CASE REPORT

Comolli's sign as a reliable indicator of high energy chest injury: a case report

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ABSTRACT

Comolli's point is described as a typical triangular cushion-shaped swelling-hematoma, which overlaps the outline of the scapula in cases of fracture of the scapula. Fracture of the scapula is uncommon and accounts for 3% to 5% of shoulder fractures and 0.4% to 1% of all body fractures. During impact it is protected by the large surrounding muscle mass and its movement to the chest wall dissipating the force and energy of the impact. Fracture of the scapula is primarily the result of high-energy trauma. We describe a case of post-traffic thoracic trauma with a positive Comolli's sign.

Keywords: Trauma of the chest, Comolli's sign, Fracture of the scapula

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INTRODUCTION

The scapula is a flat, triangular bone that connects the upper extremity to the main skeleton of the body. Comolli's sign is described as a typical triangular cushion-shaped swelling-hematoma, which overlaps the outline of the scapula in cases of fracture of the scapula. Fracture of the scapula is uncommon and accounts for 3% to 5% of shoulder fractures and 0.4% to 1% of all body fractures [1]. During impact it is protected by the large surrounding muscle mass and its movement to the chest wall dissipating the force and energy of the impact. Fracture of the scapula is primarily the result of high-energy trauma. We describe a case of post-traffic thoracic trauma with a positive Comolli's sign [2].

CASE PRESENTATION

This is a 69-year-old male patient who had a traffic accident with a bicycle and was brought by ambulance to the emergency department with the affected left upper extremity supported by the contralateral arm in an adducted and motionless position, which became particularly painful during the abduction attempt of the shoulder. A full assessment of the casualty was undertaken,

with attention to airway, breathing and circulation and potential exposure to disability.

A fracture of the left scapula was found, with a typical finding of Comolli's sign, i.e. swelling and hematoma, particularly painful on palpation, covering the outline and area of the scapula against the posterior chest wall (Figures 1-3).

Figure 1. Swelling in the area of the left scapula and crushing fracture of the scapula.

Figure 2. Intense swelling and hematoma in the area of the left scapula.

Figure 3. Crushing fracture of the scapula and extensive hematoma in the shoulder joint.

The patient did not have a pneumothorax, but he had a fracture of the 1st rib of the right side of chest , fractures of the 1st-5th rib of the left side of chest , a small pleural effusion – a small hemothorax on the left that did not need to be drained with a bulau thoracostomy tube without a picture of active bleeding (Figures 4,5).

Figure 4. Fracture of the scapula and prominent hematoma.

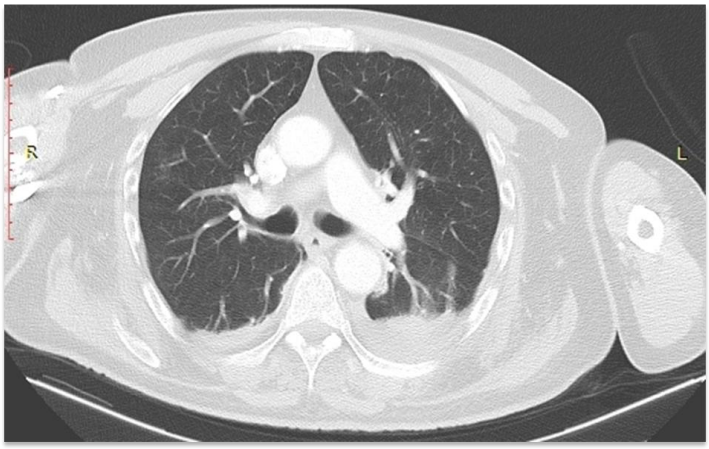

Figure 5. A small pleural effusion – a small hemothorax -on the left that did not need to be drained with a bulau thoracostomy tube.

The wounds were treated, and the left upper limb was immobilized in a special "envelope" to immobilize the left shoulder joint. He was transferred to a special hospital unit due to a positive Covid-19 test.

The patient was hospitalized for 6 days without any particular complications and left the hospital in good general condition with instructions for orthopedic evaluation and thoracic surgery reevaluation.

COMMENT

In 1938, the Italian pathologist Antonio Comolli (1879-1975) first described a clinical sign that he considered specific for scapular fracture suggesting that the muscles around the scapula are vulnerable to the development of compartment syndrome [3]. So, we define Comolli's point as the presence of a triangular swelling that corresponds to the outline of the broken scapula. The scapula is quite important in the function of the upper limb [4].

Fractures of the scapula are usually the result of high-energy trauma, either direct or indirect. However, scapular fractures are relatively rare for two reasons:

1. the scapula lies above the posterior chest wall and is protected from the thorax and thoracic cavity anteriorly and posteriorly by a solid layer of muscle and soft tissue, and
2. the relative mobility of the scapula allows significant dissipation of the kinetic energy of the wound [5].

Therefore, scapular fractures are the result of trauma with a large release of energy, and patients who have a scapular fracture have an 80% to 95% chance of concomitant multiple bone and other even life-threatening injuries [6].

Moreover, such injuries include underlying thoracic injury, and it has already been mentioned that although scapular fractures are associated with rib fractures and thoracic injury, the mortality rate is not adversely affected by the presence of a scapula fracture and this may be because the fracture itself absorbs energy that might otherwise have been transmitted to vital structures. It has also been shown that the presence of a scapula fracture does not adversely affect the outcome of management of the thoracic injury if underlying rib fractures are plated [7].

These patients must be evaluated with due care when they arrive in the emergency department so that appropriate therapeutic and supportive care can be provided.

Fractures of the scapula should be diagnosed early and treated in mixed thoracic and orthopedic nursing units [8].

CONCLUSION

Fractures of the scapula usually result from high-energy trauma. Comolli's point is a warning sign of high-energy injury that predisposes to serious associated injuries and rarely to the development of scapular compartment syndrome. Only about 10% of scapular fractures require surgery. Conservative treatment consists of immobilizing the shoulder and administering effective analgesics.

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ΠΑΡΟΥΣΙΑΣΗ ΠΕΡΙΣΤΑΤΙΚΟΥ

Το σημείο Comolli ως αξιόπιστος δείκτης θωρακικού τραύματος υψηλής ενέργειας: ενδιαφέρον περιστατικό

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ΠΕΡΙΛΗΨΗ

Ως σημείο Comolli περιγράφεται ένα τυπικό τριγωνικό μαξιλαροειδές οίδημα- αιμάτωμα, που επικαλύπτει το περίγραμμα της ωμοπλάτης σε περιπτώσεις κατάγματος αυτής. Το κάταγμα της ωμοπλάτης είναι ασυνήθιστο και αντιπροσωπεύει το 3% έως 5% των καταγμάτων του ώμου και το 0,4% έως 1% εξόλων των καταγμάτων του σώματος.Κατά τη διάρκεια της πρόσκρουσης προστατεύεται από τη μεγάλη περιβάλλουσα μυϊκή μάζα καθώς και την κίνηση αυτής στο τοίχωμα του θώρακα διαχέοντας την δύναμη και την ενέργεια της προσβολής.Το κάταγμα της ωμοπλάτης είναι κυρίως το αποτέλεσμα τραυματισμού υψηλής ενέργειας.Περιγράφουμε μια περίπτωση τραύματος του θώρακος μετά από τροχαίο ατύχημα με θετικό σημείο Comolli.

Λέξεις ευρετηρίου: Τραύμα θώρακος, Σημείο Comolli, Κάταγμα της ωμοπλάτης

Ν. Μπαλταγιάννης, Μ. Μπαλταγιάννη, Π. Τσόπα, Ι. Σκούρας, Δ. Αναγνωστόπουλος, Ν. Μπολάνος. Το σημείο Comolli ως αξιόπιστος δείκτης θωρακικού τραύματος υψηλής ενέργειας: ενδιαφέρον περιστατικό. Επιστημονικά Χρονικά 2024; 29(2): 277-281

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