

Swimming Pool Injuries: Diving in a Swimming Pool can be Fatal

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Abstract

Deaths in swimming pools are commonly attributed to drowning. There are other mechanisms also by which an individual can sustain injuries which can lead to an untimely death. We present a case of young male who sustained cervical spine injuries while diving in a swimming pool and died due to its complications. There is no separate registry or data in India compiling the number of swimming pool accidents and various injuries that are sustained by the patient. The authors aim to increase the public awareness regarding these hidden dangers with swimming pool activities which can cost permanent disability or even a life. This is not only a personal loss but a loss to the Community and Nation.

Keywords: Cervical Spine Injury; Drowning; Swimming Pool Accidents; Metallic Cervical Spine Implant; Septicaemia; Quadriplegia.

Introduction

Injuries commonly occur in various sporting activities particularly when enough precautions or proper supervision is not taken. Swimming Pool is considered as a complete body exercise for both adults and children and is undertaken by a significant number of people in warm climates. Children particularly enjoy swimming pools as a means of their entertainment for playing with their friends in the pool. In all the swimming pools invariably life guards are present to prevent any mis-happening but deaths due to accidental drowning are frequently reported. There are other mechanisms also by which an individual can sustain injuries which can lead to an untimely death. We present a case of young male who sustained cervical spine injuries while diving in a swimming pool and died due to its complications. The authors aim to increase the public awareness regarding these hidden dangers

with swimming pool activities which can cost permanent disability or even a life.

Case Report

A young, 24 years male, went for swimming practice in swimming pool. As he dived into the pool his head struck the base of the pool leading to cervical spine injury and hypoxic brain damage. He developed quadriplegia and was shifted to a specialized centre for spine management. He underwent anterior cervical discectomy of C5-6, C6-7 with C6 corpectomy, bone fusion using Iliac bone graft with anterior cervical plating. He subsequently developed bed sores, urinary tract infection septicaemia eventually succumbed to the complications of his injuries after nearly 5 months after sustaining the injury in the pool.

The autopsy was conducted in Department of Forensic Medicine, AIIMS, New Delhi. The deceased was of athletic built. Tracheostomy site was present over neck. Surgical scars were present on the lower third aspect of right side of neck and right iliac crest corroborating with the surgical treatment history with the surgical. On post mortem examination, the findings of surgical intervention were noted and the cause of death was opined as Septicaemia due to antemortem cervical spine injury (Image 1). Yellowish discoloration was present over the body tissues. Straw coloured fluid was present in the cranial, Pleural and Abdominal Cavity. Surgical

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metallic implant with screws was present on the anterior portion of body of cervical vertebrae C4-C7 (Image 2). The underlying spinal cord was swollen and edematous. Signs of infection and septicaemia were present in the brain and lungs, as sequelae of cervical spine injury (Image 3).



Image 1: Surgical Scars over Right Side Neck and Right Iliac Crest



Image 2: Metallic Implant with Screws over the anterior portion of body of Cervical Vertebra



Image 3: Signs of Septicaemia in Brain

Discussion

Swimming and diving is probably the most common physical activity among children and the third most common activity overall [1]. Injuries and infections are not uncommon during Swimming. To spread awareness of infections and to promote healthy swimming, Centre for Disease Control celebrates Healthy and Safe swimming week every year [2]. A research of literature shows that the individual may sustain open wounds to different parts of body, spinal cord injuries, fracture of limb bones, head injury, lips and tooth injuries and sprains while swimming [3,4].

Deaths in swimming pools are commonly attributed to drowning [5-9]. There is no separate registry or data in India compiling the number of swimming pool accidents and various injuries that are sustained by the patient. According to Barss et al, Diving is the most frequent cause of spinal cord injury (SCI) from recreation and sport in Canada. [1] As described by Aito et al, Spinal cord injury usually occurs in younger individuals [10]. In most of the studies regarding injuries sustained during diving, male preponderance of injury was noted [4,10]. Usually injury involved C5 vertebral level and the neurological level was C6 [10].

In our case also the deceased was a young male who sustained injury to C5-6 vertebra resulting in quadriplegia. Deaths due to such injuries are rare. Aito et al describe that only one patient (n=65) died during hospitalization [10].

Conclusion

As in all other sports, injuries commonly occur during swimming. Some injuries can be prevented by taking appropriate precautions like placing warning signs around the pool, appropriately labelling the depth of the pool, preventing people from taking dive in shallow depth and maintaining safety norm by having adequate life guards [1,9,11]. Spinal cord injuries during diving can be caused even with minor trauma in a predeceased individual and hence appropriate screening of swimmers/athletes should be done [12].

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Conflict of Interest

There is no conflict of interests of any of the author.

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