The Weekend Effect in Orbital Fractures: An Analysis Using the National Inpatient Sample Database

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BACKGROUND

The weekend effect has been discussed in multiple disciplines. However, there has only been one study of it in plastic surgery. It has not been discussed in facial fractures, which have been noted to occur more often on weekends. Orbital fracture incidence and outcomes have been related to age, alcohol and male gender.

OBJECTIVE

We hope to identify whether there is a weekend effect in orbital fractures.

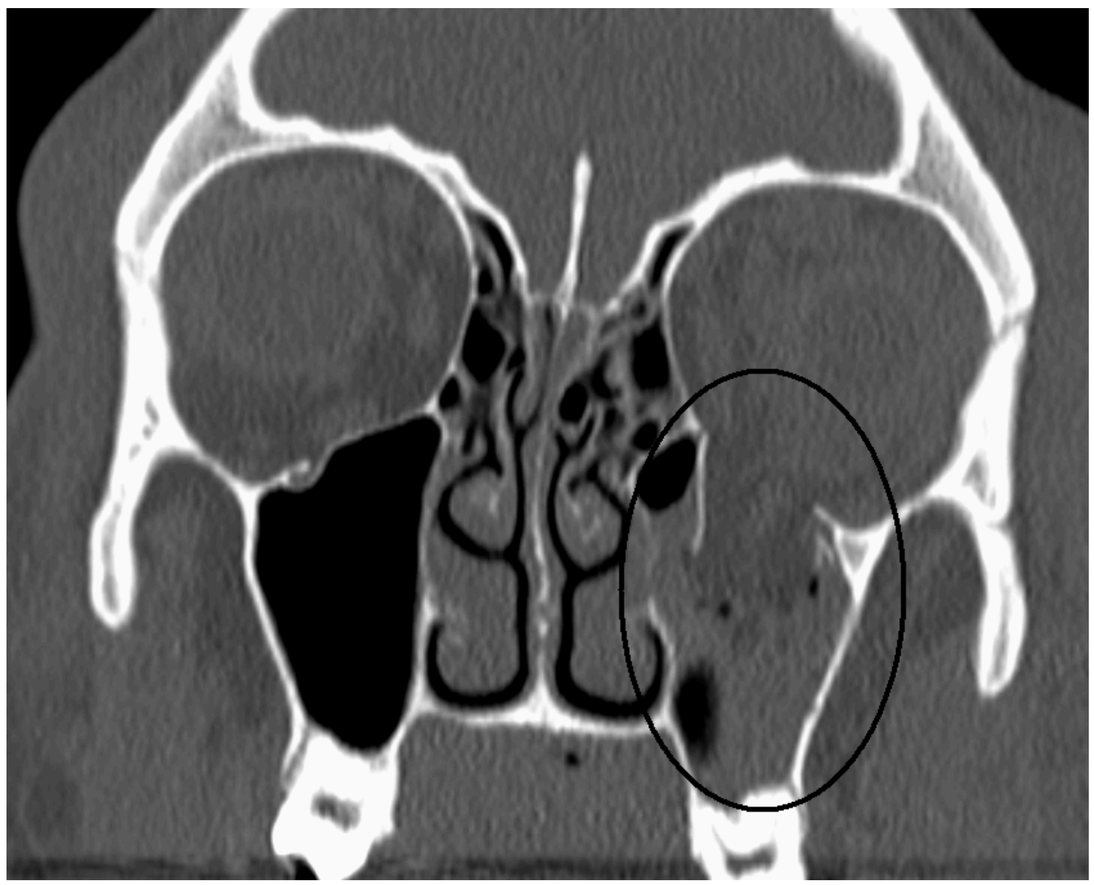
METHODS

Patients

- Diagnosed with emergent orbital fractures
- Underwent orbital fracture reduction
- From 2009 – 2012

Statistical analyses

- Chi-squared and Pearson's test for categorical and Wilcoxon-Mann-Whitney test for continuous patient characteristic variables
- Multiple logistic regressions for categorical and multiple linear regressions for continuous patient outcome variables



RESULTS

Isolated Orbital Fracture

Patient Outcomes	Overall		Weekday admission		Weekend admission		*P**
	n=	**(%)**	**n=**	**(%)**	**n=**	**(%)**	
	4615	**(100)**	**3190**	**(69.1)**	**1425**	**(30.9)**	
In-Hospital Mortality	29	(0.6)	≤10	(0.3)	20	(1.4)	0.380
LOS	4.68	± 8.80	4.30	± 7.05	5.52	± 11.8	0.553
Inpatient Charges	59568	± 106401	53284	± 91098	73484	± 133209	0.096
Complications							
Major	393	(8.5)	222	(7.0)	171	(12.0)	**0.020**
Hemorrhage	343	(7.4)	227	(7.1)	116	(8.1)	0.458
Hematoma	20	(0.4)	20	(0.6)	≤10	(0.0)	-
Wound Disruption	≤10	(0.1)	≤10	(0.1)	≤10	(0.0)	-
Infection	43	(0.9)	39	(1.2)	≤10	(0.3)	**0.002**
Nerve injury/palsy	90	(2.0)	60	(1.9)	30	(2.1)	0.989
Ocular Complications							
Diplopia	337	(7.3)	244	(7.7)	93	(6.5)	0.602
Enophthalmos	99	(2.1)	80	(2.5)	19	(1.3)	**0.034**
Lid retraction	≤10	(0.2)	≤10	(0.3)	≤10	(0.0)	-

LOS, length of stay
*Multiple logistic regressions were performed for categorical variables. Natural log transformation was performed for nonparametric continuous variables. Multiple linear regressions were performed for continuous variables.

Multiple Facial Fractures

Patient Outcomes	Overall		Weekday admission		Weekend admission		*P**
	n=	**(%)**	**n=**	**(%)**	**n=**	**(%)**	
	7310	**(100)**	**4868**	**(66.6)**	**2442**	**(33.4)**	
In-Hospital Mortality	23	(0.3)	14	(0.3)	≤10	(0.4)	0.390
LOS	6.38	± 8.96	6.59	± 9.94	5.98	± 6.56	0.699
Inpatient Charges	93047	± 107663	92288	± 107339	94541	± 108305	0.975
Complications							
Major	749	(10.2)	514	(10.6)	235	(9.6)	0.689
Hemorrhage	253	(3.5)	135	(2.8)	118	(4.8)	**<0.001**
Hematoma	19	(0.3)	≤10	(0.2)	≤10	(0.4)	0.066
Wound Disruption	19	(0.3)	14	(0.3)	≤10	(0.2)	**0.045**
Infection	37	(0.5)	23	(0.5)	14	(0.6)	0.614
Nerve injury/palsy	194	(2.7)	119	(2.4)	75	(3.1)	**0.006**
Ocular Complications							
Diplopia	137	(1.9)	98	(2.0)	39	(1.6)	0.143
Enophthalmos	48	(0.7)	43	(0.9)	≤10	(0.2)	**0.042**
Lid retraction	≤10	(0.1)	≤10	(0.1)	≤10	(0.0)	-
Ectropion	≤10	(0.1)	≤10	(0.0)	≤10	(0.2)	-

LOS, length of stay
*Multiple logistic regressions were performed for categorical variables. Natural log transformation was performed for nonparametric continuous variables. Multiple linear regressions were performed for continuous variables.

CONCLUSION

On weekends, there were higher rates of major complications for isolated orbital fracture patients and higher hemorrhage and nerve injury/palsy rates for multiple facial fracture patients. However, there were no significant differences in mortality, length of stay, or inpatient charges.