

Hand infection following bloody coin game: A case report

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ABSTRACT

The Bloody Coin game is a dangerous activity frequently played among children and is becoming increasingly widespread. In this article, we aim to present a patient treated for a serious hand infection requiring hospitalization due to this game. A 13-year-old girl was admitted to our plastic, reconstructive, and aesthetic surgery clinic with a large erythematous area on the dorsum of her right hand. The patient was diagnosed with cellulitis, and clinical improvement was achieved with intravenous antibiotic therapy, elevation, dressing, and immobilization. The Bloody Coin game is a dangerous game posing a threat to children's health in our country. Appropriate measures should be taken by health and education authorities.

Keywords: Soft tissue infections; cellulitis; hand surgery; pediatrics.

INTRODUCTION

The Bloody Coin game, or kanlı para in Turkish, has emerged as a violent game played in schools among primary, middle, and high school students. This game, initially brought to attention by parents due to injuries on their children's hands, is believed to have spread among children via social media. In the game, a coin is tossed into the air, and the child attempts to keep the coin airborne using the back of their hand. When the coin is caught between the fingers, the child exclaims "bloody coin" and taps the table three times. If the child drops the coin, they face a penalty. The penalized child clenches their fist and positions it upright on the table, where the other player strikes the punished child's knuckles with the coin until bleeding occurs. Some reports suggest that the coins used in the game may be modified to be sharper, making them more harmful. Experts have warned that this game can lead to complications such as soft tissue and skeletal injuries. Through this article, our objective is to present a patient under our care who suffered from a severe hand infection following the Bloody Coin game, and thereby raise awareness

among physicians about this health issue.

CASE REPORT

A 13-year-old girl with a medical history of Sjögren's disease, diagnosed in 2020 and managed with hydroxychloroquine and prednisolone (5 mg, twice a day), presented to our pediatric emergency department with redness around her right hand. The parents reported that they had taken her to another emergency unit due to localized swelling on the third knuckle of her right hand, which developed one day after playing the game called "Bloody Coin." An oral regimen of cefuroxime and clindamycin had been initiated without surgical drainage, and she was referred to our emergency department and consulted with our hand surgery department due to the lack of clinical response two days after the initial emergency visit. Blood tests revealed a C-reactive protein (CRP) level of 174 mg/L (normal range: 0-5).

Physical examination revealed diffuse erythema localized between extensor zone 3 and extensor zone 7 of the second,

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third, fourth, and fifth fingers of the right hand, mainly affecting the metacarpophalangeal joints. Capillary refill time at the fingertips was approximately 2 seconds. No pain was elicited with passive extension. Movements of the interphalangeal, metacarpophalangeal, and wrist joints were limited by pain, but full active range of motion was observed. A skin defect measuring 3 mm in diameter was noted at the knuckle level of the third metacarpal on the right hand, which was assumed to be a fistula from a self-drained pre-existing abscess. A previous ultrasound report revealed diffuse effusion and a 5x7 mm lesion consistent with an abscess in the center. Imaging was repeated and interpreted as cellulitis, with no remaining collection surrounding the fistula tract. Under local anesthesia, the tract was undermined for culture collection and to provide more efficient drainage. A wet-to-dry dressing was applied, and the margins of the erythema were marked for follow-up. The hand was immobilized in a splint and elevated aggressively. The patient was started on intravenous clindamycin (500 mg, three times a day) and cefuroxime (1000 mg, three times a day). Culture results were significant for *Streptococcus viridans*, which was shown to be susceptible to the prescribed antibiotics in the subsequent antibiogram.

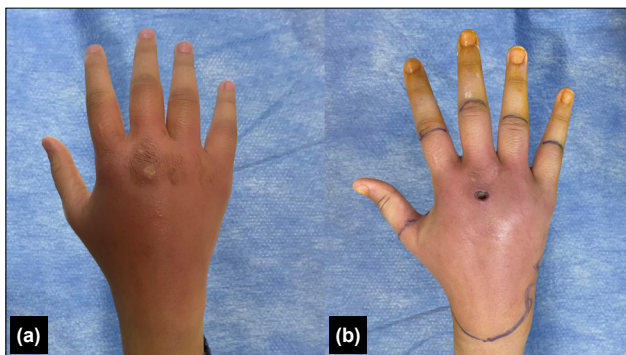


Figure 1. Preoperative images of the patient showing diffuse erythema and edema involving the proximal interphalangeal joints of the ulnar four fingers and the wrist. A fistula opening is visible over the third metacarpophalangeal joint, which was used as an entry point for drainage (a). Postoperative images following the initial dressing change show the fistula tract and the margins of the erythema (b).

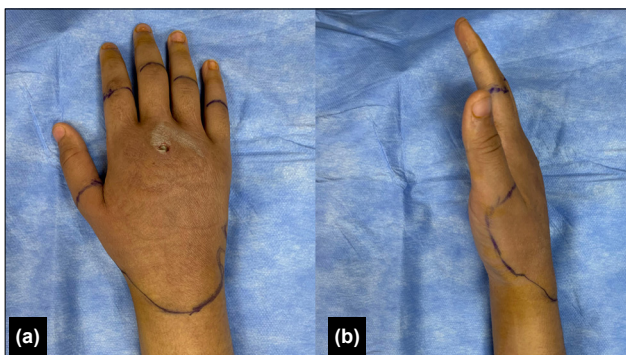


Figure 2. Postoperative images of the patient on the seventh day. Regression of erythema and edema on the dorsum of the hand is evident from both the dorsal (a) and radial (b) views.

The patient's admission was uncomplicated by any adverse events, and her rheumatologic therapy was managed by the pediatric rheumatology team. On the seventh day of admission, physical examination revealed a significant reduction in edema, complete regression of erythema, and a full active range of motion without significant pain. She was discharged after one week of intravenous treatment and transitioned to an oral regimen of clindamycin and cefuroxime, which was continued for an additional week post-discharge. Written and verbal consent was obtained from the patient.

DISCUSSION

Adolescence is a period when both educators and parents must be vigilant about dangerous behaviors. We have seen how dangerous games spread through social media can cause widespread harm to children, as was evident during the Blue Whale period.^[1] While Blue Whale posed a major trend of harm to children and adolescents, there are very few examples in the literature of it leading to health access or operative need. Bloody Coin, as a new risk factor, is a harmful game to be cautious about in pediatric patients, especially in terms of hand trauma. It should be noted that pediatric and adolescent patients, especially those with chronic diseases, may have low awareness of their conditions, and the adolescent period may influence risk-taking behaviors.^[2,3] In addition, patients with diseases controlled by immunosuppressive agents not only suffer from the damage caused by hand trauma but are also at a significantly higher risk of wound infections.^[4,5] As a dangerous game spreading among pediatric and adolescent populations, hand surgeons must be aware of the serious consequences caused by the traumatic nature of the game and its infectious complications.

Hand infections present a spectrum of clinical features, ranging from simple local skin infections to necrotizing soft tissue infections. The most common types of hand infections include paronychia, felon, bite wounds, pyogenic tenosynovitis, septic arthritis, necrotizing fasciitis, and cellulitis. Drainage, incisions, or even fasciotomies may be required in certain conditions such as necrotizing fasciitis or compartment syndrome. Although surgical treatment is generally not required for cellulitis, it is a known cause of atraumatic compartment syndrome.^[6] In the pediatric population, while many cases of cellulitis show improvement with appropriate outpatient care, some individuals may need hospitalization for various reasons. Inadequate adherence to treatment or lack of response to outpatient therapy are common causes for hospital admission. Immunocompromised children, with their diminished ability to fight infections, warrant particular attention and may require hospitalization for close monitoring and administration of intravenous antibiotics to ensure their recovery.^[7] In our case, after ruling out compartment syndrome through physical examination, we widened the fistula tract and undermined the affected dorsal skin of the hand to provide sufficient drainage and prevent pressure build-up. The

patient was hospitalized due to the failed outpatient antibiotic therapy and their immunocompromised status. Intravenous antibiotics, daily dressing changes, and elevation resulted in a fast recovery without the need for additional procedures.

CONCLUSION

To our knowledge, this is the first reported case of a serious complication requiring urgent and inpatient care caused by hand trauma following this dangerous game. Successive measures should be taken by the ministries of health and education to raise public awareness among children, parents, and teachers.

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OLGU SUNUMU - ÖZ

Kanlı para oyunu sonrası gelişen el enfeksiyonu: Bir olgu sunumu

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Kanlı para, çocuklar arasında sıklıkla oynanan ve giderek yaygınlaşan tehlikeli bir oyun olarak karşımıza çıkmaktadır. Bu yazıda, bu oyun nedeniyle hastaneye yatış gerektiren ciddi bir el enfeksiyonu nedeniyle tedavi edilen bir hastayı sunmayı amaçladık. 13 yaşında bir kız çocuğu sağ el sırtında bükülme ile plastik, rekonstrüktif ve estetik cerrahi kliniğimize konsülte edildi. Sellülit lehine değerlendirilen hastada intravenöz antibiyoterapi, mutlak elevasyon, pansuman ve immobilizasyon ile klinik iyileşme sağlandı. Kanlı para ülkemizde çocukların sağlığını tehdit eden tehlikeli bir oyundur. Sağlık ve eğitim otoriteleri tarafından uygun önlemler alınmalıdır.

Anahtar sözcükler: El cerrahisi pediatri; selülit; yumuşak doku enfeksiyonları.

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