Original Article

A Simple Scoring System to Predict Zygomatic Fracture

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Background: In Thailand, many patients with suspected facial fracture are primarily screened and diagnosed by newly graduated, inexperienced general practitioners in rural and suburban hospitals. Some signs, symptoms and radiological findings that are easy to detect may be common among patients with zygomatic fracture. These factors may help in diagnosis of this fracture that could be used by general practitioners to reduce the rate of misdiagnosis.

Objective: The present study aims to find predictive factors for zygomatic fracture diagnosis and develop a scoring system that can assist in diagnosis.

Materials and Methods: Medical records of patients older than 15 years with facial fracture clinic seen at Siriraj hospital between 1 January 2007 and December 2017 were reviewed. Data on demographics, associated injury, type of facial fracture, signs & symptoms, and radiologic findings were extracted and recorded in predesigned case record form. The results of this multivariate logistic regression were used to develop score to predict Zygomatic fracture.

Results: A total of 794 patients with 901 bone fractures met the inclusion criteria were included in the present study. There were 124 patients with zygomatic fracture. Five factors (Infraorbital nerve numbness, periorbital ecchymosis, point of tenderness, discontinuity of inferior orbital rim, and haziness of maxillary sinus from plain x-ray) were significantly predictive of zygomatic fracture from multivariate analysis and we develop a scoring system to predict zygomatic fracture by them.

Conclusion: Infraorbital nerve numbness, periorbital ecchymosis, point of tenderness, discontinuity of inferior orbital rim, and haziness in maxillary sinus are significant predictors of zygomatic fracture. A scoring system using those factors is proposed in the present study.

Keywords: Zygomatic fracture, Scoring system

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Due to the lack of specialists in Thailand, many patients with suspected facial fracture are primarily screened and diagnosed by newly graduated, inexperienced general practitioners in rural and suburban hospitals. As signs, symptoms and radiologic findings of facial fractures are sometimes not evident, diagnosis of this condition is often challenging, leading to misdiagnosis and loss of opportunity to be cared for specialists.

Previous studies have described the impacts of Zygomatic bone fracture on a patient's quality of life. This fracture can cause diplopia, loss of chewing ability[1], limited mouth opening[2-4], loss of sensation on some area of the face, and facial deformity[5,6]. Some signs, symptoms and radiological findings that are easy to detect may be common among patients with zygomatic fracture. These factors may also have predictive power for diagnosis of this fracture that could be used by general practitioners to reduce the rate of misdiagnosis.

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Materials and Methods

This is a retrospective descriptive study. Medical records of patients older than 15 years with facial fracture clinic seen at Siriraj Hospital between 1 January 2007 and December 2017 were reviewed. Data on demographics, associated injury, type of facial fracture, signs & symptoms, and radiologic findings were extracted and recorded in predesigned case record form.

Data were analyzed using SPSS version 23.0. The frequency of each variable such as age, sex, associated injury, type of facial fracture was calculated. Univariate logistic regression analysis was used to find variables that are associated with zygomatic bone fracture. These variables included infraorbital nerve numbness, epistaxis, periorbital ecchymosis, diplopia, trismus, stepping on palpation at inferior or lateral orbital rim, and point of tenderness. Variables with p-value <0.05 were included for subsequent multivariate logistic regression analysis. The results of this multivariate logistic regression were used to develop score to predict zygomatic fracture. The present study was approved by the Siriraj Institutational Review Board (151/2561(EC1)).

Results

Patients demographic data and fracture prevalence

A total of 794 patients with 901 bone fractures met the inclusion criteria and were included in the present

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study. Of all patients, 569 (71.7%) were male with the mean age at diagnosis of 36.8 years (range 15.0 to 97.0 years). Nasal fracture (354 cases, 44.6%) was the most common facial fracture, followed by mandibular fracture (181 cases, 22.8%), zygomatic fracture (124 cases, 15.6%), and maxillary fracture (115 cases, 14.5%) (Table 1). It should be noted that the total percentage of fractures was higher than 100% because some patients had more than one facial fracture.

Of all the patients with zygomatic fracture, 104 were male (83.9%) and 20 were female (16.1%) with the mean age of 44.31 years. Types of zygomatic bone fracture included trimalar 112 cases of trimalar (90.3%) and 12 cases of isolated zygomatic arch (9.7%). Zygomatic fracture occurred on the left in 67 cases (54%) and on the right in 57 cases (45.9%) (Table 2).

The most common associated injuries in zygomatic fracture patients were head injury reported (48.4%), followed by eye injury (37.1%), while 34.7% had no associated injury (Table 3).

There were 94 patients with isolated zygomatic fracture, accounting for 75.8% of all zygomatic fracture patients. Mandible fracture (10 cases; 8.0%) and maxillary fracture (9 cases; 7.2%) were the two most common associated facial fractures (Figure 1).

Nine factors were analyzed in the univariate analysis to find their association with zygomatic bone fracture. Results are shown in Table 4.

Seven factors were subsequently analyzed in the multivariate analysis (Table 5). Only three factors, including 2/3 to 3/3 point of tenderness (OR = 5.03), Discontinued inferior orbital rim (OR = 7.43), and bilateral haziness in the maxillary sinus (OR = 0.25) were significantly predictive of zygomatic fracture. Please note that trismus and epistaxis were excluded from the multivariate analysis given their negative odds ratio in the univariate analysis.

Table 1. Location of facial fracture in this study (n = 794)

Type of facial fracture	n
Frontal	21
Nasal	354
Maxillary	115
Mandible	181
Zygoma	124
Floor of orbit	78
Supra orbital rim	9
Medial wall of orbit	8
Inferior orbital rim	9
Lateral wall of orbit	2
Total	901

Table 2. Type and side of Zygomatic bone fracture in this study (n = 124)

Type of zygoma	n (%)
Trimalar	112 (90.3)
Arch	12 (9.7)
Side of fracture	
Left	67 (54.0)
Right	57 (45.9)

Discussion

The high prevalence of maxillo-facial fracture in males found in this study is similar to the observations of prior studies[7-10]. More frequent engagement in outdoor activities violent interactions among males are

Table 3. Frequency for associated injury in Zygomatic bone fractures patients (n = 124)

Associated injury	n (%)
Head injury	60 (48.4)
Chest injury	10 (8.0)
Orthopedic fracture	12 (9.7)
Eye injury	46 (37.1)
Abdominal injury	4 (3.2)
None	43 (34.7)

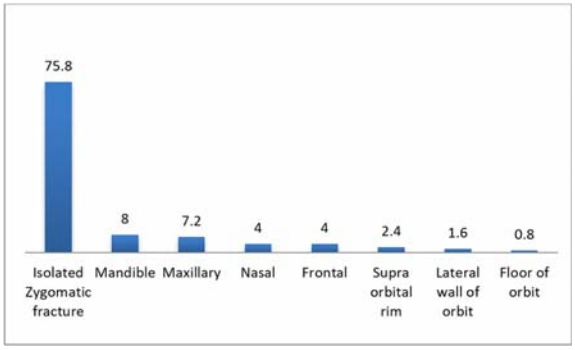

Figure 1. Frequency of Fractures Associated with Zygomatic.

Table 4. Frequency of type of facial fracture in Zygomatic fracture patients

	Frequency (%)
Zygoma	94 (75.8)
Zygoma/mandibular	6 (4.8)
Zygoma/mandible/floor of orbit	1 (0.8)
Zygoma/frontal/lateral wall orbit	1 (0.8)
Zygoma/maxillary	6 (4.8)
Zygoma/nasal	5 (4.0)
Zygoma/lateral wall orbit	1 (0.8)
Zygoma/maxillary/mandibular	3 (2.4)
Zygoma/supra orbital rim	3 (2.4)
Zygoma/frontal	4 (3.2)

Table 5. Associated risk factors for Zygoma

Variables	Zygoma (n = 124)	Non-zygoma (n = 670)	Crude OR (95% CI)	*p*-value
Infraorbital nerve numbness				
Numbness	65 (52.4%)	55 (8.2%)	12.32 (7.67, 19.74)	<0.001*
Not numbness	54 (43.5%)	607 (90.6%)	0.08 (0.05, 0.13)	<0.001*
Can't evaluate	5 (4%)	8 (1.2%)	3.48 (0.88, 12.27)	0.022*
Epistaxis				
Epistaxis	18 (14.5%)	231 (34.5%)	0.32 (0.18, 0.55)	<0.001*
Not epistaxis	106 (85.5%)	439 (65.5%)	3.10 (1.81, 5.56)	<0.001*
Periorbital ecchymosis				
Ecchymosis	93 (75%)	168 (25.1%)	8.96 (5.66, 14.42)	<0.001*
No ecchymosis	31 (25%)	502 (74.9%)	0.11 (0.07, 0.18)	<0.001*
Diplopia				
Diplopia	19 (15.3%)	46 (6.9%)	2.45 (1.3, 4.47)	0.002*
No diplopia	100 (80.6%)	616 (91.9%)	0.37 (0.21, 0.65)	<0.001*
Can't evaluate	5 (4%)	8 (1.2%)	3.48 (0.88, 12.27)	0.022*
Trismus				
Trismus	10 (8.1%)	59 (8.8%)	0.91 (0.4, 1.86)	0.788
Not trismus	109 (87.9%)	603 (90%)	0.81 (0.44, 1.58)	0.481
Can't evaluate	5 (4%)	8 (1.2%)	3.48 (0.88, 12.27)	0.022*
Stepping on inferior or lateral orbital rim				
Stepping	61 (49.2%)	55 (8.2%)	10.83 (6.74, 17.34)	<0.001*
Non stepping	63 (50.8%)	615 (91.8%)	0.09 (0.06, 0.15)	<0.001*
Point of tenderness				
zf*	2 (1.6%)	7 (1%)	1.55 (0.16, 8.27)	0.583
zm*	53 (42.7%)	105 (15.7%)	4.02 (2.6, 6.18)	<0.001*
zt*	10 (8.1%)	8 (1.2%)	7.26 (2.51, 21.57)	<0.001*
zf/zm	16 (12.9%)	8 (1.2%)	12.26 (4.79, 33.75)	<0.001*
zf/zt	0 (0%)	1 (0.1%)	0 (0, 1)	0.667
zm/zt	13 (10.5%)	1 (0.1%)	78.35 (11.46, 3,333.78)	<0.001*
zf/zm/zt	10 (8.1%)	4 (0.6%)	14.61 (4.11, 64.53)	<0.001*
None	15 (12.1%)	528 (78.8%)	0.04 (0.02, 0.07)	<0.001*
Can't evaluate	5 (4%)	8 (1.2%)	3.48 (0.88, 12.27)	0.022*
Discontinuity of inferior orbital rim				
Discontinue	65 (52.4%)	47 (7%)	14.6 (8.97, 23.75)	<0.001*
Non discontinue	21 (16.9%)	242 (36.1%)	0.36 (0.21, 0.6)	<0.001*
Not have film	38 (30.6%)	381 (56.9%)	0.34 (0.22, 0.51)	<0.001*
Haziness of maxillary sinus				
Unilateral haziness	62 (50%)	59 (8.8%)	10.36 (6.49, 16.48)	<0.001*
Bilateral haziness	5 (4%)	32 (4.8%)	0.84 (0.25, 2.23)	0.718
Non haziness	19 (15.3%)	198 (29.6%)	0.43 (0.24, 0.73)	0.001*
Not have film	38 (30.6%)	381 (56.9%)	0.34 (0.22, 0.51)	<0.001*

The value presented as number (%). The *p*-value corresponds to Logistic regression analysis.
zf = Zygomaticofrontal area, zm = Zygomaticomaxillary area, zt = Zygomaticotemporal area

probably the explanations.

The prevalence of zygomatic fracture in this cohort was 15.6% The previously reported prevalence varies considerably across the studies[13-16,18], possibly due to differences in study design, level of trauma center, hospital facilities, background population, and public health system.

The most common associated facial injuries with zygomatic fracture were maxillary and mandible fracture 4.8%, similar to the observation by Hassan Mohajerani et al[9].

The most common symptoms found in zygomatic bone fracture patients were periorbital ecchymosis, infraorbital nerve numbness, stepping, diplopia, and epistaxis. The finding is in line with previous study by Mueller CK et al[17], in which periorbital hematoma and edema were found in 76.6% and 31.9% of their zygomaticomaxillary complex patients.

The factors that were statistically significant in the multivariate analysis included infraorbital nerve numbness, stepping, periorbital ecchymosis, and diplopia.

Therefore, a higher degree of suspicion for zygomatic bone fracture is warranted for patients who have at least one of those symptoms. On the other hand, suspicion may be lower among patients with epistaxis.

ZM 92 patients (74.19%) is the most common

position of point of tenderness followed by, ZF 28 patients (22.58%), and ZT 33 patients (26.61%).

Radiological finding factor

Discontinued inferior orbital rim is a significant predictor of zygomatic fracture (OR = 14.6). This is also true for unilateral haziness in maxillary sinus (OR = 10.36). No significant association was found with bilateral haziness in maxillary sinus. However, non-haziness in maxillary sinus has significant inverse relationship with zygomatic fracture (OR = 0.43).

Five factors that mostly correlated with zygomatic fracture from multivariate analysis were used to develop scores to predict zygomatic bone fracture (Table 6).

Our scoring system gives the possibility of score range from -1 to 20. Using ROC analysis, the cut-off value of 9 points has a sensitivity of 75% and specificity of 92%. With its high accuracy at 88.1%, utilization of this scoring system may help general practitioners identifying more cases of zygomatic fracture and reducing the cases of misdiagnosis.

Table 6. Multivariate analysis (n = 371)

Variables	Adjusted OR (95% CI)	*p*-value
Infraorbital nerve numbness		
Numbness	1.67 (0.77, 3.63)	0.199
Not numbness	Reference	1
Periorbital ecchymosis		
Ecchymosis	1.92 (0.95, 3.86)	0.068
No ecchymosis	Reference	1
Diplopia		
Diplopia	0.99 (0.41, 2.36)	0.978
No diplopia	Reference	1
Stepping on inferior or lateral orbital rim		
Stepping	1.29 (0.58, 2.88)	0.536
Non stepping	Reference	1
Point of tenderness		
Non to 1/3	Reference	1
2/3 to 3/3	4.94 (1.79, 13.63)	0.002*
Discontinuity of inferior orbital rim		
Discontinue	7.75 (3.25, 18.48)	<0.001*
Non discontinue	Reference	1
Haziness of maxillary sinus		
Unilateral haziness	1.99 (0.87, 4.57)	0.103
Bilateral haziness	0.23 (0.06, 0.88)	0.032*
Non haziness	Reference	1

Value presented as Odds ratio (95% CI).
The *p*-value corresponds to Logistic regression analysis.

Limitation

The scoring system still needs a validation study. Also, it is generated from retrospective medical record review of a single trauma center. Future studies using data from multiple sources are required to improve its generalizability.

Conclusion

Infraorbital nerve numbness, periorbital ecchymosis, point of tenderness, discontinuity of inferior orbital rim, and haziness in maxillary sinus are significant predictors of zygomatic fracture. A scoring system using those factors is proposed in the present study.

What is already known for this topic?

Clinical findings of fundamental nerve numbness, epistaxis, periorbital ecchymosis, diplopia, trismus, stepping on inferior or lateral orbital rim, tenderness at ZF/ZM/ zygomatic arch and radiological finding of haziness in maxillary sinus has been described to be associated with Zygomatic bone fracture.

What this study adds?

Strengthened association of common findings to zygomatic facture scoring system in an effort to predict zygomatic fracture.

Table 7. Scoring system for predicting Zygomatic fracture (n = 371)

Variables	Score (20)
Infraorbital nerve numbness	
Numbness	2
Not numbness	0
Periorbital ecchymosis	
Ecchymosis	2
No ecchymosis	0
Point of tenderness	
Non to 1/3	0
2/3 to 3/3	5
Discontinuity of inferior orbital rim	
Discontinue	9
Non discontinue	0
Haziness of maxillary sinus	
Unilateral haziness	2
Both haziness	-1
Non haziness	0

The value presented as odds ratio (95% CI).
The *p*-value corresponds to Logistic regression analysis.
* Point of tenderness including 1.ZF 2.ZM 3.ZT

Table 8. ROC cut off score: predictive for Zygoma

Cut off score	Sensitivity	Specificity	PPV	NPV	Accuracy
9	75%	92%	73.3%	92.6%	88.1%

Potential conflicts of interest

The authors declare no conflict of interest.

References

1. Ribeiro MC, Regalo SC, Pepato AO, Siessere S, de Souza LG, Sverzut CE, et al. Bite force, electromyography, and mandible mobility during the 6-month period after surgical treatment for isolated fractures of the zygomatico-orbital complex. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011;111:e1-7.
2. Boffano P, Roccia F, Gallesio C, Karagozoglu KH, Forouzanfar T. Infraorbital nerve posttraumatic deficit and displaced zygomatic fractures: a double-center study. J Craniofac Surg 2013;24:2044-6.
3. Sakavicius D, Juodzbalys G, Kubilius R, Sabalys GP. Investigation of infraorbital nerve injury following zygomaticomaxillary complex fractures. J Oral Rehabil 2008;35:903-16.
4. Fogaca WC, Fereirra MC, Dellon AL. Infraorbital nerve injury associated with zygoma fractures: documentation with neurosensory testing. Plast Reconstr Surg 2004;113:834-8.
5. Kaukola L, Snall J, Roine R, Sintonen H, Thoren H. Health-related quality of life of patients with zygomatic fracture. Med Oral Patol Oral Cir Bucal 2017;22:e636-42.
6. Levine E, Degutis L, Pruzinsky T, Shin J, Persing JA. Quality of life and facial trauma: psychological and body image effects. Ann Plast Surg 2005;54:502-10.
7. Hashim H, Iqbal S. Motorcycle accident is the main cause of maxillofacial injuries in the Penang Mainland, Malaysia. Dent Traumatol 2011;27:19-22.
8. Elhammali N, Bremerich A, Rustemeyer J. Demographical and clinical aspects of sports-related maxillofacial and skull base fractures in hospitalized patients. Int J Oral Maxillofac Surg 2010;39:857-62.
9. Leles JL, dos Santos EJ, Jorge FD, da Silva ET, Leles CR. Risk factors for maxillofacial injuries in a Brazilian emergency hospital sample. J Appl Oral Sci 2010;18:23-9.
10. Kamulegeya A, Lakor F, Kabenge K. Oral maxillofacial fractures seen at a Ugandan tertiary hospital: a six-month prospective study. Clinics (Sao Paulo) 2009;64:843-8.
11. Mohajerani H, Sadeghi N, Montazemi T, Montazemi A. Zygomatic fractures: A 10-year retrospective epidemiological study. Avicenna J Dent Res 2017;9:e60705.
12. Farias IPSE, Bernardino IM, Nobrega LMD, Grempel RG, D'Avila S. Maxillofacial trauma, etiology and profile of patients: an exploratory study. Acta Ortop Bras 2017;25:258-61.
13. Agarwal P, Mehrotra D, Agarwal R, Kumar S, Pandey R. Patterns of maxillofacial fractures in Uttar Pradesh, India. Craniomaxillofac Trauma Reconstr 2017;10:48-55.
14. Batista AM, Ferreira FO, Marques LS, Ramos-Jorge ML, Ferreira MC. Risk factors associated with facial fractures. Braz Oral Res 2012;26:119-25.
15. Blumer M, Kumalic S, Gander T, Lanzer M, Rostetter C, Rucker M, et al. Retrospective analysis of 471 surgically treated zygomaticomaxillary complex fractures. J Craniomaxillofac Surg 2018;46:269-73.
16. Timashpolsky A, Dagum AB, Sayeed SM, Romeiser JL, Rosenfeld EA, Conkling N. A prospective analysis of physical examination findings in the diagnosis of facial fractures: Determining predictive value. Plast Surg (Oakv) 2016;24:73-9.
17. Mueller CK, Zeiss F, Mtsariashvili M, Thorwarth M, Schultze-Mosgau S. Correlation between clinical findings and CT-measured displacement in patients with fractures of the zygomaticomaxillary complex. J Craniomaxillofac Surg 2012;40:e93-8.
18. Park KP, Lim SU, Kim JH, Chun WB, Shin DW, Kim JY, et al. Fracture patterns in the maxillofacial region: a four-year retrospective study. J Korean Assoc Oral Maxillofac Surg 2015;41:306-16.

การวินิจฉัยภาวะกระดูกไซโกมาหักด้วยระบบการให้คะแนนการวินิจฉัยอย่างง่าย

ชิตพงศ์ ศิริทองถาวร, ธิติพัทธ์ พัฒนศรี

ภูมิหลัง: ในประเทศไทย ผู้ป่วยจำนวนมากที่ประสบอุบัติเหตุและสงสัยว่ามีภาวะกระดูกใบหน้าหัก มักจะได้รับการตรวจวินิจฉัยโดยแพทย์ใช้ทุนหรือแพทย์เวชปฏิบัติทั่วไปตามโรงพยาบาลชุมชนเป็นด่านแรก ซึ่งมักขาดประสบการณ์จึงอาจวินิจฉัยผิดพลาดได้ โดยผู้ป่วยที่มีภาวะกระดูกไซโกมาหัก มักจะมีปัจจัยที่พบได้บ่อย ได้แก่ อาการแสดง การตรวจร่างกายและภาพเอกซเรย์ ดังนั้นปัจจัยเหล่านี้อาจช่วยแพทย์เวชปฏิบัติทั่วไปวินิจฉัยภาวะกระดูกไซโกมาหักได้ถูกต้องมากยิ่งขึ้น

วัตถุประสงค์: เพื่อหาปัจจัยที่มีผลต่อการวินิจฉัยกระดูกไซโกมาหักและนำมาสร้างระบบการให้คะแนนเพื่อช่วยในการวินิจฉัยภาวะดังกล่าว

วัสดุและวิธีการ: ข้อมูลด้าน อายุ เพศ การบาดเจ็บที่พบร่วมด้วย ชนิดของกระดูกใบหน้าหัก อาการแสดง การตรวจร่างกาย และภาพเอกซเรย์ จากแฟ้มเวชระเบียนผู้ป่วยของผู้ป่วยที่มีอายุตั้งแต่ 15 ปีขึ้นไป ที่มีภาวะกระดูกใบหน้าหัก และเข้าการรักษาที่คลินิกกระดูกใบหน้าหักโรงพยาบาลศิริราช ตั้งแต่ วันที่ 1 มกราคม พ.ศ. 2550 ถึง วันที่ 31 ธันวาคม พ.ศ. 2560 ถูกนำมาทบทวน และบันทึกข้อมูลใหม่ในชุดเก็บข้อมูลที่เตรียมไว้ จากนั้นนำมาวิเคราะห์แบบถดถอย เพื่อหาความสัมพันธ์ และสร้างคะแนนเพื่อการวินิจฉัยภาวะกระดูกไซโกมาหัก

ผลการศึกษา: การศึกษานี้มีจำนวน ผู้ป่วยทั้งหมด 794 คน มีกระดูกหักทั้งหมด 901 ชิ้น ภายหลังผ่านเกณฑ์คัดเลือกผู้ป่วย จึงมีผู้ป่วยที่มีภาวะกระดูกไซโกมาหัก 124 คน โดยจากการศึกษาพบว่ามี 5 ปัจจัย ที่มีนัยสำคัญจากการวิเคราะห์พหุตัวแปรต่อการวินิจฉัยภาวะกระดูกไซโกมาหัก ได้แก่ ภาวะชาบริเวณเส้นประสาทอินฟราออบิทัล, ภาวะรอบดวงตาฟกช้ำ, ตำแหน่งของจุดกดเจ็บ, ความไม่ต่อเนื่องของกระดูกขอบตาล่างจากภาพเอกซเรย์, การพบฝ้าขาวในโพรงอากาศบริเวณโหนกแก้มจากภาพเอกซเรย์ โดยปัจจัยทั้งหมดนี้ได้ถูกนำไปสร้างเป็นระบบการให้คะแนนเพื่อการวินิจฉัยภาวะกระดูกไซโกมาหักด้วย

สรุป: ภาวะชาบริเวณเส้นประสาทอินฟราออบิทัล, ภาวะรอบดวงตาฟกช้ำ, ตำแหน่งของจุดกดเจ็บ, การพบเห็นความไม่ต่อเนื่องของกระดูกขอบตาล่างจากภาพเอกซเรย์, การพบฝ้าขาวในโพรงอากาศบริเวณโหนกแก้มจากภาพเอกซเรย์ เป็นปัจจัยที่มีนัยสำคัญในการวินิจฉัยภาวะกระดูกไซโกมาหัก ระบบการให้คะแนนที่พัฒนาขึ้นจากปัจจัยเหล่านี้จะช่วยในการวินิจฉัยภาวะกระดูกไซโกมาหักได้ดียิ่งขึ้น