concerning vitamin D in refugee children. Moreover, stoss therapy might be considered in refugee children with rickets due to the problem about adherence to a daily regimen.

Contributors: EAA: primary responsibility for protocol development, data collecting, enrollment, outcome assessment, preliminary data analysis and writing the manuscript; HY: participated in the development of the protocol and analytical framework for the study and patient screening; EP: supervised the design and execution of the study; SS: conceptualized and designed the study, coordinated, and critically reviewed the manuscript for important intellectual content. All authors read and approved the final manuscript.
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Conveyor Belt Entrapment Trauma in Children: An Unreported Menace

A retrospective study was conducted including all the children who sustained motorized machine belt entrapment injuries. Six children included in study had mean (SD) Glosgow coma scale and pediatric trauma score of 5.7 (3.54) and 3.2 (1.21), respectively. Overall mortality and paraplegia rate were 33.3% each. Awareness and legislation both are important to curb this menace.

Keywords: *Belt entrapment, Head injury, Pediatric trauma, Thoracic trauma, Vertebral injury*.

Trauma is one of the most important causes of mortality and morbidity in children [1]. The injuries associated with the use of motorized machines is extremely common due to the lack of safety norms and their poor implementation [2]. The locally made machines with open conveyer belts are being frequently used in the villages. In recent years, we have been witnessing an emerging mode of trauma in children with extremely high case fatality rate and very high morbidity in children who are surviving. We present our experience of managing children with these injuries.

A retrospective review was conducted of the medical records at a level two trauma center of Northern India between May 2015 to April 2019. Clearance was taken from institutional ethics committee. The study included all the children presenting to our trauma center during the study period with a common mode of injury *i.e.* trauma due to entrapment in the open belt of motorized machine. All these children had sustained polytrauma. We classified these children into three groups having different spectrum of injury due to entrapment of different body parts: *viz*, Type I: Children pulled through their torso and had a blow to their head or face from the metallic wheel at the end of the belt; Type II: Children pulled through their torso with torso getting entrapped between the belt wheel; and Type III: Children pulled through their upper or lower limbs.

Injury severity was assessed by a pediatric trauma score (PTS) and Glasgow coma scale (GCS) [3].

Total of six children (4 female) with belt entrapment injuries presented during the study period. The mean (SD) age of the studied patients was 5 (1.51) years. 66.6% of injuries occurred in rural areas. Two (33.33%) patients were shifted to a trauma center in an ambulance and only three got primary treatment at the health center. Others were directly referred to our trauma center with a median distance of 80 km (30-140). All the children were entrapped while playing near the machines. They were caught in the belt by their clothes while their parents were working nearby. All the patients had polytrauma (***Table* I**). The mean pediatric trauma score was 3.2 (1.21) (range 2-5) and mean GCS score was 5.7 (3.54) (range 3-13) at the time of presentation to the trauma center. Two children were dead at the time of arrival at the trauma center. Two of these had extradural hemorrhage with a parenchymal contusion. Four children had thoracic trauma and three children had associated abdominal and vertebral fractures. Two of these children had paraplegia at the time of presentation with mortality in one patient.

As a developing country with a large pediatric population, we have a huge burden of trauma [4]. We have witnessed an increasing incidence of trauma in children related to construction sites and use of machines. The assignment of children into three groups according to which body part got entrapped in the belt first, was extremely useful in predicting the pattern of injuries and overall morbidity and mortality.

Type I injury was most fatal as children had severe head and maxillofacial trauma. We propose the use of this classification for identifying the different injuries in these children with polytrauma. These injuries may compromise both airway and breathing which is rapidly fatal apart from the head injury itself. Type II injury were also severe in terms of both mortality and morbidity. All three children with these injuries had associated vertebral injuries with two children having paraplegia at the time of presentation. Type III injuries were least severe but also least common. The GCS and PTS scores were much lower when compared to scores reported in other studies [5,6]. This highlights the severe nature of this trauma and an overall mortality rate of 50% [6]. The use of Roller machines and conveyer belts have become extremely common, and they are a part of numerous manufacturing units. Though there are safety norms, but because of cost cutting their implementation is extremely poor [7,8]. Scarf used around the neck by females in our region has been reported to cause similar injuries [9].

The belt entrapment injuries in children have very high mortality and morbidity. The incidence may be higher because of very high prehospital mortality rate. Legislation for norms and their strict implementation is required for prevention of these injuries.

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TABLE I DESCRIPTION OF PATTERN AND DEMOGRAPHY OF CHILDREN WITH CONVEYOR BELT ENTRAPMENT TRAUMA

S.No	*Age/ gender*	*Type*	*PTS/ GCS*	*Head injury*	*Thoracic injury*	*Abdominal injury*	*Vertebral injuries*	*Bony fractures*	*Open wound*	*Mortality/ paraplegia*
1	6/F	II	4/6	–	+	+	+	+	–	–/+
2	7/M	IIw	4/6	–	+	+	+	+	–	–/+
3	4/F	III	5/13	–	+	–	–	+	+	–/–
4	5/M	II	2/3	+	+	+	+	–	–	–/–
5	4/F	I	2/3	+	–	–	–	–	–	+
6	4/F	I	2/3	+	+	–	–	–	–	+

PTS: Pediatric trauma score; GCS: Glasgow coma scale.

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Single Hepatitis B Booster Dose in High-risk Children with Suboptimal Surface Antigen Antibody Responses After 3-dose Primary Vaccine Series

This was a descriptive study of 30 children born to HBsAG positive mothers between June 2009 and December 2013. All children had anti-HBs response ≤100 IU/L after 3 doses of hepatitis B vaccine primary series. A single booster dose led to hepatitis B surface antibody titers ≥100 IU/L in (85%) of children.

Keywords: *Immunization, Prevention, Seroprotection.*

Approximately 10% of infants are non-responders or have suboptimal vaccine response with hepatitis B surface antibody (anti-HBs) titers ≤100 IU/L three months post-3 dose hepatitis B vaccine series [1-4]. Controversy remains over the need for booster dose in suboptimal responders with antibody levels 10-100 IU/L. None of the international guidelines address this, especially in high-risk infants born to hepatitis B chronic carrier mothers [1,5]. The study aimed to describe the change in anti-HBs titers in infants born to hepatitis B carrier mothers and anti-HBs titer of ≤100 IU/L after the 3 dose primary series; and to determine if for infants with anti-HBs titer of 10-100 IU/L, a single booster of 10 µg hepatitis B vaccine will increase the anti-HBs titers to >100 IU/L.

This was a descriptive study of children born between June 2009 to December 2013, to hepatitis B surface antigen (HBsAg) - positive mothers, at a tertiary university hospital in Singapore, with anti-HBs response ≤100 IU/L after completing 3 doses of hepatitis B 10 µg vaccine given at birth, and age of 1 month and 6 months. Vaccine response was defined based on anti-HBs level done 3 months after completion of the third vaccine dose *viz*. non-responder (anti-HBs <10 IU/L) or suboptimal responder (anti-HBs ≥10 IU/L but ≤100 IU/L). Occult HBV infection was defined as the presence of hepatitis B infection with undetectable hepatitis B surface antigen (HBsAg) [6].

Demographic data and details of maternal HBV infection were collected for all children. Baseline anti-HBs levels were checked for children who were suboptimal responders before administration of the fourth booster dose [intramuscular 10 µg monovalent hepatitis B (Engerix B, GSK, Wavre, Belgium)]. Eight weeks post-booster, HBsAg, HBV DNA, hepatitis B core antibody (anti-HBc) and anti-HBs titres were measured. Children who were non-responders received a repeat three dose vaccine series and were excluded from follow-up. Children whose mothers had hepatitis C virus or HIV infection, or children born before 37 weeks gestation, had a birthweight less than 2.5 kg, or known primary immuno-deficiency, were excluded. Informed consent was obtained from their parents and assent from those older than 6 years. Study was approved by the National Healthcare Group Domain Specific Review Board.

Data were analyzed with SPSS version 25.0. Comparisons were done using Mann Whitney test, and significance was taken as $P<0.05$.

Thirty-nine children (3 non-responders and 36 suboptimal responders) were eligible for the study; 30 (13 females) were recruited (3 non-responders and 27 suboptimal responders). Mean (SD) age at time of recruitment was 63 (31.5) months. Majority were Chinese (80%). Mean (SD) birth weight was 3.22 (0.26) kg. Twenty-four were breastfed until 9 months, 6 were born *via* Caesarean section.

Five (16.7%) mothers were HBeAg positive with HBV DNA viral load of >200,000 IU/mL in their third trimester prior to starting tenofovir. Two (6.7%) received tenofovir during the last trimester. There was incomplete data for 9 children; 4 (13.3%) declined booster vaccination and 5 (16.7%) declined blood tests post-booster for personal reasons. Hence, 21 children had both pre and post-booster serological results for analysis. No children had detectable HBV DNA or reactive anti-HBc.