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A New Design of the Helmet

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Abstract: ***Head injuries are a major public health problem in India, resulting in deaths, Injuries and disabilities. As India has resource limitations in all areas, more markedly in health care, policy makers and professionals need to identify cost effective means of developing integrated programmes. The need for good quality scientific information for policy and programme development needs no overemphasis. The present design of the helmet is done in the Department of Anatomy, Wayanad Institute of Medical Sciences. The design provides a platform to other concurrent studies for the betterment of lives. The design although a basic model is a very effective model. The design is not only useful for motorcyclists but other areas such as construction fields etc.***

Keywords: Construction fields, Head injuries, India, Motorcyclists, Public health problem, scientific information.

1. Introduction

Head injuries are a major public health problem in India, resulting in deaths, Injuries and disabilities. As our country progresses to greater growth and development in terms of motorization, urbanization, naturally the accidents will also increase in India. The recent World Report on Road Traffic Injury Prevention and The World Report on Violence and Health by World Health Organization clearly highlight the growing enormity of the problem of injuries across the world and the urgent need for well-designed and evaluated programmes in prevention, management and rehabilitation. Countries like India have not placed much greater emphasis on prevention. Any growth, development and progress in every society have to be balanced with appropriate safety policies and programmes in all areas. As India has resource limitations in all areas, more markedly in health care, policy makers and professionals need to identify cost effective means of developing integrated programmes. The need for good quality scientific information for policy and programme development needs no overemphasis. The lack of research and good quality data in India is often a major barrier, as we tend to undermine the importance of the problem, even though it is a major public health issue.

It has been reported that the cervical spine is injured in 2.4% of blunt trauma victims [1].Certain demographic factors are known to be associated with blunt cervical spine injury: age greater than 65 years, male sex and white ethnicity [2]. To date, only one population-based study of spinal column injuries has been performed in a complete population. Hu *et al.* reported on patients in the Manitoba Health Insurance Plan from 1981–1984 [3]. The annual incidence rate was 64/100,000 with two peaks, one in the second and third decade of the male population and another in elderly females. The most common mechanism of injury was noted to be accidental falls, with motor vehicle/transport injuries being the second most common. In another study, which is the largest multi-center trial to date, the most common site of injury was the atlantoaxial region, with the most commonly injured levels in the subaxial cervical spine being C6 and C7 [4] One-third of the injuries identified in this study were considered clinically insignificant. Despite this surprising number of clinically minor injuries, the cervical spine remains the most common level for spinal cord injury (SCI), representing 55% of all SCIs [5].

We in the Department of Anatomy of Wayanad Institute of Medical Science have successfully devised a helmet that will not only prevent the head injuries but also prevents the cervical injury and thus reduces the morbidity of the persons whose lives revolves around the risks involved.

2. Materials and Methods

The helmet was designed in the Department Of Anatomy DM-WIMS, Meppadi, Kerala.

The different components were designed taking into consideration by studying the pattern of injury that was most commonly encountered in road traffic injury and also in the construction sites.

3. Result

The helmet that was designed keeping into consideration the different types of injuries encountered had the following parts:

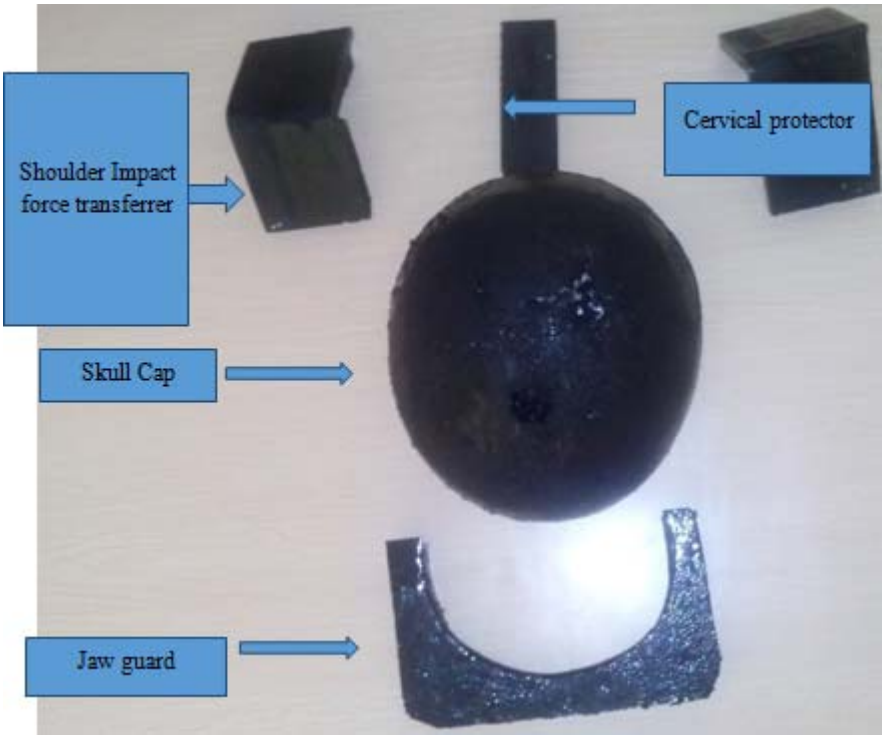

Figure 1: Figure showing the different parts of the helmet

Figure 2: Showing the helmet in anterior profile

Figure 3: Fig showing the helmet from posterior profile

Figure 4: Fig showing the side profile of the helmet

4. Discussion

The various helmets that we get in the market does not provide the full amount of safety and the helmet which fully covers the face is quiet dangerous because it blocks the peripheral vision and also blocks the hearing sensation. The helmets also do not provide enough safety for the cervical injuries.

Figure 5: Basic models of commonly available helmets

In the present design,

The injuries sustained from any angles (front, back or either side) in the form of impact, the force of impact will be directly transferred to the shoulders thus preventing the vital areas from injury and thus successfully reduces the morbidity. The design also does not interfere with other senses of hearing and vision thus further adds on to the advantages of the design.

5. Conclusion

The design provides a platform to other concurrent studies for the betterment of lives. The design although a basic model is a very effective model. The design is not only useful for motorcyclists but other areas such as construction fields etc.

References

[1] Goldberg W, Mueller C, Panacek E, Tigges S, Hoffman JR, Mower WR, et al. Distribution and patterns of blunt traumatic cervical spine injury. Ann Emerg Med. 2001; 38:17-21.
[2] Lowery DW, Wald MM, Browne BJ, Tigges S, Hoffman JR, Mower WR, et al. Epidemiology of cervical spine injury victims. Ann Emerg Med. 2001; 38:12–6.
[3] Hu R, Mustard CA, Burns C. Epidemiology of incident spinal fracture in a complete population. Spine.1996; 21:492–9.
[4] Goldberg W, Mueller C, Panacek E, Tigges S, Hoffman JR, Mower WR, et al. Distribution and patterns of blunt traumatic cervical spine injury. Ann Emerg Med. 2001; 38:17–21.
[5] Sekhon LH, Fehlings MG. Epidemiology, demographics and pathophysiology of acute spinal cord injury. Spine.2001; 26:S2–12.

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