

Introduction

The skull base, located at the bottom of the cranial cavity, provides structural support for the brain and serves as the primary boundary between the intracranial and extracranial spaces. Any fracture that affects the base of the cranial cavity, resulting from either direct local impact or distal force mechanisms, is termed a skull base fracture. Non-enhanced computed tomography (NECT) is the main imaging method used to initially assess patients suspected of skull base trauma. Obtaining a thorough understanding of the skull base necessitates high-resolution axial imaging, which should be supplemented with coronal and sagittal reconstructions for a comprehensive assessment.

years (standard deviation of 11.15 years) and a median of 26.00 years. The motorbike accident was the most observed cause of injury in 10 of 25 patients (40%). Of the 25 patients, 9 (36%) had fracture in the anterior skull base. The middle skull base was the most common fractured compartment with 16 of 25 (64%) patients. The fracture in the posterior skull base was found in the basiocciput in 1/25 (4.00%) patient.

Table 1: Distribution according to site of SBF and number of fracture lines in the ASB

Site of skull base fracture in ASB	(n=25)	% Within all patients (n=25)	% within only patients with fracture (n=9)
- Frontal sinus	8	32%	88.89%
- Fovea Ethmoidalis	4	16%	44.44%
- Orbital Plate	7	28%	77.78%
- The lesser wing of the sphenoid	1	4%	11.11%
- Cribriform plate	3	12%	33.33%

Table 2: Distribution according to site of SBF and number of fracture lines in the MCF

Site of SBF in MSB	(n=25)	% Within all patients (n=25)	% Within patients with fracture lines (n=16)
Petrous Bone	13	52%	81.25%
- Longitudinal	12	48%	75%
- Transverse	1	4%	6.25%
- Complex	0	-	-
- Otic capsule violation	1	4%	6.25%
- Otic capsule sparing	9	36%	56.25%
Squamous temporal	1	4%	6.25%
Greater wing of sphenoid	2	8%	12.50%

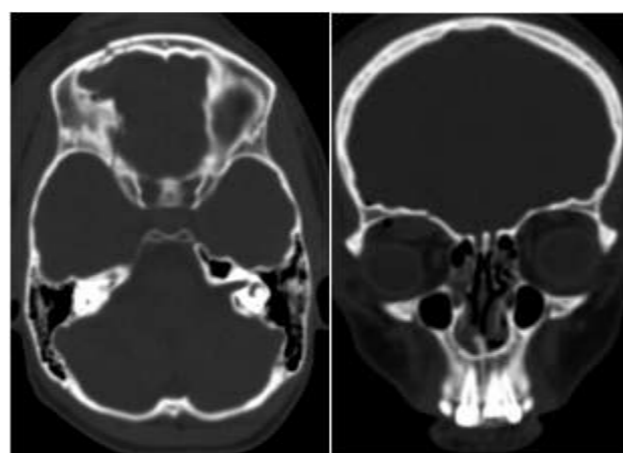


Figure 1: (Left) Axial CT brain bone window showing fracture of the right frontal bone and right orbital roof. (Right) Coronal CT brain bone window shows fractured right orbital roof in a 16-year-old female patient presented with raccoon eye after a fall from height.

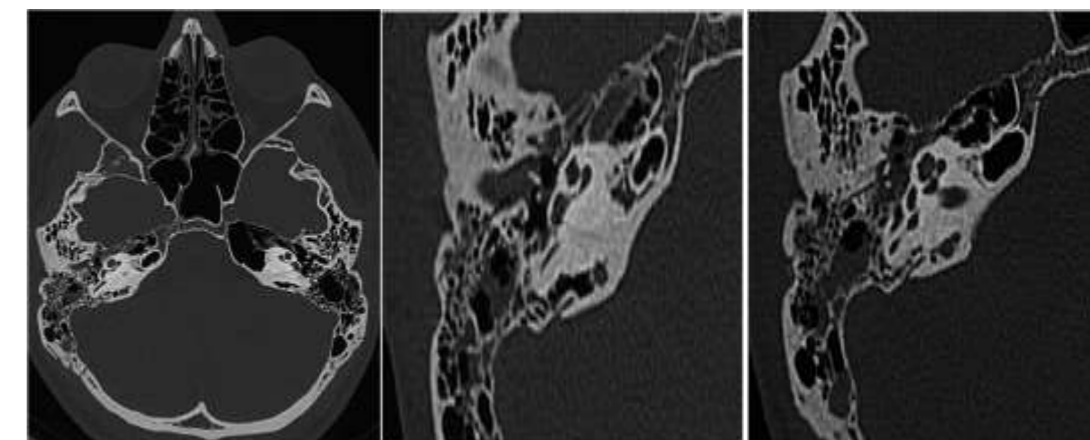


Figure 2: (Left) Axial CT brain bone window showing opacification of right mastoid air cells. (Middle and Right) Magnified views of right temporal axial CT bone window demonstrates right longitudinal temporal bone fracture sparing the otic capsule associated with incudomalleolar joint separation and right hemotympanum in a 26-year-old patient presented with right otorrhagia post road traffic accident.

Conclusion

MDCT demonstrated positive findings in 80% of patients clinically suspected for SBF. There is a strong relation between clinical suspicion of head injury skull fractures and SBF on MDCT. This suggests that patients who are suspected to have SBF should undergo MDCT, and radiologists should be attentive to the fracture lines presence and the associated signs in the skull base when reporting CT brain scans of patients with head injuries.

Aim of the Work

The aim of this work was to evaluate the role of multidetector computed tomography scanning in the assessment of traumatic skull base fractures.

Patients and Methods

This cross-sectional prospective study involved twenty-five patients with positive findings of a skull base fracture on head multidetector computed tomography following an acute head trauma exposure admitted at Alexandria University Main Hospital's Emergency Department from January to August 2023. All CT studies were performed using a 64-slice multidetector helical computed tomography machine. A non-contrast brain CT scan was performed in a helical mode of acquisition, with a 1 mm slice thickness, a spacing between slices of 1.5 mm, and a scan angle parallel to the skull base.

Results

The male patients were 21 (84%) while the females were 4 (16%). The age of the studied patients ranged from 14 to 64 years, with a mean of 27.64