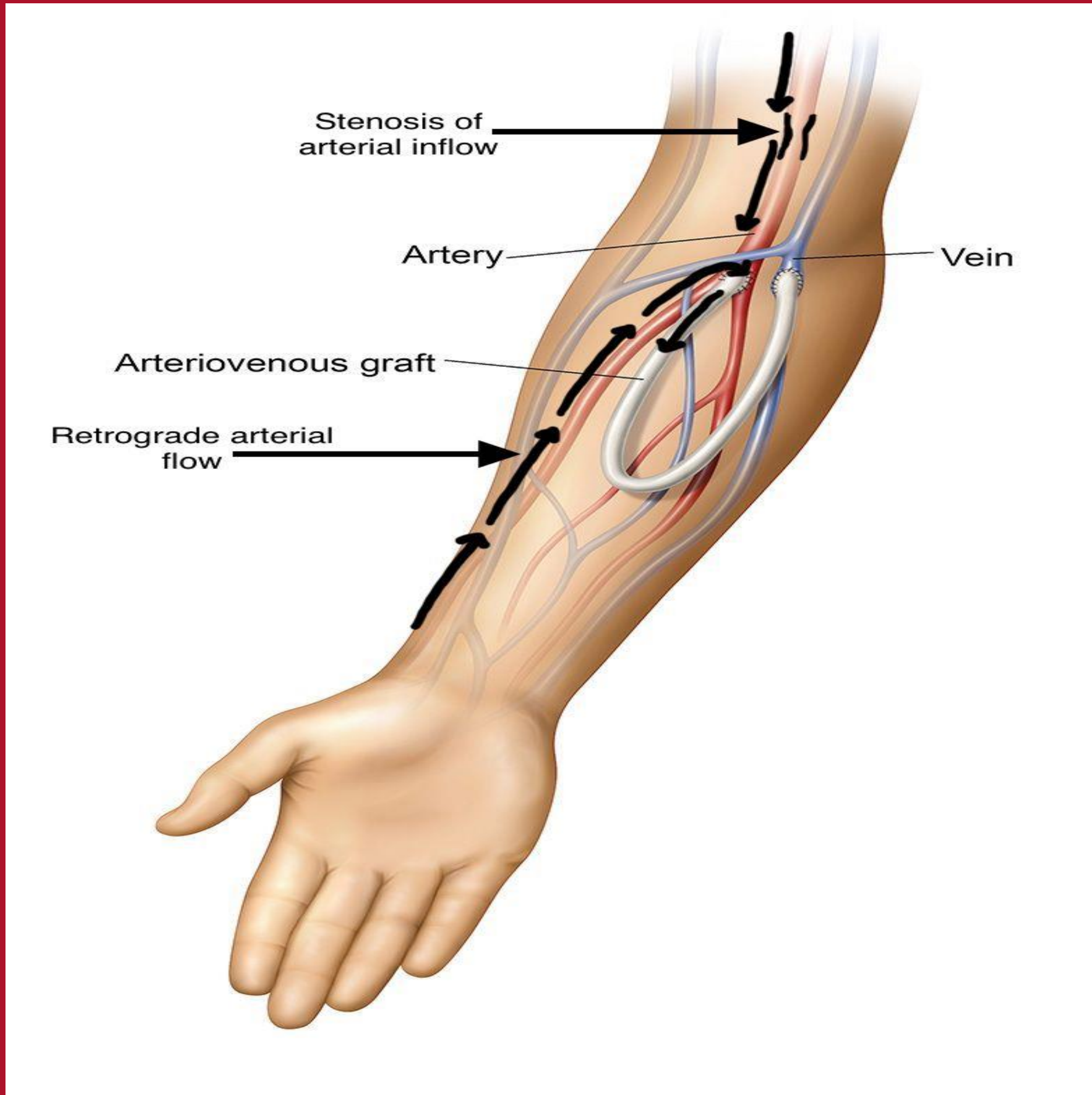


Figure 1. Hemodialysis-access induced distal ischemia can result from 1) stenosis of the arterial inflow proximal to the AV graft and 2) retrograde arterial flow as in a steal phenomenon.

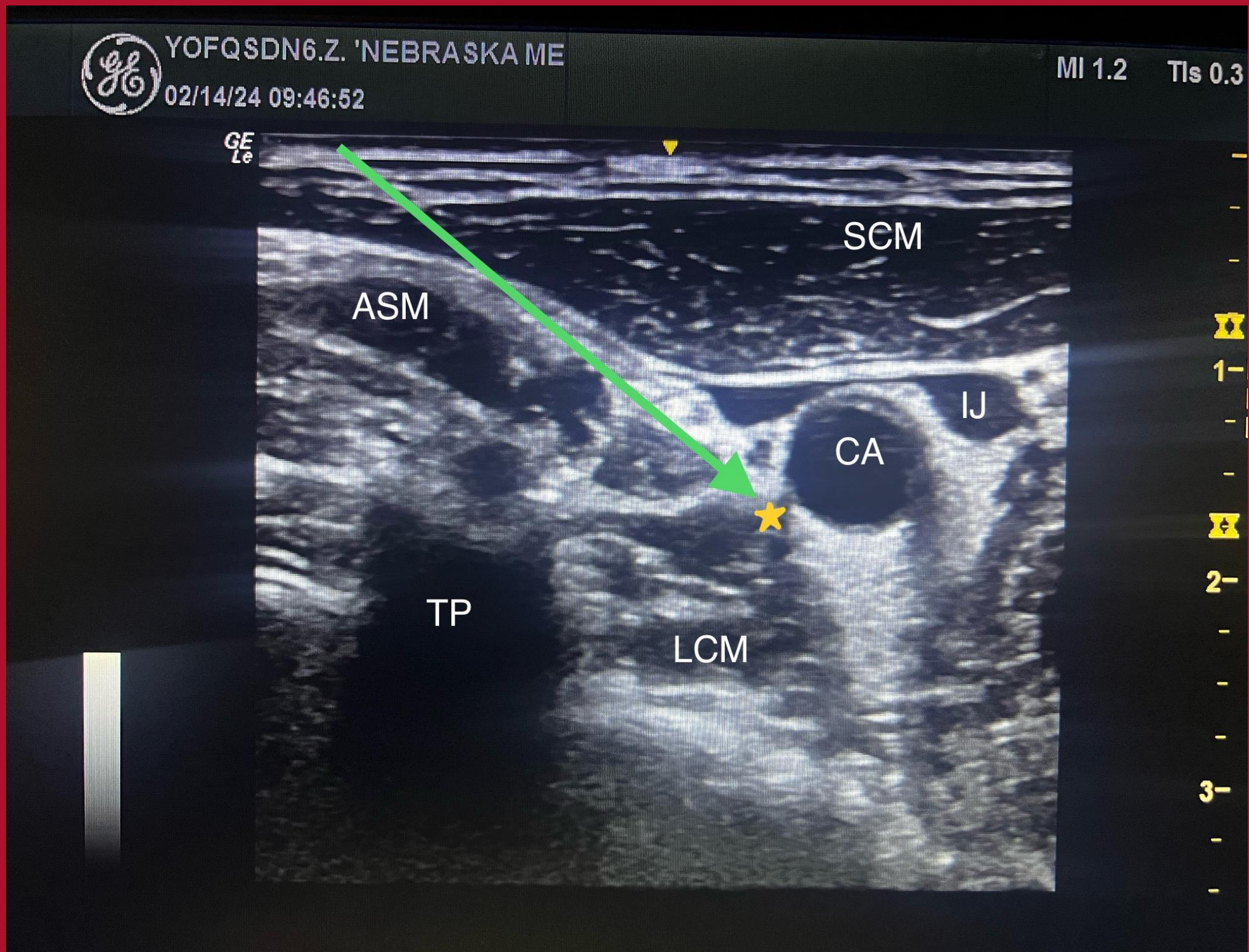


Figure 2. Transverse sonographic view of the neck at the level of C6 for a right stellate ganglion block. The green arrow represents needle trajectory; yellow star represents the injection target; carotid artery (CA); internal jugular vein (IJ); sternocleidomastoid muscle (SCM); anterior scalene muscle (ASM); transverse process (TP); longus colli muscle (LCM)

DISCUSSION

- HAIDI can be a significant source of morbidity for patients who require AV access and develop complications as a result.
- HAIDI may sometimes be prohibitive for dialysis treatments as patients with advanced disease may experience intolerable pain during periods of significant fluid shift (i.e., dialysis)².
- HAIDI is definitively managed with surgical intervention, which necessitates pre-operative diagnostic imaging and vascular studies. Inadequate pain control can be a source of morbidity pending surgical workup.
- No literature is available for regional anesthesia techniques for this specific vascular pathology.

CONCLUSION

- In our experience, ultrasound-guided stellate ganglion blockade was a safe, effective and efficient technique for pain relief from vascular insufficiency due to HAIDI while awaiting definitive treatment.

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Robert Guidangen MD, Jasmeen Kaur MBBS,
Rafael Arsky Lombardi MD, Nicholas Heiser MD
Department of Anesthesiology
University of Nebraska Medical Center, Omaha, NE



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