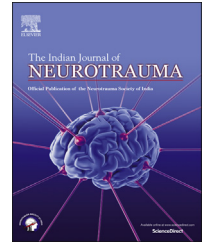


Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/ijnt

Short Communication

Spectrum of cases of head injuries in amateur boxers during practice session

Saurabh Kumar Verma ^{a,*}, M. Narayan Swamy ^b^a Department of Neurosurgery, Command Hospital, Wanowrie, Pune 411040, India^b Department of Neurosurgery, Command Hospital, Lucknow 226002, India

ARTICLE INFO

Article history:

Received 21 March 2014

Accepted 28 April 2014

Available online xxx

Keywords:

Sub Dural Hematoma

Boxing

Brain edema

Head injury

ABSTRACT

Safety precaution in amateur boxing in practice sessions is less than optimal. Safety measures such as wearing of head gear, restriction of practice sessions and medical supervision & examination are strictly adhered to during practice session. The varying patterns of Sub Dural Hematomas encountered by the authors in a span of 2 years in young amateur boxers during practice sessions are hereby reported.

Copyright © 2014, Neurotrauma Society of India. All rights reserved.

1. Introduction

Sub Dural Hematomas account for the majority of lethal brain injuries seen in both organized and recreational athletic activities. It is important to understand that Sub Dural Hematomas in athletes are dissimilar to those commonly seen in the elderly and in many non athletes who are trauma victims. The athlete usually does not have the large potential subdural space that an elderly patient possesses, and therefore a “mass effect” and increase in intracranial pressure can occur with greater rapidity. In addition to injury from the mass effect of blood beneath the dura mater, there is often significant associated damage (contusion or edema) to the underlying brain due to multiple of blows. Acute Sub Dural Hematomas and associated cerebral edema are the leading cause of boxing-related death.

The aim of presentation of this study is to highlight the wide spectrum of presentation of head injuries during practice sessions encountered by the authors. As aptly demonstrated by our cases, boxers who sustain Sub Dural Hematomas may immediately become unconscious and/or suffer focal neurological deficits, or the symptomatology may develop insidiously over days or even weeks. The sequelae range from acute neurological complications to the chronic process of chronic Sub Dural Hematomas.

2. Case report – 1

Eighteen years old recruit was practicing for the regimental boxing competition. After one of the practice sessions he developed complaints of giddiness, ignored by both – him & the authorities. He had another practice session, the very next

* Corresponding author. Tel.: +91 8390957604.

E-mail address: eskay6362@yahoo.co.in (S.K. Verma).<http://dx.doi.org/10.1016/j.ijnt.2014.04.002>

0973-0508/Copyright © 2014, Neurotrauma Society of India. All rights reserved.

day after which he had increased giddiness. After a few hours he was found unconscious in the barracks. He was immediately evacuated to the nearest medical setup where he was suspected to have sustained head injury and was further evacuated to the tertiary care hospital. At admission he was unconscious with GCS score of E1 V1 M4. On examination his right pupil was not reactive to light and he had hemiplegia on the left side. On investigation he was found to have a large Sub Dural Hematoma in the right fronto-temporal region with associated brain swelling producing significant midline shift to the left. He was taken up for emergency craniotomy. The Sub Dural Hematoma was evacuated and the procedure was completed with duraplasty and removal of the bone flap in view of the severe brain swelling. Postoperatively the patient continued to be in a vegetative state for a long time and further developed hydrocephalus necessitating a shunt. Even after two years of operation the patient is not self dependent, and he is unlikely to make it as a fit soldier in future.

3. Case report – 2

Nineteen years old son of a retired soldier, an amateur boxer in the college boxing team, presented to our Neurosurgical OPD with history of mild but continuous dull headache & occasional giddiness & nausea of 10 days duration. He also gave history of having been through 15 days of practice sessions for inter batch boxing championship, however denied any history of knock out. The patient was examined & no clinical abnormality was detected. He was managed symptomatically on OPD basis but came back after two days with persisting symptoms. NCCT head was done which showed a thin Left Fronto-Temporal Acute Sub Dural Hematoma. The patient was managed conservatively and he recovered fully with no residual deficits.

4. Case report – 3

A 14-year-old child presented to our setup with history of knock out in school boxing practice session, followed by one episode of vomiting around 40 days back. The child had remained asymptomatic more or less after that except for frequent episodes of mild to moderate headache without any diurnal pattern or any neurological deficit for which he was being treated symptomatically at a local practitioner. However he continued to be symptomatic with moderate increase in intensity of headache & after around 40 days of injury he presented with complaints of diplopia on Left lateral gaze and was referred to the neurosurgical center.

On examination the patient had no positive findings except for a pulse of fifty-two & subtle Left VI nerve paresis. Urgent NCCT Head showed a large Left Fronto-Temporo-Parietal chronic Sub Dural Hematoma with midline shift.

Burr hole evacuation of chronic Sub Dural Hematoma was done. The child made an uneventful recovery with post op NCCT head showing minimal residual Sub Dural Hematoma & pneumocephalus. He was discharged with advice to avoid Boxing as a sports activity.

5. Discussion

Boxing has been a human sport activity since antiquity. It was introduced to the Olympics in 688 BC. Ancient boxing had fewer rules. Boxers fought without rounds, until one of them was knocked out or admitted defeat by raising one or two fingers. The introduction of “caestus” in 150 BC by Romans wherein the gloves were reinforced with lead or iron, transformed the Greek art of boxing into an inhuman and deadly contest.¹

The purpose of boxing is to render the opponent unconscious & producing temporary (occasionally permanent) brain damage. Mawdsley and Ferguson have described the mechanism of acute injury (temporary damage) following the impact. As a result of impact there is a transient acceleration of head. The skull moves faster than brain because of the inertia of the later and it comes to rest earlier than the brain. With the result the brain impacts on the bony ridges of the skull surface or on the sharp edges of the dural attachment. The impact force is responsible for concussion. Stretching forces on the veins that cross the subdural space (bridging veins) result in the development of Sub Dural Hematoma. The shearing movement of the skull and the brain against dural attachment and bony ridges produce contusions and intra parenchymal hemorrhages.²

Chronic traumatic brain injury which is also known as chronic traumatic encephalopathy (CTE), punch drunk syndrome or dementia pugilistica.³ Loss of pigmented neurons especially in the lateral part of the substantia nigra has been observed in many postmortem studies of professional boxers with traumatic parkinsonism.⁴

Lijuan et al concluded that diffusion tensor imaging can show early pathological changes in the cellular and microvascular structure in the brain of the boxer population and it can be useful index for monitoring the neurological health of boxers.⁵

Although CT and MR imaging studies are extremely useful tools for the evaluation of boxers for intracranial injury, imaging studies also may be used as evidence barring these athletes from future participation in the sport. Thus, at times there may be an incentive for them to refuse or avoid such tests. Although no evidence has been published supporting the suggestion that a boxer who has suffered an intracranial hemorrhage is at any increased risk of such events in the future, governing bodies in the sport may consider this finding to be sufficient evidence to bar the fighter from future participation. Whereas athletic commissions want to be cautious, athletes on the other hand aspire to win championships and million-dollar paychecks. They may not be easily dissuaded by imaging findings, especially when symptoms do not exist or have resolved. Athletes who perceive that they will be banned from the sport will be less likely to seek diagnosis and treatment.

Realizing fatalities and morbidity inflicted by boxing to the boxer, various safety measures have been introduced over a period of time. Biting, gouching, kicking and other brutal techniques were outlawed as early as 1897. Marquis of Queensbury introduced boxing gloves, 3 min round, 10 s knock out and safety helmets. Further boxing got classi-

Download English Version:

<https://daneshyari.com/en/article/2757133>

Download Persian Version:

<https://daneshyari.com/article/2757133>

[Daneshyari.com](https://daneshyari.com)