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# Accidental and Non-Accidental Head Injury in children. Is there a difference in Computed Tomography (CT) presentation?



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## Introduction:

Differentiation between accidental and non-accidental head injury particularly with intracranial haemorrhages in children is a common medical & legal dilemma. Previous studies & research based on surgical, radiological & autopsy data suggest that different types of brain injuries tend to occur with accidental versus non-accidental trauma. Published data showed that CT brain findings of subdural bleed are more frequently encountered with non-accidental causes of head injury.

## Objective:

To see if there is any significant difference in the types of intracranial hemorrhages seen on computed tomography (CT) brain between accidental and non-accidental head injury in children admitted to Hospital Tengku Ampuan Afzan (HTAA), Kuantan, Pahang.

## Methodology:

All CT brain of children (newborn to 18 yrs of age) admitted to HTAA from September 2009 until September 2010 which demonstrated intracranial bleed, traced from the CT scan registration book and from the PACS/RIS systems (*Picture Archiving and Communication System / Radiology Information System*) were included in this study. Patient's clinical notes were traced from HTAA's Record Office. The causes of non-accidental and accidental head injury were determined. All the CT images were interpreted independently by 2 radiologists who were blinded to the indication of the CT examination. Statistical analysis were done using SPSS version 12.

## Results:

Figure 1: Total no. of cases (N = 68)



Figure 3: CT brain of 2 different patients showing subdural haemorrhages (*white arrows*)

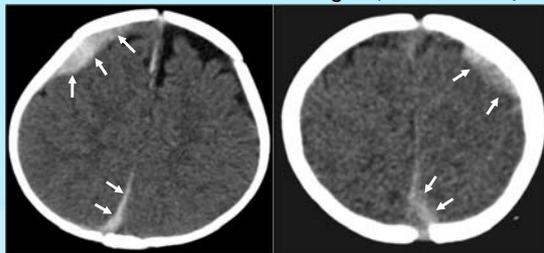
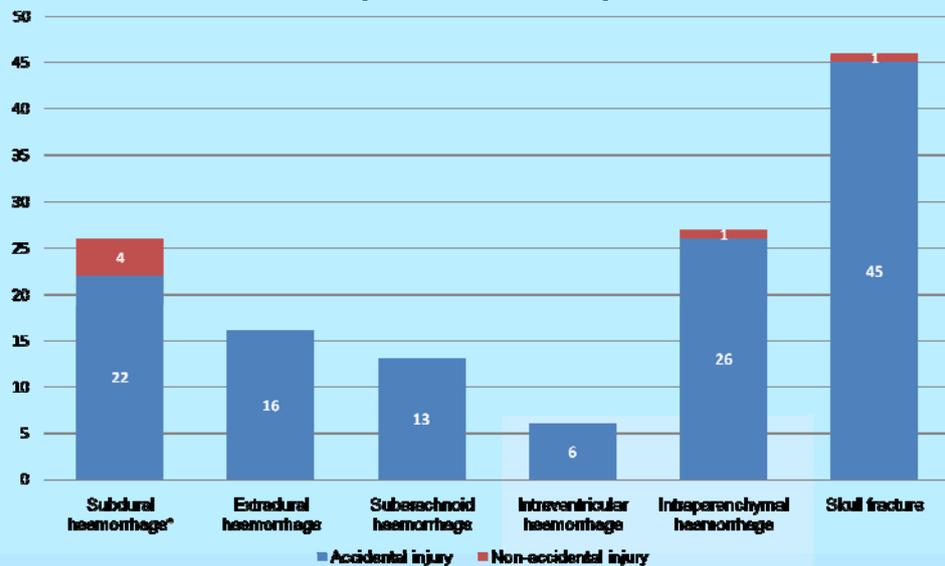


Figure 2: CT brain findings



\*Subdural haemorrhage is statistically significant ( $p = 0.018$ )

## Conclusion:

Although limited by a small number of patients with non-accidental injury, our data showed that CT brain findings of subdural haemorrhage has a statistically significant association with non-accidental injury. This is similar with other published data in the literature.

## References:

1. Asghari Mohammad (2008). Comparison of Different Kinds of Traumatic Head Injury in Children on Computed Tomography. *Research Journal of Biological Sciences*;3(9):973-978
2. Abel Murgio (2003). Epidemiology of Traumatic Brain Injury in Children. *Revista Espanola de Neuropsicologia*; 5,2:137-161
3. Wells RG, Vetter C, Laud P (2002). Intracranial Hemorrhage in Children Younger Than 3 Years. Prediction of Intent. *Arch Pediatr Adolesc Med.*;156:252-257

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