

Introduction

- NAT is the second leading cause of mortality in children under age 3¹.
- 13% of these children present with a femur fracture².
- Current AAOS guidelines call for workup of children under age 3 with suspected NAT but do not detail a specific protocol³.

Objectives

- Determine the efficacy of an age-specific NAT protocol to identify NAT.
- Identify key risk factors for NAT in this population.
- Determine the role of social work and child abuse specialists in the NAT protocol.

Methods

- Retrospective review of 475 patients under age 3 presenting with femur fracture was conducted from 2012-2018.
- Protocol performed as seen to the right.
- 3 types of data collected:

Demographics

- Age
- Gender
- Ethnicity

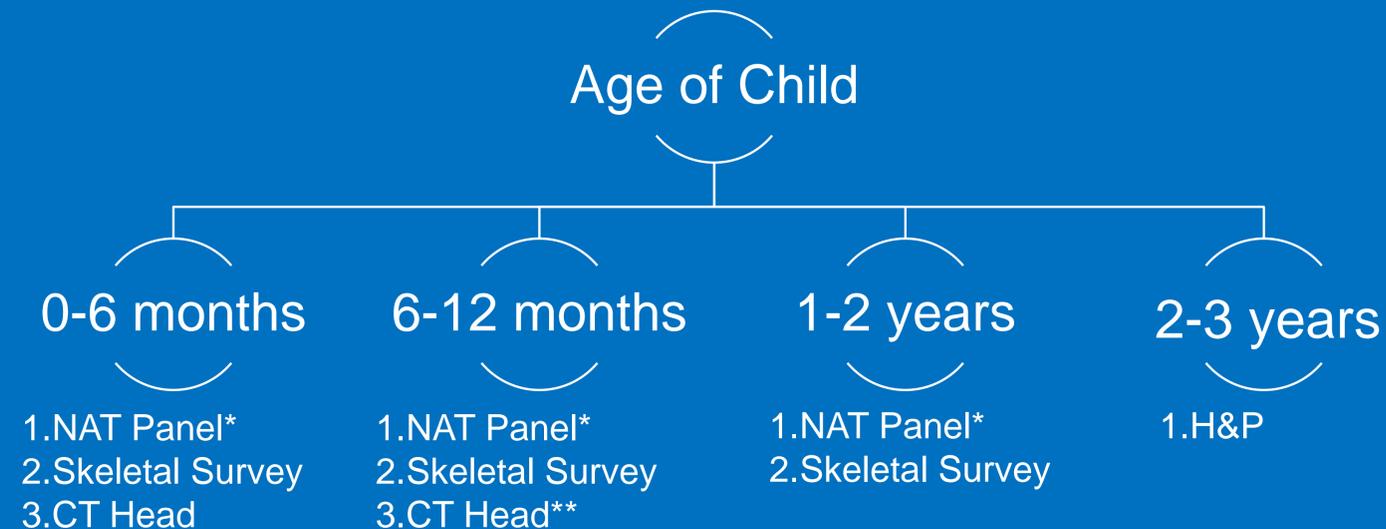
Injury Characteristics

- Mechanism of Injury
- Type of Fracture
- Time from Injury to Presentation

Social Work Evaluations

- Social Work findings
- CPS Notified
- Change of custody

An age-specific work-up protocol for suspected non-accidental trauma (NAT) in children under 36 months of age improved detection of NAT, especially when combined with social work input.



* NAT Panel consists of CBC, PT/PTT, amylase, and lipase

** CT Head Optional for 6-12 month age group

Results

- Age-specific protocol resulted in higher rates of NAT detection than current methods (24.4% vs. ≈13%).
- Overall work-up had increased compliance (77% vs. <50%).
- No sacrifice of sensitivity (97.5%) nor specificity (99.2%) with additional components of protocol
- Children aged 1-2 years most at risk of incomplete workup (55.2%).
- Social work found 3 additional positive NAT cases in patients with incomplete workup.

Key NAT Risk Factors:



Female
Gender
(OR 2.38)



Age 0-6
months
(OR 9.5)



"Unknown"
Time of Injury
(p = 0.04)

Conclusions

- The new protocol is more concrete, leading to improved compliance.
- The new protocol is more effective, leading to better screening of potential NAT victims.
- Clinicians should have a heightened suspicion for NAT in children with the above key risk factors.
- Involvement of social work can find NAT victims that "fall through the cracks".

References

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