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A Bizarre Agricultural Injury and Its Analysis.

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ABSTRACT

Each day lot of agricultural injuries goes unaccounted. This paper aimed to study a rare injury during tilling of the paddy field by a two wheeled tractor. The study was designed as a follow- up of the patient who had this unique injury to the site of occurrence his field level and analysis of the cause of the injury. It was found that the patient was less educated with injury happening in the late afternoon .He was moving his legs exactly in line with this connection plate and pushed the two wheel tractor which was run by power from a diesel engine. He did not have any formal training. Being tired the boy was careless to identify the sound of the loosened nut. The paper stresses on good maintenance of the agricultural machines.

Keywords: Change in farm practices is a must to reduce injuries related to agricultural machines.

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INTRODUCTION

Most agricultural injuries go un reported. There are quite same problems like social issues , working in their own field are reasons for not reporting. This paper is presented in two parts , first the case is reported and then analysis after the injury is done in the field.



figures 1-3: showing the patient as received after the injury.



Figures 4-6: showing the presentation of the patient with the flat object in the thigh

A 16 year old boy presented to the casualty with severe bleeding wound of left thigh and with a flat iron blade like object projecting from the wound. The object was almost 15 cm out of the wound. figures 1-6. His distal vascularity was intact.

His X-rays are seen in figures 7, showing the iron object almost 3 inches inside the medial part of the left knee .



Figure 7: showing the radiographs of the patient with the flat object medial aspect of femur.

Patient was taken up for emergency surgery. Under spinal anesthesia the wound was debrided and explored. The part of the blade on the medial side of the patient's knee is identified and removed. After lavage with ten litres of saline and closed with a drain.



Figure 8: The patient's limb after removal of the steel connection plate and debridement before closure of the wound.

The place of the incidence was visited and the machine was inspected and photographed. The front and back views of the machine, a walk behind type tractor is presented in figures 9, 10, 11. It had an engine powered by diesel. This is connected by a belt to two wheels on either side with rotating blades mounted on a steel frame. The steel connection plate is seen with the position of the nut in figure 12.



Figure 9: The machine –a walk behind type tractor seen from one side



Figure 10: The arrow pointing to the tilling wheel with heavy duty blades steel linked to the connecting the central rotor and the tilling blades.



Figure 11: The arrow pointing to the steel link connecting the central rotor and the tilling wheel with heavy duty blades



Figure 12: The steel connecting plate that was pointed in the earlier photograph is seen here. the nut has loosened and the nut side end has pierced and entered the medial aspect of the patient's thigh.

After 6 weeks the patient had good range of movement of the left knee and went on to carry on his usual work.

DISCUSSION

The individual in this case report was tilling a wet field. The machine has two separate iron wheels which are fitted with spades. On moving the machine in the field thorough tilling of the fields happen .The wheel is connected to a central rotor by means of many oblique links marked with arrows in the picture. This link with the rotor is fixed with a bolt and nut. One of these links got dislodged from the wheel and its nut got loosened. This by backward movement of the wheel got dislodged and pierced the medial part of the right knee. The patient was fortunate in not injuring his popliteal artery in the process.

From 1926 Japanese indigenously made two-wheel tractors, where a diesel powered engine is connected by a belt to two wheels with rotating blades mounted on a wooden frame. These two-wheel tractors were economical to use [1].

When agricultural injuries are specifically analyzed the safety of machinery during farm operations was associated with higher risks for injury. When there is less regular maintenance required for the machines of farm, it reduces the injury risk. [2] This study also insisted on constant focus on the use of safety devices on machinery for safe farm practices. The second finding could indicate that maintenance itself is a risk factor or that more modern equipment that requires less maintenance places the operator at lower risk. Such findings confirm the sensibility in enforcing persistent operational safety practices as part of injury control strategies on farms. [2]

In Indian subcontinent, migration of rural labor force to city is widespread. Hence there is dependence on farm machinery greater than before. Whatever obtainable workers become over-worked, exhausted hence lose attentiveness and skill, while using farm machinery. This results in more occupational injuries while working in the agricultural field. One main concern is that the Food and Agriculture Organization and United Nations Organization, the two main international societies which brought advances in mechanization in the third world countries, in 2005 have reduced advancement in mechanization in these countries [3]. According to statistics, farm mechanization is more in northern India, while farm machine accidents were more in southern India [4]. Also the true state of agricultural injuries is not as good as official statistics [5]. These injuries are under reported for various reasons [5, 6] I have published the incidence of lower limb amputations in paddy thresher injuries in Cauvery delta region . [7]There is no other available work from any tertiary centre of South India analyzing such injuries till date. The necessity is to have an arrangement that make certain in all the farm activities are safe.

SUMMARY

This agricultural injury is reported here to underline the need of 1. Creating awareness in the medical people who will be handling such cases to make them publish 2. To stress on proper maintenance of farm machinery and training in using them, as food is the first need of man.

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