2023 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 1, 2023.

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, 2023

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**

Fracture Types in Combined Elbow Fractures of the Radial Head and Coronoid

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*** Name of who will present abstract at NEHS meeting on December 1, 2023 Please note that the same person cannot present more than one abstract at the meeting.**

Huub H. de Klerk

*** Please indicate if the presenter is:**

Not currently a resident or fellow

* List full names of abstract authors Please note - one of the lead authors must be present at the meeting to answer questions about the paper.

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

Aims: This study aimed to evaluate when coronoid and radial head fractures occur without an ulna shaft fracture: (1) what coronoid fracture patterns are seen according to the O'Driscoll classification, and (2) to determine whether there is a correlation between the type of coronoid fracture and radial head fracture pattern.

Methods: This retrospective multicenter cohort study evaluated preoperative CT scans from 168 adult patients who had fractures of the coronoid and radial head. Mean age was 50 years (SD: 15), and 54% were female (91/168). Coronoid fractures were classified using the O'Driscoll classification. Displaced fracture fragments of the radial head were allocated to radial head regions; anterolateral (AL), anteromedial (AM), posterolateral (PL), posteromedial quadrants (PM). The most prominent point of the radial tuberosity was used as a reference to define the middle of the PM quadrant. on imaging at the time of trauma were considered.

Results: Sixty-six percent of the combined coronoid and radial head fractures involved type 1 coronoid fractures (110/168), 30% had a type 2 coronoid fracture (50/168), and in 4% of the patients, a type 3 coronoid fracture was seen (8/168). Thirty-five percent of the patients had an ulnohumeral dislocation on imaging at the time of trauma (56/168). Of these dislocated elbows, 66% were type 1 fractures (i.e., terrible triad injuries) (37/56), 32% had a type 2 coronoid fracture (18/56), and in 2% of the patients, a type 3 coronoid fracture was seen (1/56). Seven different radial head fracture patterns were documented (Table 1). For all types of coronoid fractures, the AL quadrant of the radial head was most often fractured and displaced (Figure 1). Most patients showed a two-part radial head fracture in which the fragment spanned the AM and AL quadrants (67/168 [40%]).

Conclusion: According to landmark studies and classic teaching, coronoid fracture morphology associated with terrible triads include the tip and extend into the sigmoid notch. However, recent biomechanical- and clinical series suggest anteromedial facet involvement in posterior TT elbow fracture-dislocations. Our results confirm that indeed coronoid fracture morphology includes a spectrum, with about two-thirds of patients involving the classic anterolateral coronoid tip with extension in the signoid notch which are amenable for suture- or screw fixation, via a lateral approach. However, this study also reveals a spectrum of coronoid pathoanatomy including the anteromedial facet in one-third of patients, that may require an additional medial approach for adequate coronoid (buttress) fixation.

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

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* Please attach the abstract presenter's CV

Abstract NEHS

Fracture Types in Combined Elbow Fractures of the Radial Head and Coronoid

Huub H. de Klerk, Nadia Azib, Nadalini Nettuno, Neal C. Chen, Michel P.J. van den Bekerom, Inger B. Schipper, Niels W.L. Schep, Job N. Doornberg

Figure 1. Radial head fractures per coronoid fracture type

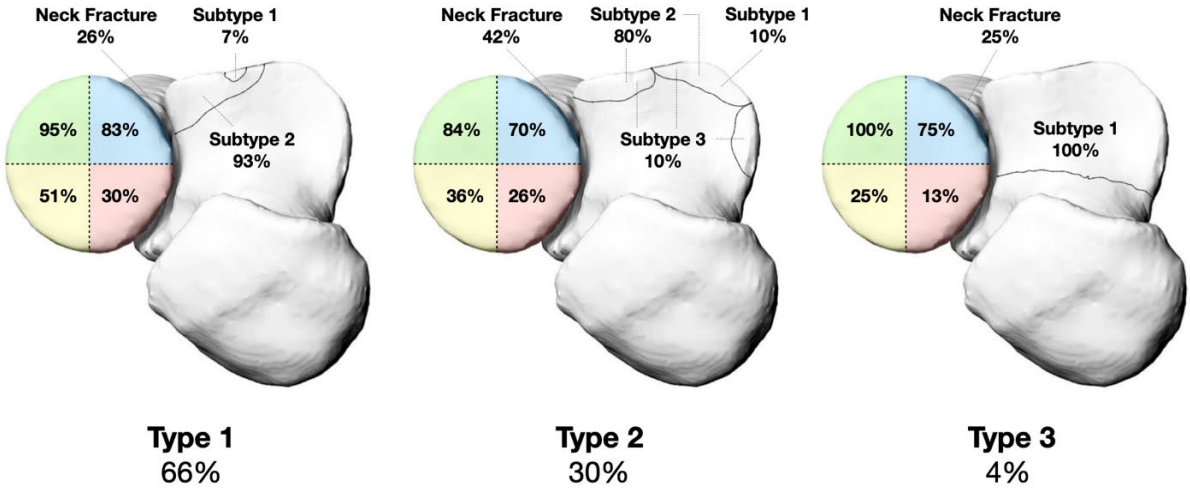

Table 1. Involved radial head quadrants per coronoid fracture type

Involved Radial Head Quadrant	**Type 1** *(n=110)*	**Type 2** *(n=50)*	**Type 3** *(n=8)*
AL	4 (4%)	4 (8%)	1 (13%)
AL, PL	10 (9%)	3 (6%)	1 (13%)
AM, AL	42 (38%)	20 (40%)	5 (61%)
AM, AL, PL	23 (21%)	6 (12%)	1 (13%)
AM, AL, PM	5 (5%)	3 (6%)	0 (0%)
AM, AL, PM, PL	20 (18%)	6 (12%)	0 (0%)
Decapitating neck fracture	6 (5%)	8 (16%)	0 (0%)

n, number of elbows; AL, anterolateral; AM, anteromedial; PL, posterolateral; PM, posteromedial