

Case Report



Penetrating Head Injury Resulting From Wild Boar Attack in Republic of Korea: A Case Report

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Conflict of Interest

The authors have no financial conflicts of interest.

ABSTRACT

Few cases of injuries caused by wild boars have been reported in the literature. Here, we present the case of a 64-year-old male patient who was attacked by a wild boar. The patient had a laceration to the right forehead and a penetrating wound in the area before the right auricle. Computed tomography scan revealed traumatic subarachnoid hemorrhage, subdural hemorrhage, right temporal lobe contusion hemorrhage, pneumocephalus, right zygomatic arch and temporal bone fracture, and right coronal process fracture of the mandible. Prophylactically, 2,000 mg of ceftriaxone and 400 mg of moxifloxacin were intravenously administered every 24 hours. An emergency craniectomy was performed because the skull fracture was an open fracture and control of the increased intracranial pressure was necessary. Inactivated Rabies Virus Vaccine was also administered postoperatively. We concluded that, unlike typical wounds from other traumatic causes, the risk of wound infection is higher. In order to reduce morbidity and mortality due to wild boar attacks, rapid stabilization of the patient's vital signs, prevention of infection with appropriate antibiotics, and surgical intervention at the appropriate time and method are necessary.

Keywords: Head injuries; Animals; *Sus scrofa*; Swine; Case reports

INTRODUCTION

Few cases of injuries caused by wild boars have been reported in the literature, and only a very small number of fatal cases have been reported.^{3-5,7,9,11,13} However, since the mid-1990s, wild boar attacks have been increasing especially in developed countries. Forest destruction, urbanization, industrialization, migrant populations, and human encroachment on wild life are common situations that cause wild animals to lose their wildlife habitats and increase their presence in human settlements.¹⁰ Injuries caused by wild animals are sometimes serious, resulting in high mortality and morbidity rates. Victims of wild boar attacks suffer a variety of injury types, ranging from simple abrasions to severe organ damage and even death.

We report a case of survival after sustaining severe head injuries following a wild boar attack.

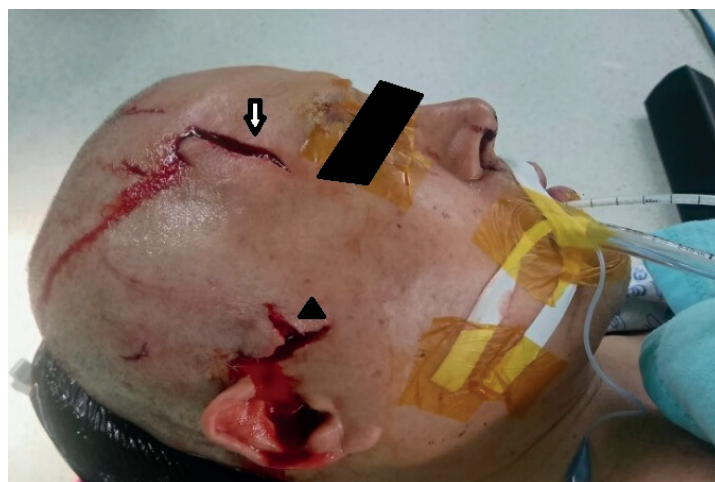


FIGURE 1. Image of patient's facial damage. A laceration to the right forehead (white arrow), a penetrating wound to the area in front of the right ear (black arrow head), and extensive swelling on the right side of the face were observed.

CASE REPORT

A 64-year-old male patient was attacked by a wild boar. While the man was working on a farm, a wild boar attacked him. He retreated, fell backwards, and the wild boar attacked his face. He was taken by ambulance to our emergency department. Physical examination revealed a laceration to the right forehead and a penetrating wound in right preauricular area. There was extensive swelling on the right side of the face (**FIGURE 1**).

After vital signs had stabilized, head computed tomography was performed (**FIGURES 2 & 3**). The wound penetrated the skin in front of the right ear, the right temporal bone, and the right temporal lobe. Traumatic subarachnoid hemorrhage, subdural hemorrhage, right temporal lobe contusion hemorrhage, pneumocephalus, right zygomatic arch and temporal bone fractures, and fracture of right coronoid process of the mandible were found. Soft tissue edema, including subcutaneous emphysema, was also observed on the right side of face.

Prophylactically, ceftriaxone 2,000 mg intravenously every 24 hours and moxifloxacin 400 mg intravenously every 24 hours were started. Tetanus toxoid and 250 IU of human tetanus immunoglobulin were also administered.

Emergency surgery was performed because the skull fracture was an open fracture and may require debridement. After the scalp incision, laceration of the right temporal muscle, scattered bone fragments, and brain tissue exudation were confirmed. After craniotomy and durotomy, the subdural hematoma (SDH) was exposed. Gently removing the SDH revealed severe brain contusion and swelling in the right frontal and temporal lobes and extensive subarachnoid hemorrhage (**FIGURES 4-6**). As cerebral swelling worsened during the surgery, it was decided to perform craniectomy to control the increased intracranial pressure (ICP).

The day after surgery, Glasgow Coma Scale was maintained at 15 and ICP was measured below 20 mmH₂O. The postoperative course was not eventful with no signs of infection. Inactivated Rabies Virus Vaccine was also administered postoperatively. Cranioplasty was performed 6 weeks later. Four months later, he visited the outpatient clinic, and his condition improved, leaving only mild peripheral facial palsy.



FIGURE 2. Axial computed tomography image of the patient's head. Traumatic intracranial hemorrhage and soft tissue edema including subcutaneous emphysema (white arrow) were diagnosed.

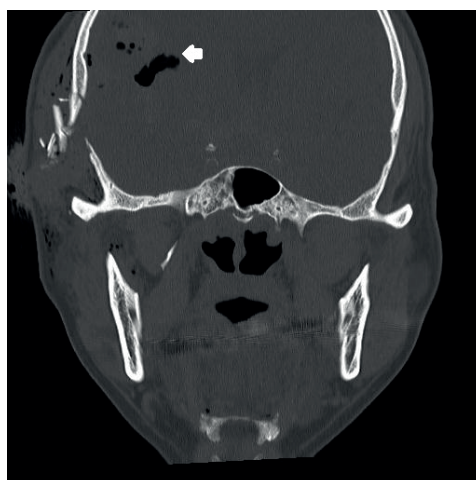


FIGURE 3. Coronal bone setting computed tomography image of the patient's head. Multiple open facial bone fractures and soft tissue edema including subcutaneous emphysema were diagnosed (white arrow: pneumocephalus).

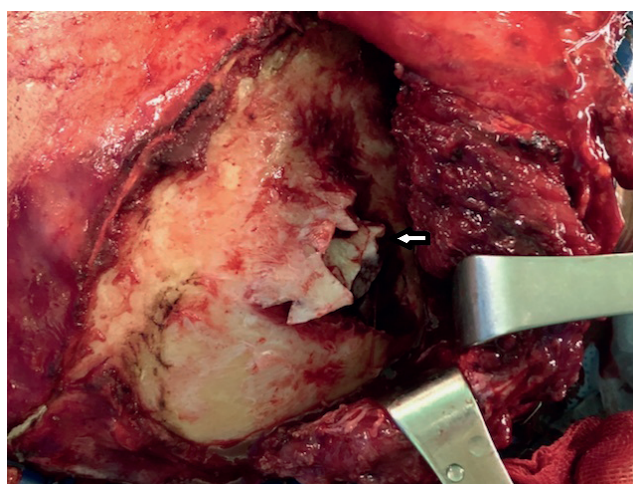


FIGURE 4. Image of the patient's surgical field of view after scalp dissection. A laceration of the right temporal muscle, scattered bone fragments, and brain tissue exudation (white arrow) were identified.

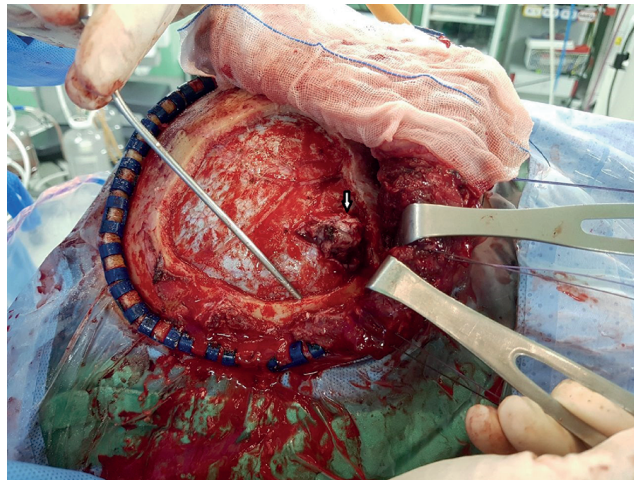


FIGURE 5. Image of the patient's surgical field of view after craniotomy. Dural tear and brain tissue exudation (white arrow) were noted.

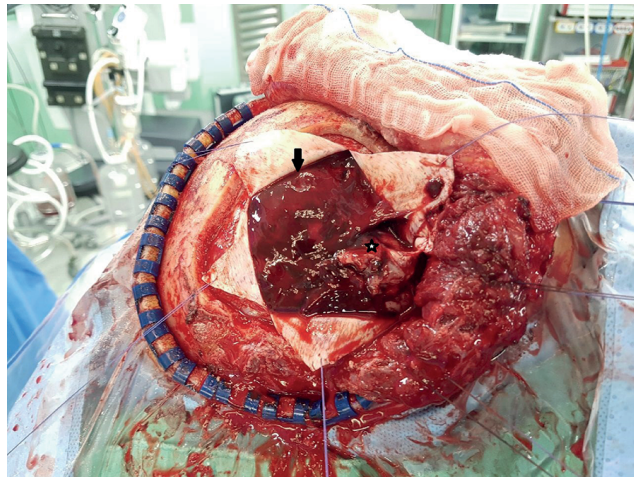


FIGURE 6. Image of the patient's surgical field of view after durotomy. The subdural hematoma (black arrow) and brain contusion and swelling (white star) were exposed.

Ethical statements

The requirement for informed consent was waived due to the retrospective nature of the study.

DISCUSSION

Wild boar attacks are very rare in developed countries. Some adult wild boars typically weigh up to 90 kg and can run at speeds of 40 km/hr.²⁾ They can jump over fences as high as 1 m. They also have sharp tusks that can reach over 10 cm in length. Wild pigs typically show little or no aggression towards humans when they encounter them and will usually try to run away.⁶⁾ Initially, many of these animals are said to have wandered into developed areas in search of food. The mere presence of wild boars living in an unfamiliar environment where these animals encounter buildings, traffic, and large numbers of humans, this may be enough to make them feel threatened.⁶⁾ They are known to attack violently and repeatedly with their tusks when provoked or cornered.²⁾ Most people do not know what situations can provoke a wild boar attack. Therefore, in high-risk areas, public health measures should

be implemented to increase public understanding of the potential risks from wild boar encounters and increase knowledge about injury prevention. Incidence rates are reported to be highest in winter and during daylight hours, and most human victims were adult males traveling alone on foot.⁶⁾

In our case, we administered intravenous ceftriaxone and moxifloxacin prophylactically to cover both human normal flora and the animal's oral flora, as well as Inactivated Rabies Virus Vaccine after surgery. Although there is insufficient data on the normal oral flora of wild boars, Barnham studied wound infections following domestic pig bites.¹⁾ The isolated bacteria included *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus suis*, *Pasteurella aerogenes*, *Proteus* species, *Escherichia coli*, *Bacteroides* species, and coagulase-negative *Staphylococcus*.

The complications resulting from injuries by wild boar attacks include mechanical damage itself, local and systemic bacterial infection. Careful assessment to determine the range of injury and cleansing of the wound including thorough irrigation and debridement of inert tissue is important. Along with anti-rabies treatment, prophylactic broad-spectrum antibiotics are essential to treat infection and prevent complications.⁸⁾

CONCLUSION

We have reported a case of a patient suffering a head injury from a wild boar. Physicians should consider that, unlike typical wounds from other traumatic causes, there is a greater risk of wound infection. Effective wound care and infection prevention should be the key goals. In order to reduce morbidity and mortality due to wild boar attacks, rapid stabilization of patient's vital signs, prevention of infection with appropriate antibiotics, and surgical intervention at the appropriate time and method are necessary.

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