CASE REPORT

Hazards of unrestrained vehicle cargo

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The compulsory use of seat belts for drivers and front seat passengers was introduced to the United Kingdom in 1983. In 1991 legislation was extended to include rear seat adult passengers in cars where a seat belt was fitted.¹ This protects rear seat passengers from ejection from the vehicle, and prevents them from becoming a hazardous projectile to front seat passengers in the event of a collision. There is currently no legislation regarding the transportation or restraining of cargo within a car, provided the driver's rear view is not compromised.²

Case report

A 33 year old male driver and his front seat passenger were travelling in a hatchback car at approximately 40 miles per hour. Both were wearing safety belts. The rear seats had been folded down to enable the carriage of a number of wooden planks. Their car was struck from behind by another car causing it to strike a further vehicle in front. There was external damage to the front and rear of their vehicle but the cabin space remained relatively intact. During the collision the unrestrained wooden planks shunted forwards striking the back of the driver's seat (fig 1). Both occupants were conscious immediately after the collision but the driver rapidly became unresponsive. Extensive resuscitation efforts were made at the scene and in the accident and emergency department. Thereafter he was transported to the trauma theatre for thoracotomy, which revealed an aortic dissection at the level of T12 and a ruptured spleen. Despite efforts to control haemorrhage he died in theatre.

The passenger, travelling in the adjacent seat, required treatment for only minor bruising.

Discussion

In this case the unrestrained cargo in the rear of the car caused major injuries to the driver. These injuries resulted in an injury severity score of 75 and a revised trauma score of 4.0956. Using TRISS methodology³ it was calculated that his probability of survival was 0.7%.

It has been recognised that unrestrained rear seat passengers represent a hazard to front seat occupants during a road traffic accident.⁴ The risk of injury to a front seat passenger is doubled in a frontal impact if an unrestrained rear seat passenger is in the vehicle.⁵ Clearly unrestrained luggage or cargo in the rear of a vehicle also has the potential to inflict significant injury to front seat occupants.^{2,6} Cargo barriers, which are sometimes present in estate cars and hatchbacks, prevent loads entering the passenger compartment from the boot of the car and thus prevent projectile injuries to occupants from objects shunting forwards.⁷ In this particular case, however, a cargo barrier would have prevented the carriage of the oversized load in this vehicle.

Implications for prevention

Unrestrained cargo in the rear of a vehicle represents a significant hazard to front seat occupants in the event of an accident. Education to increase public awareness or the introduction of legislation in this area may prevent significant injury resulting from this potential hazard.

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Figure 1 Unrestrained cargo impacts driver's seat.

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