

Table S1 Visual acuity conversion chart

Visual acuity	LogMAR Units
No light perception	-4.70
Light perception	-3.70
Hand motion	-2.70
Finger counting	-1.40
20/800	-1.60
20/400	-1.30
20/200	-1.00
20/100	-0.70
20/80	-0.60
20/60	-0.48
20/50	-0.40
20/40	-0.30
20/30	-0.18
20/25	-0.10
20/20	0.00
20/15	0.12

LogMAR: logarithm of minimum angle of resolution

Table S2 Main demographic clinical characteristics of 72 TON patients

Characteristics	Case(n=72)
Injury type	
Car accident	27
Electrical bicycle/bicycle crash	20
High fall	15
Blunt tumble trauma	10
Gender	
Male	58
Female	14
Optical canal fracture	
Image found	37
Surgery found	9
No	26
Orbital fracture	
Yes	66
No	6
Hemorrhage within the ethmoid and/or sphenoid sinus	
Yes	57
No	15
Surgical time	
≤3 days	23
3-7 days	29
>7 days	20

Table S3 Preoperative VA, postoperative VA and IDVA of TON patients

Cases number	Preoperative VA		Postoperative VA		IDVA
	Visual chart	LogMAR Units	Visual chart	LogMAR Units	
28	NLP	-4.70	NLP	-4.70	0
10	NLP	-4.70	FC	-1.40	0.68
3	NLP	-4.70	LP	-2.70	0.41
1	NLP	-4.70	HM	-3.70	0.21
9	LP	-3.70	FC	-1.40	0.60
2	LP	-3.70	HM	-2.70	0.62
2	LP	-3.70	LP	-3.70	0
6	HM	-2.70	FC	-1.40	0.46
2	HM	-2.70	HM	-2.70	0
1	HM	-2.70	0.2	-0.70	0.71
1	HM	-2.70	0.02	-1.70	0.35
2	FC	-1.40	0.1	-1.00	0.26
2	FC	-1.40	0.05	-1.30	0.07
1	FC	-1.40	HM	-1.40	0
1	0.06	-1.20	0.2	-0.70	0.38
1	0.06	-1.20	0.1	-1.00	0.15

VA: Visual acuity

LogMAR: Logarithm of minimum angle of resolution

IDVA: Improvement degree of visual acuity

NLP: No light perception

LP: Light perception

HM: Hand motion

FC: Finger counting

Table S4 Multivariable linear regression analysis to predict postoperative VA

Variable	B	SEM	β	t	P	95%CI
(Constant)	1.106	1.106		1.001	0.321	-1.102~3.315
Gender	0.043	0.364	0.011	0.119	0.906	-0.683~0.770
Age	-0.010	0.009	-0.103	-1.086	0.282	-0.029~0.009
Baseline visual acuity	0.936	0.131	0.656	7.154	<0.001*	0.675~1.197
Optic canal fracture	-0.046	0.300	-0.014	-0.154	0.878	-0.645~0.553
Orbital fracture	0.791	0.544	0.139	1.454	0.151	-0.296~1.878
Hemorrhage within the ethmoid and/or sphenoid sinus	0.301	0.374	0.078	0.806	0.423	-0.445~1.048
Surgical time	-0.549	0.190	-0.269	-2.895	0.005*	-0.929~-0.170

*indicate independent predictor for postoperative VA (P<0.05)

CI: confidence interval

SEM: standard error of the mean

Table S5 Multivariable linear regression analysis to predict IDVA

Variable	B	SEM	β	t	P	95%CI
(Constant)	0.479	0.254		1.889	0.063	-0.028~0.985
Gender	- 0.004	0.083	-0.006	-0.047	0.962	-0.171~0.163
Age	- 0.002	0.002	-0.101	-0.828	0.411	-0.006~0.003
Baseline visual acuity	0.038	0.030	0.148	1.259	0.213	-0.022~0.098
Optic canal fracture	- 0.030	0.069	-0.051	-0.439	0.662	-0.168~0.107
Orbital fracture	0.196	0.125	0.192	1.567	0.122	-0.054~0.445
Hemorrhage within the ethmoid and/or sphenoid sinus	0.071	0.086	0.102	0.823	0.413	-0.101~0.242
Surgical time	- 0.121	0.044	-0.331	-2.776	0.007*	-0.208~-0.034

*indicate independent predictor for IDVA (P<0.05)

CI: confidence interval

SEM: standard error of the mean