Case Report

Open Access CrossMark

Traumatic elbow bursitis after professional MMA bouts: a case series

Abstract

Professional mixed martial art (MMA) is a popular combat sport with a high incidence of orthopedic injuries. Traumatic elbow (olecranon) bursitis (TOB) while a common sport injury has not been well reported in combat sports medical literature. In this case series 4 MMA combatants with TOB are described. The mechanism of injury, clinical presentation and management cage side is discussed with the goal of improving care coordination between ringside and orthopedic physicians to help improve outcomes.

Keywords: MMA, combat sports, orthopedic injuries, traumatic bursitis, olecranon bursitis, elbow injury

Volume 5 Issue 3 - 2022

Nitin K Sethi

Department of Neurology, New York-Presbyterian Hospital, United States of America

Correspondence: Nitin K Sethi, MD, Associate Professor of Neurology, Comprehensive Epilepsy Center, New York-Presbyterian Hospital, Weill Cornell Medical Center, 525 East 68th Street, New York, NY 10065, USA, Tel +2127465519, Email sethinitinm@hotmail.com

Received: October 12, 2022 | **Published:** October 25, 2022

Case report

Four combatants with TOB were identified after the completion of their professional MMA bouts during the period June 2020 to April 2022. All were males aged 20 to 28 years, 2 combatants were in middleweight (175-185 lbs.) and 2 in heavyweight (225-265 lbs.) weight class. In all combatants the injury occurred during the bout. All were non-championship fights scheduled for three, five-minute rounds. None of the combatants were aware of when and how the injury occurred. The injuries did not result in medical stoppage and were not noted by ringside physicians or the referees during the bout. During the post-fight examination all combatants had complaint of pain in the affected elbow (3 rights and one left). Clinical examination revealed tenderness, pain on flexion and extension of the affected elbow joint along with swelling and discoloration. All combatants were discharged home from the event venue itself with instructions to rest the affected elbow, apply ice, and take over the counter anti-inflammatory medication and to follow up with an orthopedic physician. In all cases medical suspension of 30 days with orthopedic clearance requested prior to return to professional combat sports was administered.

Discussion

Olecranon bursa is the synovial membrane located posterior to the olecranon bone of the elbow. It is a thin fluid-filled sac that cushions and protects the elbow joint allowing the bony olecranon to glide smoothly across the overlying tissues during flexion and extension movements of the elbow. Inflammation of this bursa due to trauma is referred to as TOB. The superficial location of the OB and limited vascularity make it particularly susceptible to trauma and infection. The diagnosis of TOB is usually clinical based on history of preceding trauma and identification of signs of swelling, tenderness, pain on movement and discoloration of overlying skin on examination. No special diagnostic tests are needed unless there is concern for underlying elbow injury (fracture) or to rule out the presence of infection. Differential diagnoses include fracture of olecranon process of ulna (especially when there is history of preceding elbow trauma), inflammatory arthropathies such as rheumatoid arthritis, gout, pseudogout, cellulitis, synovial cyst of the elbow joint, olecranon spur, lipoma, triceps tendinitis/tear and septic arthritis.[1]

Traumatic olecranon bursitis is a common injury in contact sports. Tuff and Chrobak reported two cases of septic OB in adult hockey players. None of the cases presented with an observable skin lesion and only one case developed a fever. They advised that clinicians maintain a high index of suspicion and monitor for signs of progression when confronted with an acute bursitis even in the absence of signs of obvious infection.[2] A case report highlighted OB in the sport of darts (dart throwers' elbow).[3] The incidence of TOB in combat sports such as wrestling, and MMA has not been studied extensively. In an observational cohort study of MMA competitions held in Hawaii between 1999 and 2006, Scoggin et al. studied 116 bouts involving 232 exposures with a total of 55 injuries and documented 1 TOB.[4]

The usual mechanism of injury in combat sports is blunt force trauma to the elbow sustained during an elbow strike, hard fall on the elbow during a takedown or when the elbow is struck against the firm surface of the cage. In the author's personal experience, the injury neither leads to the referee calling a medical timeout nor does it lead to a medical stoppage called by either the combatant, corner, or the ringside physician. The injury usually comes to attention during the post-fight medical evaluation when the fighter complains of pain and swelling around the affected elbow. Treatment of TOB in the arena itself is conservative. Avoiding further trauma to the OB is important and the combatant is advised to rest the affected elbow and use elbow pads to cushion the elbow. Oral non-steroidal anti-inflammatory drugs are prescribed for pain and swelling. An adequate period of medical suspension (usually 30 days) is administered, and the combatant instructed to follow up with an orthopedic physician. Physical and occupational therapy is usually not needed as majority of cases of TOB recover with conservative management. However, if there is concern for secondary trauma such as acute olecranon fracture or an avulsed osteophyte at the triceps insertion into the olecranon, the combatant should be sent to the emergency department for radiological evaluation. Plain radiographs help to rule out secondary fracture. Ultrasonography is extremely useful in the diagnosis of OB.[5] In follow up visit, the orthopedic physician must rule out the presence of septic olecranon bursitis (SOB). The initial management of SOB is also conservative rather than immediate bursectomy. Severe, refractory OB is treated via incision, drainage, or bursectomy. Endoscopic bursectomy is favored over open incision and yields excellent results with lower risk of surgical complications.[6]

©2022 Sethi. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and build upon your work non-commercially.

Copyright: ©2022 Sethi

Conclusion

Traumatic olecranon bursitis is a not so uncommon orthopedic injury in combat sports such as MMA. The use of protective elbow pads should be encouraged during training and sparring sessions. Early identification and proper management of TOB ensures good outcome in most fighters, helps preserve elbow mobility and prevents long-term pain and disability.

Acknowledgements

The author serves as the Chief Medical Officer (CMO) of the New York State Athletic Commission (NYSAC). The views expressed by the author are his own and do not necessarily reflect the views of the institutions and organizations which the author serves.

Conflicts of interest

The author declares that there are no conflicts of interest.

Funding

None.

References

1. Michael Wieting J. Olecranon bursitis Workup. *Medscape*. 2021.
2. Tuff T, Chrobak K. Septic olecranon and prepatellar bursitis in hockey players: a report of three cases. *J Can Chiropr Assoc*. 2016;60:305–310.
3. Leach RE, Wasilewski S. Olecranon bursitis (dart throwers' elbow). A case report illustrating overuse/abuse in the sport of darts. *Am J Sports Med*. 1979;7(5):299.
4. Scoggin JF, Brusovanik G, Pi M, et al. Assessment of injuries sustained in mixed martial arts competition. *Am J Orthop (Belle Mead NJ*. 2010;39:247–251.
5. Blankstein A, Ganel A, Givon U, et al. Ultrasonographic findings in patients with olecranon bursitis. *Ultraschall Med*. 2006.27(6):568–571.
6. Meric G, Sargin S, Atik A, et al. Endoscopic versus Open Bursectomy for Prepatellar and Olecranon Bursitis. *Cureus*. 2018;10(3):e2374.