

CASE REPORT

Penetrating Anorectal Injury Caused by a Wild Boar Attack: A Case Report

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Wild boar attacks have rarely been reported in the medical literature. This is the case of an 83-year-old male farmer who was assaulted from behind by an injured adult wild boar. He presented with hemorrhagic shock after sustaining injuries to the right profunda femoris artery and right sciatic nerve as well as significant soft-tissue injuries, bilateral iliac wing fractures, an open pneumothorax, and an anorectal injury. The anorectal injury was treated with fecal diversion but was complicated by soft-tissue infection in the surrounding dead space. The patient needed multiple operations, including removal of the distal rectum and creation of a permanent colostomy. In this report, we highlighted the characteristics of anorectal trauma caused by a wild boar attack. We conclude that penetrating anorectal injuries caused by this type of attack can be associated with extensive soft-tissue damage despite externally appearing to be simple puncture wounds. Anorectal combat injuries have demonstrated similar extensive surrounding soft-tissue injuries and propensity for infection; therefore, this case supports adopting a similar treatment strategy, that of serial and radical debridement, to treat certain wild boar injuries.

Keywords: anorectal trauma, vascular injury, degloving injury, infection

Introduction

The wild boar (*Sus scrofa*) is a species with an abundant population in most parts of Eurasia. It has been introduced into areas such as North America and Australia. A wild boar has higher motor performance than one might realize, as well as potentially dangerous features. Adult boars usually weigh up to 90 kg, but individual boars weighing over 100 kg have been reported. Boars can run as fast as 40 km·h⁻¹, can jump over a 1 m fence, can lift an object of over 30 kg using their nose, and have sharp tusks over 10 cm long.^{1,2} Mayer reported that wild boar attacks, as described primarily in the popular literature, have been increasing in developed areas since the mid-1990s.³

In Japan, according to the Ministry of the Environment, wild boar habitat increased by 70% between 1978 and 2014. The report also mentioned that wild boar hunters have been aging and their numbers have been decreasing over the years in Japan, thus leading to lower pressure from hunting on the wild boar population.⁴ This situation has been even worse in the Fukushima prefecture following the earthquake/tsunami-induced meltdown of the Fukushima Dai-ichi nuclear plant in 2011. Commercial trade and consumption of local boar meat has been banned because of high radiodensity in the wild boar caught in the area.⁵⁻⁷ This discourages hunting and, consequently, makes it more difficult to control overgrowth of the wild boar population in the area.⁸

These changes have affected the incidence of human-wild boar conflict. The local government of Kobe city, which is located in the western part of Japan, has reported wild boar-induced injuries annually, with a drastic increase in these injuries after 2010 (1.7 per year for 2007-2010; 41.6 per year for 2011-2014).⁹ Some

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fatalities and severe injuries have been reported in Japanese mass media after 2000.¹⁰ Responding to the increase in public interest, the Ministry of the Environment commenced maintaining nationwide statistics about wild boar attacks beginning in 2016.

Despite these facts, cases of wild boar injuries have rarely been published in the medical literature, and only a few fatal and nonfatal cases have been reported.^{10–17} In this report, we describe the case of a nearly fatal wild boar assault with multiple traumas, including anorectal injury, that occurred in Fukushima prefecture. Our case appears to be one of only a few reported cases of survival after a severe wild boar injury—defined as any internal organ injuries or life-threatening external bleeding¹⁰—and the first case of anorectal injury caused by a wild boar attack.

Case presentation

An 83-year-old male farmer was attacked from behind by a male adult wild boar while working on his farmland located in the southeastern part of Fukushima prefecture, approximately 150 km north of Tokyo. The boar had been injured by a hunting trap. Emergency medical personnel noticed multiple penetrating wounds and active external bleeding in the right posterior thigh, but the exact bleeding vessels could not be identified in the prehospital setting. The patient underwent volume resuscitation with crystalloids started during transportation to the hospital. He was brought to our emergency department by air ambulance. His initial vital signs were as follows: systolic blood pressure of 65 mm Hg, a heart rate of 68 beats·min⁻¹, and a respiratory rate of 28 breaths·min⁻¹. It was impossible to obtain a blood oxygen saturation level with a pulse oximeter because of poor peripheral perfusion. The patient also appeared confused and agitated. Physical examination showed multiple penetrating wounds to his legs; a 3 cm long wound located at the sixth intercostal space in the right anterior chest wall, which reached the intrathoracic space; a degloving injury of his buttock and right posterior thighs; active bleeding from a deep laceration in the right posterior thigh; and a deep perineal wound passing into the anal canal and distal rectum (Figure 1). He was unable to dorsiflex his right ankle and toes, indicating partial sciatic nerve palsy. Initial imaging studies showed a right open pneumothorax, bilateral undisplaced iliac wing fractures, and multiple air bubbles around the rectum as seen by a computed tomography scan, which indicated anorectal injury. Computed tomography also showed a high-density foreign body in his right buttock (Figure 2).



Figure 1. Photograph of the patient upon arrival. Note the multiple wounds in the buttock and the bleeding from the perineum.

Because of its uncontrollable aggressiveness, the attacking animal was caught and killed by local hunters 3 h after the incident and was identified through the observation of a broken tusk.

The patient showed no significant change in hemodynamic variables after 2000 mL of crystalloids were administered, and he was diagnosed with hemorrhagic shock. Blood product infusion was initiated as soon as the patient was determined to be unresponsive. During the primary survey, the patient was intubated in the emergency department due to prolonged poor oxygenation, and pneumothorax was treated with thoracostomy tube insertion through a newly created incision and simple wound closure. His iliac fractures were considered stable and treated conservatively. An emergency operation was performed. Active bleeding from his transected right profunda femoris artery was observed, which was controlled with a ligation. His right sciatic nerve was partially lacerated and directly repaired with sutures (see online [Supplemental Material 1](#)). The degloving wound in his buttock and thigh was debrided and closed with suction drainage. A piece of the wild boar's tusk was found in one of the wounds and removed (see online [Supplemental Material 2](#)). Complex full-thickness lacerations in his anal canal and distal extraperitoneal rectum were confirmed: One laceration was located in the left lateral wall, and another was located from the mid-posterior to the right lateral wall (see online [Supplemental Material 3](#)). The distal rectal and anal canal walls appeared impossible to repair directly. Fecal diversion with a temporary proximal colostomy was performed, and the patient was stabilized and admitted to the intensive care unit. Intravenous ampicillin/sulbactam (ampicillin 2000 mg and sulbactam 1000 mg every 6 h) was started prophylactically, targeting the animal's oral flora as well as human enterobacteria. Tetanus toxoid and

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