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C.T. FINDINGS IN HEAD INJURY WITH & WITHOUT HELMET

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Abstract:

The present study describes the cranial computed tomography (C.T.) scan findings of 232 cases of head trauma seen between May to December 2016. The most common causes of head injury were motor-cycle accidents seen between the age of 21 – 50 years where as pathological finding were in 168 cases. A normal C.T. scan was seen in 64 cases.

The most common C.T. scan head trauma related findings were: (1) Subgaleal haematomas, (2) Skull fractures including base & maxillo facial, (3) Brain oedema & contusion, (4) Brain haematoma- EDH, SDH, SAH, I.C.H.

These findings showed the importance of C.T. exam in head injuries among patients without wearing helmets.

Radio- Diagnosis

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Introduction

Head injury is a major world health problem. Traumatic head injuries are a leading cause of morbidity, mortality, disability & socioeconomic losses in India. It is the most frequent lesion seen in trauma related death.[1] Motor cyclist whether rider or pillion both suffer severe brain injury if without helmets in present study.

Material & Method

From May to December 2016, we came across mild head trauma (Glassgow coma scale score of 13,14,15) who were studied.

The present study based on C.T. scan findings was done at K.D.M.C. Mathura between May 2016 to December 2016, isolated head trauma cases of motor cyclist accidents whether rider or pillion who were without helmets suffered severe head trauma as compared to those who gave history of wearing helmets. Motorcycles are the main mode of transport in low and low-middle income countries and there is a greater need to take more steps to make this mode of transport safer wearing a standard helmet and tying it properly can prevent loss of lives in 90 % cases, Motorcyclists are 66 times more likely to die than driver of car passenger, wearing a helmet improves by 42 % chances of survival and avoids 69 % of injuries. Thirty four Lac might die in motorcycle crashes across the globe (2009 -20), fourteen lac lives can be saved using proper helmet. Helmet detachment occurs in 30 % of fatal crashes.[1]

C.T. scan finding in head trauma with or without helmets were analysed.

Material & Methods

During this period C.T. scan of head were done in 232 cases with history of headache, vomiting, amnesic, momentary loss of

consciousness and even if another physical findings were normal. Motor symptoms were found associated with abnormal C.T. scan.

A history of helmet is precisely asked to the victim himself or the attendants of the patient were taken. The findings are given in tabular form.

The victims / patients were divided in two major groups, those were with helmets, and without helmets.

Result

Total C.T. scan 232

With Helmet	Without Helmet
64	168

Clinical stage Glasgow coma scale (13,14,15)

C.T. Scan Findings were unremarkable Three C.T. predictors of mortality were found [3]

(i) Presence of cerebral oedema

(ii) Intraventricular bleed.

(iii) Degree of midline shift , However the most Accurate Prediction of poor outcome included age, hypotension & 3 different C.T. characteristics

(i) S.A.H. (subarachnoid haemorrhage)

(ii) Intracerebral Haematoma

(iii) Intracerebral contusion

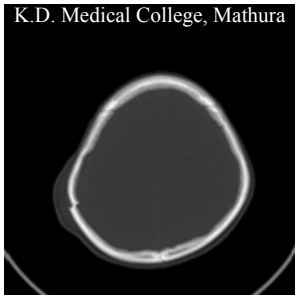
S.R	Without Helmet Type of C.T. Findings	No. of Cases % Findings	%
01	Subgaleal Hematoma	103	44.4
02	Extra Dural Hematoma	13	5.6
03	Sub Dural Hematoma & Mid- Line Shift	20	8.6
4	Sub-arachnoid Haemorrrhage	19	8.18
05	Cerebral Contusions & Oedema	20	8.62
06	Mid Line Shift	11	4.74
07	Skull Fracture	52	22.41
08	Maxillo-facial Injuries	12	5.17
09	Pneumocephalus		
		250	

Eighty Two patient has more than one findings

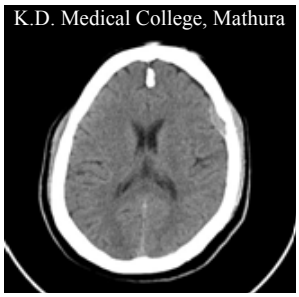
Male		Female	Total
Without Helmets -	88	80	168
With Helmets -	34	30	64
Total -	122	Total - 110	232

Age Group Involved

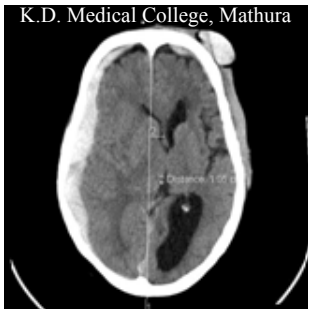
S.No.	Age	Cases	%
01	0 -20	31	13.36
02	21 -50	172	74.13
03	51 -80	29	12.51
		Total - 232	



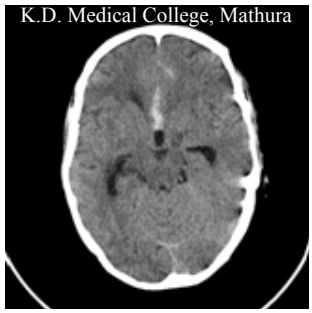
Subgaleal Hematoma



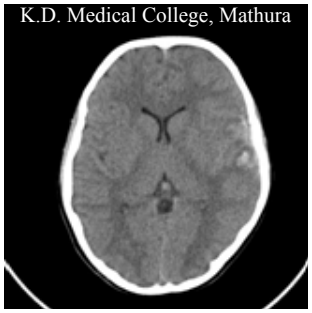
Extra Dural Hematoma



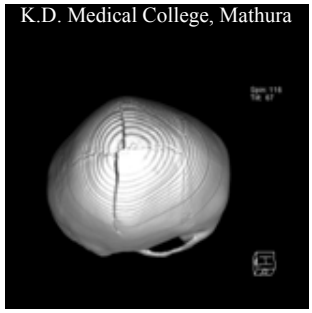
Sub Dural Hematoma & Mid- Line Shift



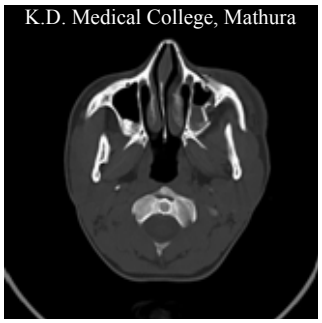
Sub-arachnoid Haemorrrhage



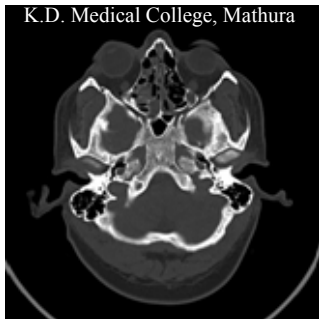
Cerebral Contusions & Oedema



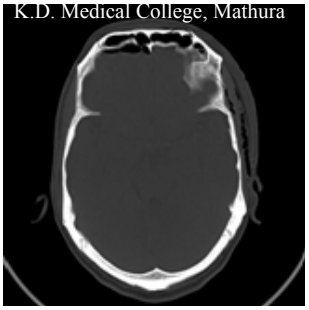
Skull Fracture



Maxillo-facial Injuries



Maxillo-facial Injuries



Pneumocephalus

Discussion

Between age of twenty one & fifty more cases were presented, this age group is more vulnerable group as compare to less than 20 year & above 50 years, 13.36 & 12.51 % respectively.

A careful history taken during C.T. scan by us also revealed that a significant difference was noted between persons wearing helmet & without helmets several such study have been conducted & have submitted their report to the competent authority to control the situation.

Three C.T. predictors of mortality were noted as follows (i) presence of cerebral oedema, (ii) Intraventricular bleed, (iii) degree of midline shift. However the poor outcome also could be predicted by the factors including age, hypotension and three different C.T. findings viz-

(i) Subarchnoid haemorrhage.
(ii) Cerebral contusion.
(iii) Intracerebral hematoma.

The high yield and diversity of C.T. scan findings in head injury patients justify to subject the victim for urgent C.T. scan to reach the diagnosis & management, accordingly.

Conclusion

Our study showed the epidemic profile of head trauma in the city of Mathura – Highway area. The high prevalence of head trauma related C.T. findings probably justify the use of C.T. scan in mild Head trauma is common with a significant impact on public health & health care cost. Mandatory helmet laws can help reduce mortality & burden of serious injuries and must be strictly implemented for all excluding gender bias.

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