A case of severe donor reaction leading to grievous injury

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Abstract:
Adverse events of variable severity may occur occasionally following whole blood donation. We are reporting a case of severe donor reaction leading to grievous injury. A first-time male voluntary blood donor donated blood in our blood donation camp. The donation was uneventful, and he left the premise after 20 min of postdonation observation and advice. Several minutes later, he fell on the road and injured himself complicated with severe delayed vaso-vagal reaction. The donor had lacerated wound over the chin, fracture neck of the left mandible, fracture left lower incisor and left lower molar tooth. Appropriate medical care was catered to the donor with full medical support from Department of Transfusion Medicine and was fully recovered from the injury. Blood collection team must take up the responsibility of the management of all complications related to blood donation.

Keywords:
Donor reaction, injury related to blood donation, severe donor reaction

Introduction
Blood donation is well tolerated by healthy blood donors. However, adverse reactions of variable severity may occur occasionally. The incidence of the same has been reported as 3.2%. Donor reaction is defined as the clinical symptoms or signs of donor discomfort severe enough to be noticed by the donor himself or the staff, respectively. The reaction may occur at predonation, donation, or postdonation phases. A donor can have a reaction even after leaving the donation premises. The requirement for medical support after leaving donation premises has been found to be 1 in 3400. Donor reactions are classified into mild, moderate, and severe types. Injuries related to blood donation are also not uncommon. Vaso-vagal reactions are the most common adverse reactions and the hematoma is the most common injury related to blood donation. Injuries, including laceration, fracture bone and head injury, may occur as complications of vaso-vagal reactions and require emergency medical support. Infrequently, these injuries lead to long-term morbidity and disability. According to Sorensen et al. 2.3 and 5 among 100,000 donors may be affected with complications associated with long-term morbidity and disablement, respectively.

Over a period of 2 years from January 2016 to December 2017, 14,125 units of blood were collected by our center. A total of 258 donor reactions (1.8%) had occurred during this period of which 191 were mild, 39 were moderate, and 28 were severe. All these reactions, barring one had occurred at the donation site and were promptly and properly managed. We are reporting a case of severe donor reaction that occurred several minutes after the donor left the donation premise leading to grievous injury and its subsequent management.

Case Report
A 23 year old male, first time donor, software engineer, weighing 56 kg with...
no abnormal medical history or physical examination findings came for voluntary blood donation at the blood donation drive near his office. He had adequate sleep, had taken meal 2 hour back and did not appear unduly anxious. A volume of 350 ml of whole blood was collected from him without any immediate adverse events. He was observed for 15 min postdonation. Following postdonation refreshment and proper postdonation instructions, the donor left the donation premises. Forty minutes later, he had an episode of the loss of consciousness (LOC) and fell on the road and injured himself. LOC lasted for nearly 2 min and was not associated with convulsion or incontinence. He was immediately attended to by blood collection team who were still present at the donation site.

On examination, the donor was conscious but confused. He was found to have a lacerated wound (3 cm × 1 cm) on the lower surface of the chin, fracture teeth, active bleeding from the mouth, tender swelling over the left temporo-mandibular joint area. His pulse rate was 82/min, regular with normal rhythm. The blood pressure was 110/66 mm Hg. Focal neurological deficits were ruled out. On auscultation, air entry into the lungs was bilaterally equal; the abdomen was soft and nontender. Immediate management was initiated by maintaining the airway and elevation of the foot end. The donor was reassured. Hemostasis was achieved by compression and wound dressing. The donor with a bystander was immediately shifted to our hospital for further management. The laceration was sutured (See Figure 1). Neurosurgery and oro-maxillo-facial surgery consultation were taken. Computed tomography of the head and brain showed fracture neck of the left mandible, fracture left lower incisor, and left lower molar tooth (See Figures 2-4). Fracture mandible was managed conservatively. He was advised restricted jaw movement and liquid diet for 3 weeks. Suture removal was done after 7 days. The donor was regularly followed up by...
the blood center to ensure his health status. The donor recovered from the injury with full medical support from the Department of Transfusion Medicine. Reaction and outcome were reported to the Hemovigilance Programme of India.

Discussion

This is a case of grievous injury related to postdonation severe vaso-vagal reaction. Postdonation reactions may occur within minutes, hours or days after the donation. Orthostatic changes and hypovolemia play a role in determining reaction rate and severity of the delayed reaction. Blood collection team should ensure the proper care and management of blood donors for any sort of complications related to blood donation. First-time donation, anxiety, low body weight, low body surface area, fasting, inadequate sleep, inadequate hydration, low blood pressure, inattentive phlebotomist are some of the risk factors for donor reactions. Donors with the previous history of two severe donor reactions should be permanently deferred. Predonation hydration has been found to be effective in reducing donor reactions. Extended postdonation observation time should be allotted for first-time donors and donors with previous reactions. Postdonation instructions should be explained clearly to the donors, especially to inform the blood center or seek medical help in case of any delayed reaction. The donors who had reactions must be diligently followed up. All donor reactions should be reported without fail to the hemovigilance System. To conclude, the blood collection team must take up the responsibility of the management of all complications related to blood donation.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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