CASE REPORT

Facial injuries by potato gun: Spuds as scuds

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Introduction

Facial and head injuries with a homemade potato gun are rare events. Only two other injuries are reported in the world’s literature and that in non-trauma literature.1 Potato guns are weapons that can launch a projectile by pneumatic or combustion mechanisms at up to 400 miles an hour (643.7 km/h) for distances up to 300 yards (274.3 m). These devices are easy to make and not subject to regulation. They come in many different shapes and sizes, from as small as the palm of your hand to the size of a small cannon. Instructions for the construction of potato guns are widely available on the Internet2 (Fig. 1). All one needs to build and use a basic form of the device is a 4 ft. section of 2 in. PVC pipe, 2 ft. section of 4 in. PVC pipe, 4–2 in. reducer, 4 in. sewer plug, electric barbeque starter, screws, epoxy, hairspray, and lots of potatoes larger than 2 in. in diameter. Projectiles can cause significant damage to a target. When the target is the human eye or face, devastating injury can result. By presenting these two cases of potato gun injuries, we would like to alert the trauma community about the seriousness of injuries inflicted by this homemade weapon.

Case reports

Case 1

A 16-year-old Caucasian male placed a frog into a homemade potato gun. The weapon discharged accidentally in the boy's face as he was peering down its barrel. On arrival, the patient was awake, alert, and oriented, with stable vital signs. There were significant right periorbital edema and moderate bloody nasal discharge. A foreign object protruded between the right eyelids. Several pieces of frog tissue were carefully removed from the conjunctival space.

The maxillofacial CT scan revealed multiple complex fractures of the right facial bones involving the anterolateral sphenoid sinus wall, medial maxillary sinus wall, orbital floor with displacement of fragments into the maxillary sinus, and nasal septum (Fig. 2). The head CT scan did not show a skull fracture or intracranial haemorrhage.

The patient underwent exploration of the right eye globe and removal of foreign bodies. There were multiple lacerations in the superior half of the conjunctiva. The lateral canthus was torn. A small hyphaema was seen. The pupil was irregular. Intraretinal haemorrhages were seen throughout the fundus. A preretinal haemorrhage was noted in front of the macula and optic nerve. The entire retina was pale and oedematous. The postoperative period was uneventful. The patient was discharged home on
postoperative day 2 in good condition. He had not regained vision in the affected eye.

Case 2

This 16-year-old Caucasian male sustained severe facial injuries after being shot accidentally in the face at close range by a potato gun. On admission, the patient was awake, alert, and oriented, with stable vital signs. There was significant edema of the face predominantly on the right side and a stellate through-and-through laceration of the upper lip, 4 cm x 2 cm. The alveolar mucosa was stripped off the right upper teeth. The right superior canine tooth was missing. There were obvious deformity and pathologic mobility of the right maxillary alveolar process. The patient’s vision was intact.

The maxillofacial CT scan showed opacification of the both maxillary and frontal sinuses, and the ethmoid sinus. There were findings consistent with Le Fort I fracture of the right maxilla. There were multiple complex fractures of all three walls of the right maxillary sinus. Fractures extended to the floor of the left frontal sinus and lateral wall of the left orbit. Significant soft tissue edema and subcutaneous emphysema along the right maxillary ridge were present. CT scan of the head was negative for intracranial injuries (Fig. 3).

The patient was taken to the operating room for washout and operative fixation of the fractures. Arch bars were also applied to both maxillary and mandibular dentition to stabilize the fractured maxilla. Most of the denuded area of the right maxillary alveolar process was covered with adjacent oral mucosa. The stellate laceration of the upper lip was debrided and repaired. The postoperative period was uneventful. The patient was discharged on the postoperative day 4 in stable condition.
Follow-up

Both patients have been seen in the office for follow-up. Their fractures are completely healed with no adverse sequelae. These injuries have not affected their daily living and currently the patients have no functional limitations from their fractures. The first patient has lost vision permanently in his right eye. They will be followed up in the office on an as-needed basis only.

Conclusion

Homemade potato guns are not toys but weapons with significant injury potential if misused. The healthcare community needs to be aware of what these devices do, how they work, and the injuries they can cause. In addition, education and prevention interventions about the injuries that can result from homemade potato guns can be aimed at populations with which these weapons are popular.

References