

2022 NEHS Annual Meeting Abstract Submission

COMPLETE

NEHS Vice President, Daniel Mastella, M.D., is currently accepting abstract submissions for presentation at our Annual Meeting on December 2, 2022.

This meeting will be held at the Sturbridge Host Hotel in Sturbridge, MA.

Therapists, NPs, and PAs are also encouraged to submit.

THE DEADLINE FOR SUBMISSION IS OCTOBER 15, 2022

RESIDENTS AND FELLOWS ONLY. Please indicate if you want your paper to be considered for the prestigious H.Kirk Watson, M.D. Founder's Award. The abstracts for award consideration will be presented in the morning and the award will be presented in the afternoon.

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* ABSTRACT TITLE

To biopsy or not to biopsy? Risk stratification of patients undergoing elective carpal tunnel or trigger finger release in the detection of amyloidosis - A literature Review

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* Name of who will present abstract at NEHS meeting on December 2, 2022 Please note that the same person cannot present more than one abstract at the meeting.

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* Please indicate if the presenter is:

Resident

* List full names of abstract authors

Al-Houssan A, MD, Jackson C, MD, Little A, MD, Yuan F, MD, Bontempo N, MD., Mastella DJ, MD

*** ABSTRACT - should include background information and a description of methods, programs, or practices.**

To biopsy or not to biopsy? Risk stratification of patients undergoing elective carpal tunnel or trigger finger release in the detection of amyloidosis - A literature Review

Al-Houssan A, MD, Jackson C, MD, Little A, MD, Yuan F, MD, Bontempo N, MD, Mastella DJ, MD

Background: Amyloidosis is a systemic disease characterized by extracellular deposition of insoluble protein aggregates.¹ Overall, 25% of patients diagnosed with amyloid light chain (AL) or wild type transthyretin (wTTR) die within 6 months and 24 months, respectively.² Carpal tunnel syndrome (CTS) is present in up to 20% of patients with cardiac amyloidosis and may develop 5-10 years prior to the onset of disease, which is associated with heart failure and death.²⁻⁵ Moreover, stenosing tenosynovitis (STS) has been associated with a 5-fold increase in the incidence of cardiac amyloidosis-related heart failure.⁶ Therefore, early detection of amyloidosis via tenosynovial biopsies during elective carpal tunnel release (CTR) and trigger finger release (TR) may be imperative in screening, expeditious referrals to cardiology, and prevention of disease progression.⁷ However, available literature lacks significant evidence on the selection of which patients require tenosynovial biopsy during elective CTR and TR. We aim to review the current literature to determine patient risk factors in those who present for elective CTR or TR in order to effectively and judiciously stratify them for tenosynovial biopsy.

Methods: A comprehensive review of national databases (PubMed and SCOPUS) was performed using literature from 1989 to 2022. Keywords included “amyloidosis,” “cardiac amyloidosis,” “carpal tunnel release,” “carpal tunnel syndrome,” “tenosynovial biopsy,” “trigger finger,” and “trigger release.” All studies evaluating a relationship between CTS and STS with biopsy-proven tenosynovial amyloidosis and cardiac amyloidosis were included. Studies unavailable in English were excluded.

Results: A total of 17 articles of varying types, including prospective and retrospective studies, case reports, and literature reviews were analyzed. Symptoms of CTS were present in 75% of patients diagnosed with TTR-CA, compared to 13% in other restrictive cardiac diseases such as hypertrophic cardiomyopathy (HCM) and Anderson-Fabry Disease (AFD), and 10% in controls.⁷ The prevalence of biopsy-proven tenosynovial amyloidosis ranged in studies from 10% to 34%, and 2% in patients undergoing CTR and TR, respectively.^{1,9,10} Independent risk factors for the presence of biopsy-proven tenosynovial amyloidosis were identified: age (men aged 50 or older, women aged 60 or older), male gender (64% when compared with 23% in females), Black/African American (5-fold when compared with White ethnicity), bilateral CTS (2-fold when compared with unilateral disease), prior CTR (2-fold increase), CTR + TR (14-fold when compared to 10-fold in CTR alone and 5-fold in TR alone), number of TR digits involved (3.8 vs 2.0 fingers), wild type TTR (up to 80% when compared to AL), spinal stenosis, atrial fibrillation, heart failure, and systemic diseases including rheumatoid arthritis, and multiple myeloma or monoclonal gammopathy of undetermined significance (1.5-3-fold increase).^{4-6,9-12} Conclusion: Patients undergoing elective CTR or TR may be manifesting early signs of systemic amyloidosis that can progress to life-threatening cardiac disease and death. This literature review provides the most complete and up-to-date overview of significant independent risk factors of developing cardiac amyloidosis in patients undergoing elective CTR and TR. Through a better understanding of when and in which patients to biopsy, hand surgeons can facilitate the early detection, treatment, and prevention of cardiac amyloidosis with specialist referral for screening. Moreover, this may prevent the need for excessive biopsies and unnecessary healthcare costs.

Keywords: amyloidosis, cardiac amyloidosis, carpal tunnel release, carpal tunnel syndrome, tenosynovial biopsy, trigger finger, trigger release

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Please attach files with diagrams and/or photos to support your abstract (10 MB limit)

*** Please attach the abstract presenter's CV**

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