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Original Research Article

Retrospective CT Evaluation of Head Injuries Due to Coconut Falls at Tertiary Care Hospital

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Conflict of interest: Nil

Abstract

Introduction: Falling coconuts are a well-documented but under reported cause of traumatic head injury, particularly in tropical regions. Due to the weight and velocity of falling coconuts, injuries can be severe. In this study, we conducted a retrospective study of patients presenting with head injuries due to coconut falls who underwent CT evaluation. The objective was to describe the demographic distribution and CT findings.

Materials and Methods: This retrospective study was conducted from 2022 to June 2025, over a period of more than one year, reviewing CT scans of patients who presented with head trauma due to coconut falls at a tertiary care center. Inclusion criteria included all age groups with documented history of coconut-related head injury and CT imaging. Data were analyzed for type, severity, and location of cranial injuries. All eligible patients were identified.

Results: In our study, Gender Distribution shows a clear male predominance (75.6%). Skull fractures were seen in 5 patients (12.2%). Scalp/Soft Tissue Swelling was observed in 8 cases (19.5%). In this study CT Spine Evaluation revealed that nearly half the patients (46.3%) underwent spinal imaging, though no spinal injuries were reported.

Conclusion: Coconut-related head trauma, although rare, can cause serious injuries. Prompt imaging and early management are essential to reduce morbidity.

Keywords: Coconut Fall, Head Trauma, CT Scan, Skull Fracture, Intracranial Hemorrhage.

Introduction

Head injuries remain a significant cause of morbidity and mortality globally. In tropical regions, an unusual yet potentially life-threatening mechanism of injury is trauma caused by falling coconuts. Coconuts can weigh between 1 to 4 kg and fall from heights of up to 25 meters, resulting in significant kinetic energy upon impact. The potential for such impacts to cause severe cranial injuries has been acknowledged in case reports and small observational studies [1,2].

Although this phenomenon is often mentioned anecdotally, coconut-related head injuries are under reported and under-researched.

The nature of injury varies from superficial scalp lacerations to severe traumatic brain injuries including skull fractures and intracranial hemorrhages [3]. Due to the force of impact, the injury pattern closely mimics high-velocity blunt trauma [4]. Computed Tomography (CT) is the imaging modality of choice in the acute assessment of head trauma, providing critical insights into the type and extent of injury. It is indispensable in identifying skull fractures, hematomas, brain edema, and contusions [5]. Timely diagnosis using CT helps guide appropriate intervention, whether surgical or conservative [6].

Tropical countries such as India, Sri Lanka, the Philippines, and parts of Africa report rare but significant morbidity from falling coconuts. [7] A systematic analysis of such injuries using CT scans is essential to understand the burden, guide clinical management, and influence public safety measures [8].

In this study, we conducted a retrospective study of patients presenting with head injuries due to coconut falls who underwent CT evaluation. The objective was to describe the demographic distribution, CT findings.

Materials and Methods: This is a retrospective observational study conducted at a tertiary care center in South India from May 2022 to June 2025.

Source of Data: Hospital electronic medical records and radiological database.

Inclusion Criteria:

- Patients of any age and gender
- History of head injury due to coconut fall
- Underwent cranial CT scan within 24 hours of injury

Exclusion Criteria:

- Patients with polytrauma or injuries due to other causes
- Incomplete medical or imaging records
- CT scans performed more than 24 hours after injury

Methodology:

- Injuries were categorized as:
- Skull fractures (linear and comminuted), scalp injuries and intracranial haemorrhage

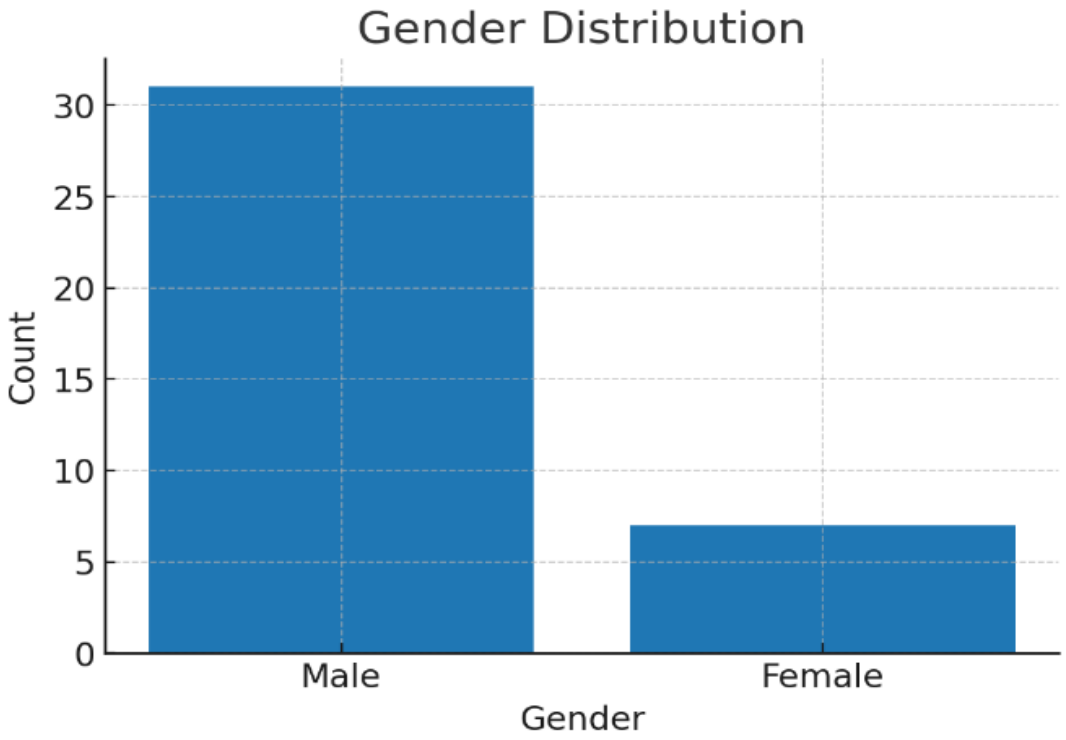
Statistical Analysis: Data were entered in MS Excel and analyzed using SPSS version 26. Frequencies and percentages were calculated. Graphs and tables were generated to visualize the distribution.

Results

Table 1: Gender Distribution

Gender	Count
Male	31
Female	7

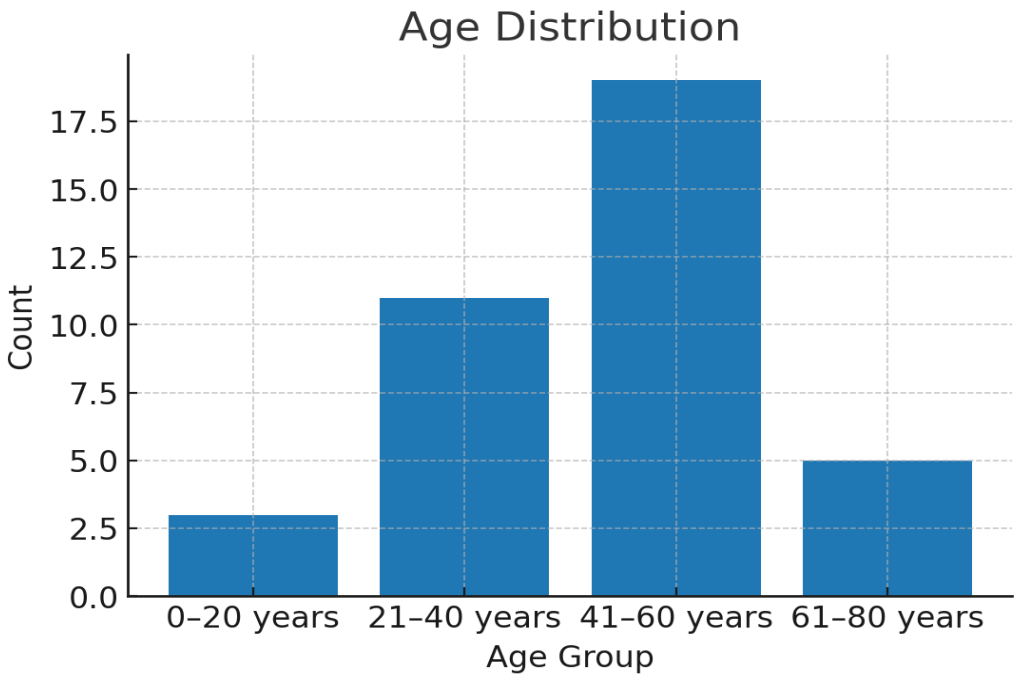
In Table 1 Distribution of Gender shows a clear male predominance (75.6%).



Graph 1: Gender Distribution

Table 2: Distribution of Age

Age	Count
0–20 years	3
21–40 years	11
41–60 years	19
61–80 years	5

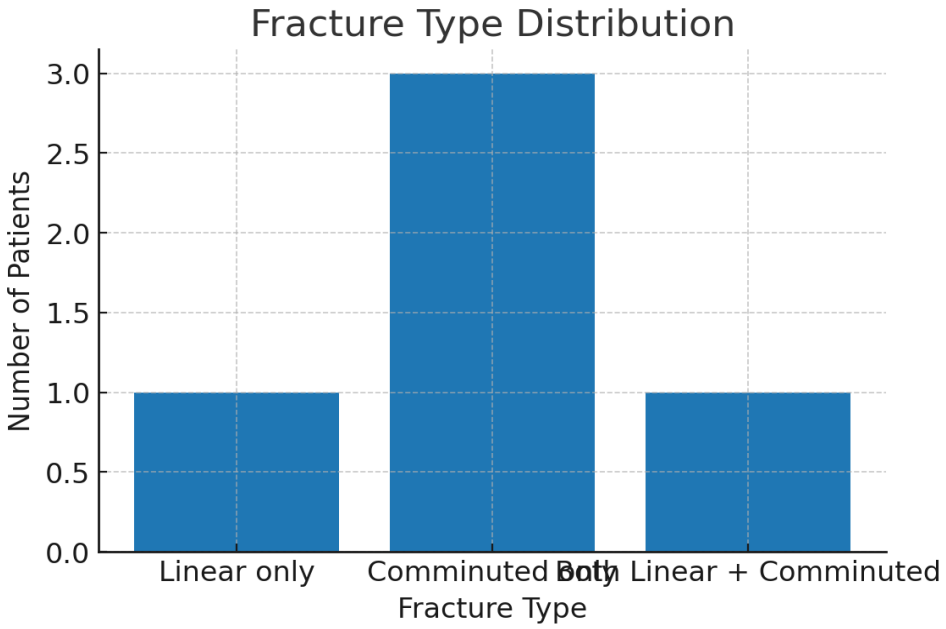


Graph 2: Distribution of Age

Table 3: Distribution of Skull Fracture Types among Patients

Fracture Type	**Number of Patients**
Linear only	1
Comminuted only	3
Both Linear + Comminuted	1
Total Patients	**5**

In table 3, Summary of types of skull fractures observed in 5 patients. Among these: One patient presented with a linear fracture only**,** three patients had comminuted fractures only**,** One patient exhibited both linear and comminuted fractures, this distribution highlights that comminuted fractures were more commonly observed either in isolation or in combination with linear fractures.

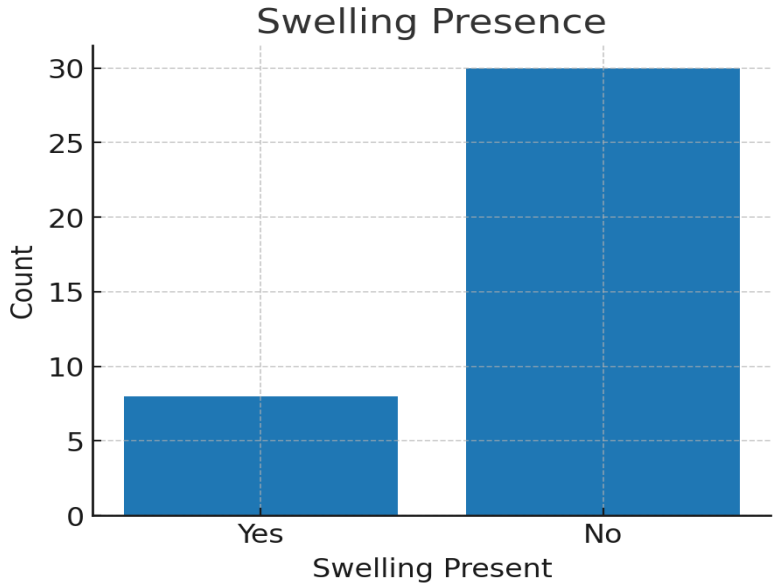


Graph 3: Distribution of Skull Fracture Types among Patients

Table 4: Scalp/Soft Tissue Swelling

Swelling Present	Count
Yes	8
No	30

In Table 4 Scalp/Soft Tissue Swelling was observed in 8 cases (19.5%).

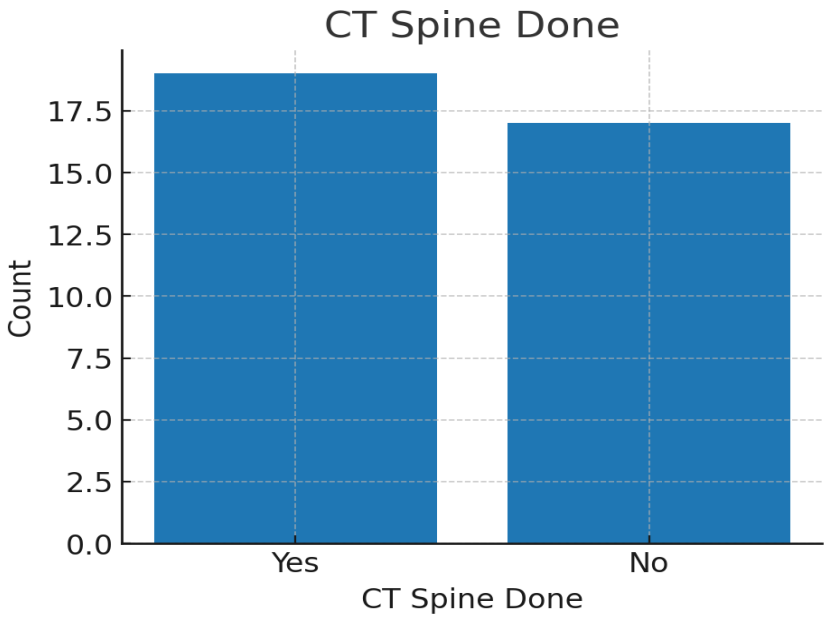


Graph 4: Scalp/Soft Tissue Swelling

Table 5: CT Spine Performed

CT Spine Done	Count
Yes	19
No	17

In table 5, CT Spine Evaluation revealed that nearly half the patients (46.3%) underwent spinal imaging, though no spinal injuries were reported.

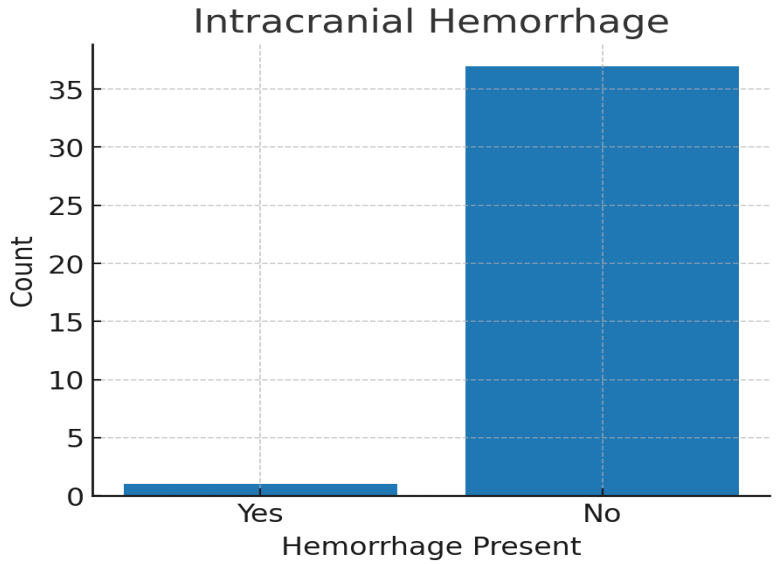


Graph 5: CT Spine Performed

Table 6: Intracranial Hemorrhage

Intracranial Hemorrhage	Count
Yes	1
No	37

In table 6, one patient had intra cranial hemorrhage in form of EDH and no intracranial hemorrhage in rest 37 patients.



Graph 6: Intracranial Hemorrhage

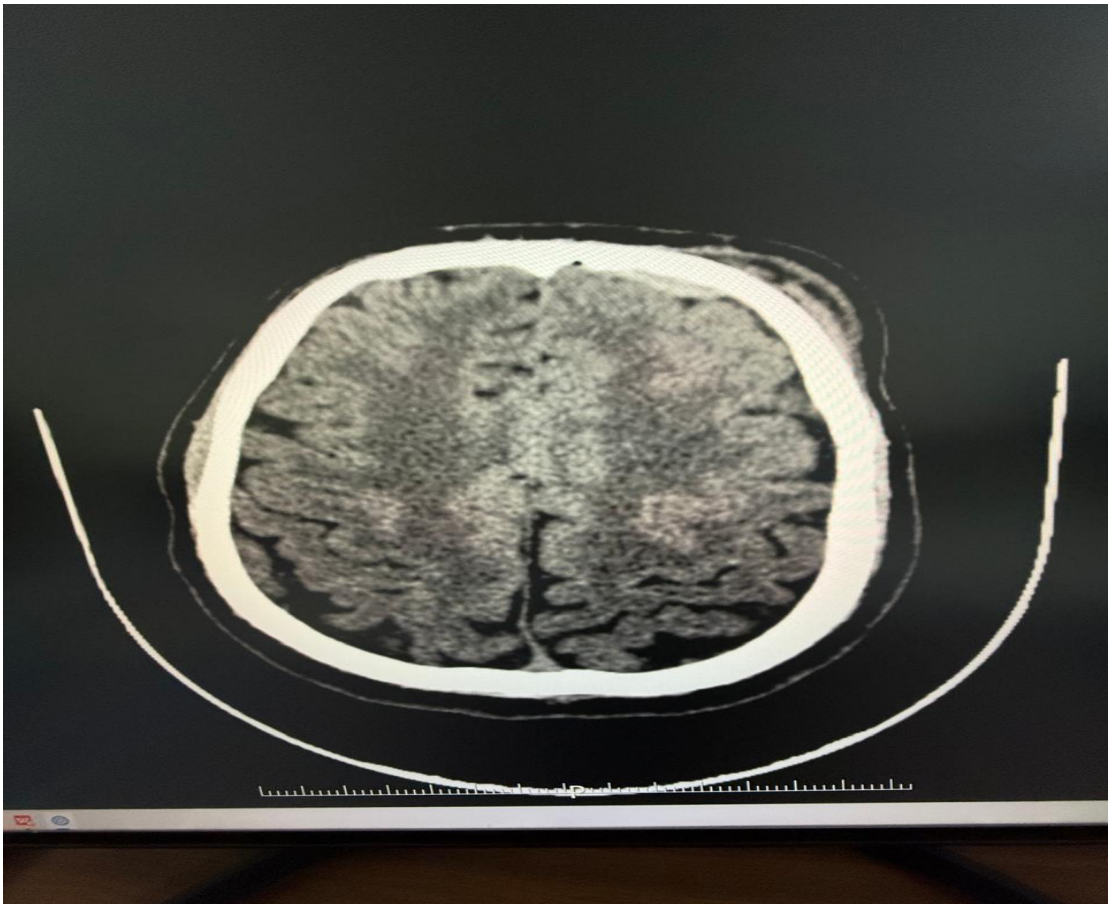


Figure 1: Edh with soft tissue swelling

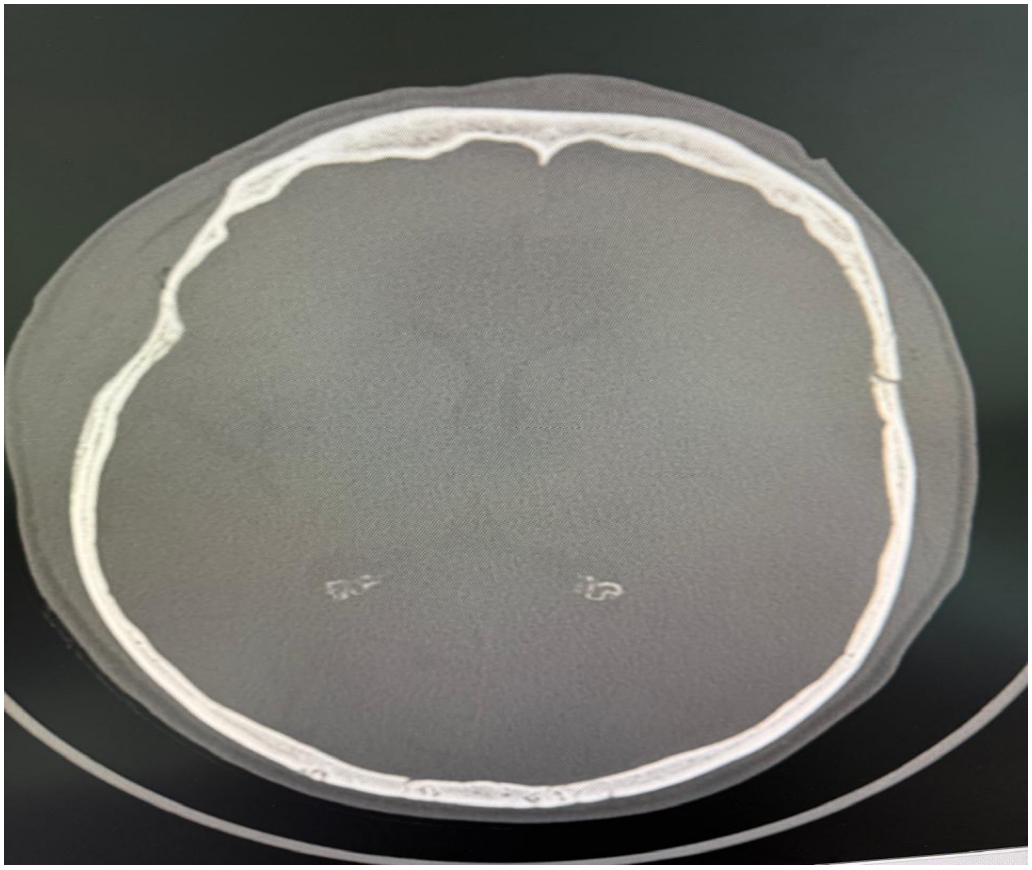


Figure 2: Linear fracture

Discussion

This retrospective CT-based study provides valuable insights into head injuries resulting from falling coconuts—a unique mechanism of trauma prevalent in tropical regions. With a total of 38 patients, our data reflect demographic trends, CT imaging patterns, and injury severity, reinforcing the need for awareness and timely management of such injuries.

In our study, Gender Distribution shows a clear male predominance (75.6%), consistent with existing literature, such as Balasubramaniam et al., who reported males accounting for over 70% of coconut fall-related head trauma [9]. This trend likely reflects occupational and behavioral patterns, with men being more involved in outdoor activities or working under coconut trees.

In this study, Skull Fracture Types revealed that 5 patients (12.2%) had skull fractures. In current study Scalp/Soft Tissue Swelling was observed in 8 cases (19.5%). Swelling often reflects the impact site and is a non-specific but frequently associated finding in blunt head trauma.

In coconut falls, localized scalp hematomas can sometimes mask more serious underlying skull fractures or contusions. Studies like those by Thomas et al. have noted that soft tissue swelling often co-exists with other radiological findings and should prompt CT evaluation, especially in pediatric or elderly patients [10,11]. In this study CT Spine Evaluation revealed that nearly half the patients (46.3%) underwent spinal imaging, though no spinal injuries were reported. This indicates a precautionary approach by clinicians, acknowledging the vertical force of impact from falling objects which may transmit down the axial skeleton. Prior reports, including those by Bhardwaj et al., support the practice of cervical spine clearance via imaging in high-impact cranial injuries [12].

This study reflects that intracranial hemorrhage was notable in one patient in our cohort, which is consistent with previous reports of injuries from coconut falls. Previous case series by Jagger et al. have described extradural hematomas and even subarachnoid hemorrhages following such injuries [13].

In this study, Distribution of age in younger to middle-aged groups 21-40 years are 28.9% and 41-60 years are 50%. Studies have shown that the 20–40-year-old demographic is most at risk [14]. This aligns with our anecdotal observation that most patients were working-age adults exposed to tree fall zones. Epidural hematoma (EDH) is a serious injury; however, even skull fractures without hematoma can lead to long-term morbidity. In a well-documented case from Papua New Guinea, a

coconut-related head injury proved fatal due to unrecognized intracranial hemorrhage [15]. Although no mortality was observed in our series, the presence of skull fractures and associated soft tissue changes underscores the importance of vigilant imaging protocols to detect potentially life-threatening complications early.

Conclusion:

Our study emphasizes the importance of early CT scanning, spinal imaging when indicated, and better documentation of injury type and severity.

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