



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research
Vol. 12, Issue, 04, pp.10978-10980, April, 2020

DOI: <https://doi.org/10.24941/ijcr.38352.04.2020>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

RESEARCH ARTICLE

SCAPULA FRACTURES A TWENTY FIVE YEAR EXPERIENCE

Efstathios K. Metaxas^{1,*}, Konstantinos Tzelepis², Ioannis Stamatatos³, Stavroula Amanetopoulou⁴, Dimitrios Tsiftsis⁴, Aristotelis K. Stefoudis⁵, Damon Charalampides⁵, Dimitrios Klapsakis⁵, Dimitrios Paschalinos⁶, Symeon Patsos⁶, Lazaros Tsiatsios⁶, Fragkiskos Tzagkarakis⁶ and Dionysios Louverdis⁵

¹Department of Thoracic Surgery, General Hospital of Nicaea-Piraeus, Greece

²Department of Urology, General Hospital of Nicaea-Piraeus, Greece

³Department of Vascular Surgery, General Hospital of Nicaea-Piraeus, Greece

⁴Department of Emergency, General Hospital of Nicaea-Piraeus, Greece

⁵Department of Ortopaedic Surgery, General Hospital of Nicaea-Piraeus, Greece

⁶Department of General Surgery, General Hospital of Nicaea-Piraeus, Greece

ARTICLE INFO

Article History:

Received 24th January, 2020

Received in revised form

15th February, 2020

Accepted 08th March, 2020

Published online 30th April, 2020

Key Words:

Scapula Fracture,
Acromion, Glenoid.

ABSTRACT

Background: To determine the importance of the scapula bone fractures upon the causes, sex, age groups, associated injuries, morbidity and mortality. **Methods:** In a 25 year period a retrospective study took place. One hundred and eight (108) patients diagnosed with scapula fracture in General Hospital of Nicaea-Piraeus Agios Panteleimon Thoracic and Orthopaedic Surgery Department. **Results:** Between the years 1995 to 2020(25years) 108 patients diagnosed with scapula bone fracture, 81 male (75%) and 27 female (25%), aged 19-91 years mean age 34 years. **Aetiologic factor:** Traffic accident 81 (75%), fall from high 24 (22,22%) and Gunshot injuries 3(2,777%) patients. **Associated injuries:** Rib fractures 85, First and Second rib fractures 31, Sternal fractures 17, Flail chest 29, Pneumohaemothorax 81, Haemopericardium 2, Pneumomesopneumonium 1, Lung Contusion 65, Diaphragmatic ruptures 3, Kidney injury-Nephrectomy 2, Haemoperitoneum 14, Head injuries 34, Vertebral fractures 37, Pelvis fractures 8, Upper extremities fractures 67, Lower extremities fractures 13. Surgical treatment of the scapula required 9 patients, all male. Mortality rate raised 3,703%. Four patients all male and octogenarians. **Conclusion:** Most of the patients underwent chest drain insertion for Pneumohaemothorax. Otherwise conservative treatment for the majority of the patients, analgesic and anti-inflammatory medication, nebulizers, low molecular heparin, monitoring, physiotherapy and early mobilization. A simple chest radiography is standard for the diagnosis, but computer tomography is considered gold standard. Surgical treatment required approx. 1% of the population study. All for glenoid scapula fractures. Attention should be given to collaboration with other specialties in the hospital, like, general surgeons, neurosurgeons, orthopedics and anesthesiologists for the proper management when intervention or operation is required.

Copyright © 2020, Efstathios K. Metaxas et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Efstathios K. Metaxas, Konstantinos Tzelepis, Ioannis Stamatatos, Stavroula Amanetopoulou et al. 2020. "Scapula fractures a twenty five year experience", International Journal of Current Research. 12. (04). 10978-10980.

INTRODUCTION

Scapula fractures are not seen very often. When this happens, special attention should be given because of the comorbidities. The aim of this study was to determine the importance of the scapula bone fractures upon the causes, sex, age groups, associated injuries, morbidity and mortality.

MATERIALS AND METHODS

In a 25 year period a retrospective study took place. One hundred and eight (108) patients diagnosed with scapula bone fracture, 81 male and 27 female, aged 19-91 years in General Hospital of Nicaea-Piraeus Agios Panteleimon Thoracic and Orthopaedic Surgery Department

RESULTS

Between the years 1995 to 2020(25years) 108 patients diagnosed with scapula bone fracture, 81 male (75%) and 27 female (25%), aged 19-91 years mean age 34 years.

*Corresponding author: Efstathios K. Metaxas, Department of Thoracic Surgery, General Hospital of Nicaea-Piraeus, Greece.



Figure 1. Left scapula fracture

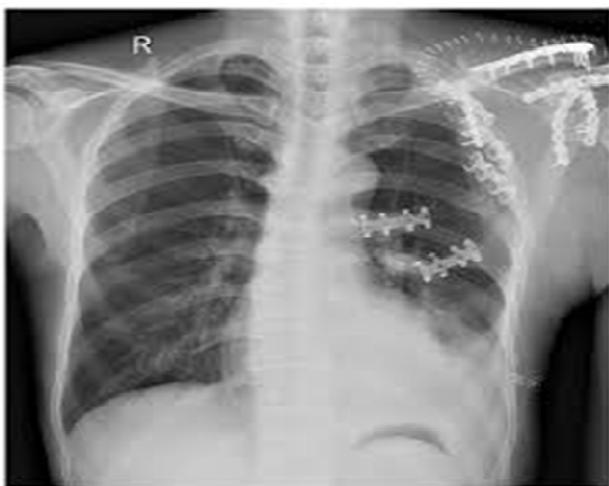


Figure 2. Post scapula fracture, rib and clavicle repair.



Figure 3. Post right scapula fracture and right humeral neck repair

Table 1. De Cloux and Lemerle classification

SCAPULAR FRACTURES
<i>De Cloux and Lemerle classification</i>
Type 1: Scapula body fractures
Type 2: Apophyseal fractures (coracoid, acromion
Type 3: Fractures through the supero-lateral angle of scapula

Table 2. Mayo classification

SCAPULAR FRACTURES Glenoid fractures: Mayo classification
<i>Mayo modification of the Ideberg classification</i>
Type 1: anterior glenoid rim fracture
1A: fracture fragment 5mm or less 1B: fracture fragment > 5mm
Type 2: Inferior glenoid fracture involving part of the neck
Type 3: Superior glenoid fracture extending through base of coracoid
Type 4: Horizontal fracture involving scapular neck and body fracture runs below the spine of scapula
Type 5: Type 4 fracture with complete or incomplete neck fracture

Surgical treatment of the scapula required 9 patients, all male. Multi trauma patients required intensive care unit and required a longer stay in the hospital. Mortality rate raised 3,703 %. Four patients all male and octogenarians.

DISCUSSION

The scapula is sturdy and located in a protected place, so it rarely breaks- scapular fracture. When it does, it is an indication that the individual was subjected to a considerable amount of force and that severe chest trauma may be present¹. This pain is often immediate localized to the upper back, across the shoulder blade, and/or at the top of the shoulder. It is also aggravated by arm movement or taking deep breaths, because chest wall movement may cause the fractured scapula to move (Bartoniček, 2018). A simple chest radiography is standard for the diagnosis (Armitage et al., 2009; Cole, 2012), Computer tomography is considered gold standard because can diagnose other associated injuries (Armitage et al., 2009; Cole, 2012). The treatment most of the time is conservative (Bartoniček, 2018; Efstathios, 2019; Bozkurt, 2006). Surgical treatment is rare. Treatment involves immobilization with a sling or a shoulder immobilizer, pain medications-nerve block, nebulizers, early immobilization, low molecular heparin (Metaxas, 2019). The sling is usually kept for comfort for the first two weeks with subsequent increase of the shoulder's range of motion. Most scapular fractures heal completely by 6 weeks, and all external support is discontinued at this time. Progressive use of the upper extremity is encouraged. Physiotherapy exercises required until full shoulder mobility is recovered (Bozkurt, 2006). Surgical treatment is rare (Bozkurt, 2006; Jones, 2009). The fractured scapula blade does not require surgical intervention. Occasionally acromion scapula fractures may require surgical intervention very rare when there is instability and coexist clavicle fracture (Bozkurt, 2006; Jones, 2009; Lin, 2015). Most of the intervention to scapula fracture was for the glenoid fractures (Judet operation). All operations underwent in Orthopaedic department were for glenoid scapula fractures (Jones, 2009; Lin, 2015). Some airlines require to wait 24 hours after a plaster cast has been fitted for flights less than 2 hours, and 48 hours for longer flights. This is because there's a risk of swelling after a plaster cast is first fitted, which can affect circulation. There are a few classifications about scapular fractures. DeCloux and Lemerle classification (DeCloux, 1956), OTA Scapula fracture Classification System,

Aetiologic factor: Traffic accident reported 81 (75%) patients, fall from high 24(22,22%) patients and Gunshot injuries 3 (2,777%) patients. Associated injuries: Rib fractures 85, First and Second rib fractures 31, Sternal fractures 17, Flail chest 29, Pneumohaemothorax 81, Haemopericardium 2, Pneumomesopmeumonium 1, Lung Contusion 65, Diaphragmatic ruptures 3, Nephrectomy 2, Haemoperitoneum 14, Head injuries 34, Vertebral fractures 37, Pelvis fractures 8, Upper extremities fractures 67, Lower extremities fractures 13.

Euler and Rüedi classification (Euler, 1996), Glenoid fractures: Mayo classification, Mayo modification of the Ideberg classification see table 1&2.

Conclusion

Most of the patients underwent chest drain insertion for Pneumohaemothorax. Otherwise conservative treatment for the majority of the patients, analgesic and anti-inflammatory medication, nebulizers, low molecular heparin, monitoring, physiotherapy and early mobilization. A simple chest radiography is standard for the diagnosis, but computer tomography is considered gold standard. Surgical treatment required approx.1% of the population study. All for glenoid scapula fractures. Attention should be given to collaboration with other specialties in the hospital, like, general surgeons, neurosurgeons, orthopedics and anesthesiologists for the proper management when intervention or operation is required (Efstathios, 2006; Metaxas, 2014). The patient's hospital stay and the results of the treatment were determined mostly by the gravity of the associated injuries and the early diagnosis and management. There is no doubt about scapula fractures and associated injuries that the successful management needs to be done by a multidisciplinary trained and experienced team (Efstathios, 2006; Metaxas, 2014).

REFERENCES

- Annali Italiani Di Chirurgia 2006;77:379-383
- Armitage BM, Wijdicks CA, Tarkin IS. Mapping of scapular fractures with three-dimensional computed tomography. *J Bone Joint Surg Am.* 2009;91-A:2222-8. doi: 10.2106/JBJS.H.00881.
- Bartoniček J, Klika D, Tuček M. Floating shoulder – myths and reality. *J Bone Joint Surg Rew.* 2018;6:e5. doi: 10.2106/JBJS.RVW.17.00198. 9.
- Bozkurt M, Can F, Kirdemir V. Conservative treatment of scapula neck fracture: the effect of stability and glenopolar angle on clinical outcome. *Injury* 2006;36:1176–81. doi:10.1016/j.injury.2004.09.013.
- Cole PA, Gauger EM, Herrera DA. Radiographic follow-up of 84 operatively treated scapula neck and body fractures. *Injury* 2012;43:327–33. doi: 10.1016/j.injury.2011.09.029.
- DeCloux MP, Lemerle, Scapular fractures: DeCloux and Lemerle classification DeCloux MP, Lemerle, *Omoplate. Lille Chir:* 215-227, 1956
- Efstathios K. Metaxas, Ioannis Stamatatos, et al. A two hospital experience in nerve block. *International Journal of Medical and Health Research Vol 5 Issue11; November 2019; Page No 134-1368.*
- Efstathios. K. Metaxas, Nicolas Condilis et al. Sternal fracture with or without associated injuries. Assessment of the difference in the diagnosis and complications. Eighteen years of experience.
- Euler, Rüedi Scapular fractures: Euler and Rüedi classification In: *Schulterchirurgie.* Edited by Habermeyer P, 261-272 ,1996
- Jones CB, Cornelius JP, Sietsema DL. Modified Judet approach and mini fragment fixation of scapular body and glenoid neck fractures. *J Orthop Trauma* 2009;23:558–64. doi:10.1097/BOT.0b013e3181a18216.
- Lin TL, Li YF, Hsu CJ. Clinical outcome and radiographic change of ipsilateral scapular neck and clavicular shaft fracture: comparison of operation and conservative treatment. *J Orthopaedic Surg Res.*2015;10:9–16. doi: 10.1186/s13018-014-0141-0.
- Metaxas, E.K., Moustardas, M.P., Gerazounis, M.I. 2014. Rib Fractures: Retrospective Analysis of 1428 Cases. *Surgical Chronicles Vol 19, Issue 1, Jan-Mar 2014.*
