Case Report

Seat belt syndrome: a case report

Vinod Kumar Nigam*, Sidharth Nigam

General and Minimal Access Surgery, Gurugram, Max Hospital, Haryana, India

Received: 27 October 2021  
Revised: 26 November 2021  
Accepted: 03 December 2021

*Correspondence: Dr. Vinod Kumar Nigam,  
E-mail: drnigamvk@gmail.com

ABSTRACT

Seat belt syndrome happens when a car meets an accident and person sitting in the car with seat belt on gets abdominal injuries typically, seat belt mark with intestinal injuries and fractures of ribs and lumbar spine. The abdominal injuries are usually intestinal perforations. Doctor seeing the motor vehicle accident must keep in mind seat belt syndrome while examining. As the traffic rules are getting enforced strictly in developing countries we are seeing seat belt syndrome cases in these countries more and more. We presented here a case of seat belt syndrome in 35 years old women.

Keywords: Abdominal injuries, Accident, Automobile, Fracture, Intestinal perforations, Seat belt syndrome

INTRODUCTION

Seat belt syndrome is a term used for injuries caused by wearing a seat belt in a vehicle while travelling and getting involved in an accident. It’s defined clinically as a seat belt sign (seat belt mark on the body) plus an intra-abdominal organ injury (that is, bowel perforations) and/or thoracic-lumbar vertebral fractures. The seat belt sign was originally described by Garrett and Braunstein in 1962 as linear ecchymosis of the abdominal wall following a motor vehicle accident.

A unique association of injuries has emerged in adults and children with the use of seat belts. Seat belt Syndrome injuries may be very mild as an abrasion or bruising or can be very serious as bowel perforation. Seat belt sign is linear contusion mark over anterior abdominal wall. The first most detailed statistical analysis was carried out by Kohlberg and Robinson and they concluded that the risk taken by an occupant without a seat belt was 70% higher than that for a belted occupant.

A recent federal motor vehicle safety standard requiring lap and shoulder belts in all rear seat position has potential to decrease the risk of injury to elder children using seat belts.

CASE REPORT

A 35 years old female co-passenger of a car was brought to the emergency department of the hospital after an accident. She was in shock with 120/min heart rate, 90/60 mmHg blood pressure and in severe pain, unable to take deep breath. Examination revealed a transverse abrasion mark on lower abdomen and peritonitis. Sternal pressure indicated left lower rib fractures. Investigations including X-ray of chest, ultrasound of abdomen and CT scan of abdomen revealed multiple left lower rib fractures and intestinal perforations. Emergency laparotomy was performed. Two perforations were found in jejunum (Figure 1) and peritonitis. Peritoneal lavage was performed with normal saline. Two jejunal perforations were closed with 3-0 silk through and through and then buried with sero-serosal continuous suture. Two 24 number abdominal drains were introduced in peritoneal cavity. One for pelvis and other for right paracolic gutter and intestinal perforation sites. Abdominal wound was closed by no. 1 prolene continuous suture and with skin staples. Patient remained tachycardiac for 3 days, because of peritoneal pain and pain due to rib fractures, and laparotomy but gradually settled and was discharged after 8 days of operation.
a hlis S. Seat belt syndrome: a global tch. Seat belt syndrome is his case the initial pain acceleration leading to crushing of intra-reflexion (bending forward) in the cervical spine and lead to its disability. Due to the use of the most common 3-points seat belts cervical spine is commonly affected. In case of a sudden stoppage of the vehicle or a frontal impact, the head sharply continues its forward motion based on the physical law of conservation of energy. Depending on the value of the deceleration, the relative weight of the head can be increased many times. This causes hyperflexion (bending forward) in the cervical spine and lead to its disability.

CONCLUSION

If one is suspecting a seat belt syndrome in a car accident case and there is an ecchymosis or abrasion mark on abdominal wall, exploratory laparotomy or a diagnostic laparoscopy must not be forgotten. There is a need of awareness among doctors when examining a vehicle accident victim to not to forget seat belt injuries. If the condition of the patient doesn’t improve one must consider open and see than wait and watch. Seat belt syndrome is now increasing in Asian countries also because of increased car traffic. Inappropriate seat belt application is one of the main reasons of seat belt injuries. We presented here a case of seat belt syndrome.

ACKNOWLEDGEMENTS

The authors thank Dr. Charvi Chawla and Mr. Manish Kumar for their valuable support during this work.

REFERENCES

