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Non-Fatal Arrow Injury- A Rare Case Report

KEYWORDS: Arrow, Bow, Arrow injury, Penetrating injury.

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ABSTRACT *A 38 years old male patient was brought to the casualty of Mamata Medical College and General hospital, khammam, Andhra Pradesh, with history of sustained injury due to arrow in left side of the chest. On enquiry, there was a quarrel between two brothers on 8th july 2013 in tribal area of Badrachalam, khammam dist, A.P. He was taken by his wife and relatives to Badrachalam area hospital, khammam district. Patient was referred to mamata general hospital on 9thjuly 2013, khammam. The patient was discharged after treatment on 16th august 2013.*

Introduction:
Arrows are believed to have been invented at least 10,000 years ago[1]. Arrow injuries generally rare on a world wide scale, but there are some reports of such type of injuries in Papua New Guinea[2], South Africa[3] and India[4]. Arrow shafts are constructed from a verity of materials and are generally constructed equipped with either a field tip or a broad head[5]. The arrow injuries depend on the type of bow and arrow used. The broad head, used predominantly for hunting is generally constructed of aluminum alloy or titanium-nitride of Teflon-coated tips and may be filled with three to five razor-sharp blades[5]. The field tip commonly used in target practice, possesses a tip diameter equal to that of the shaft and entrance wounds closely resembles gunshot wounds, while the broad head arrow is associated with satellite entrance wound and increased tissue destruction.[6] The average velocity of broad head arrow fired from a compared bow is 60 to 90m/sec.[5]

Here we report a case of penetrating thoraco-abdominal arrow injury to our Mamata General Hospital, Khammam, Andhra Pradesh.

Case report:
Mr. X, 38 years old male, farmer by occupation, belonging to tribal area of Badrachalam, Khammam district was brought to Mamata medical college and hospital, Khammam on 9thjuly 2013 by his wife and relatives. The patient was referred from area hospital Badrachalam, Khammam, where first aid was given.

A 38 years old villager presented to our hospital a day after he sustained an arrow injury to left side of chest, with the arrow in situ. He had Pain at the site of the injury and difficulty in breathing with slurred speech. History of vomiting was present.

General examination: Patient was conscious, coherent and well oriented. His skin was pale. Temperature- 37^{0}C, Respiratory rate-22/min, pulse-130/min, B.P-90/60mmHg. There was a decreased chest movement on the left side. On auscultation, heart sounds were reduced on the left intrapulmonary area and bowel sounds are absent per abdomen.

Local examination: Blood was oozing out at the site of wound. On examination there was small swelling around the entry point of the arrow.

Wound description:
External examination-
A penetrating wound measuring 1x1 cm cavity deep was present over the left lateral chest wall in between the 10th and 11th ribs. It was 5cm below the nipple, 3cms medial to the mid axillary line and 10cms lateral to the xiphoid process. A broken arrow of 10cms (wooden part) was also observed along with the wound.

Internal examination:
During surgery it was observed that arrow has ruptured the left dome of diaphragm along with the transverse colon, and the mesentery at the ileum.

Radiological findings-
A postero-anterior X-ray chest and erect abdomen showed free air under the left dome of diaphragm with horizontal disposition of the foreign body at the level of D11-D12 on the left side. The Heart and lungs appear normal. It also revealed the depth of the arrow in the abdomen was about 12cm (metallic part of the arrow). (Fig.2).

Treatment:
Foreign body (metal arrow edge 7cm in length) was identified and it was perforating transverse colon at splenic flexure. Foreign body was removed and perforating edges were trimmed and cleaned. Transverse colon was resected through and through from perforation and anastomosis was done. Mesenteric tear at the ileum region was repaired. Abdomen is closed in layers. Patient was discharged after 37days of surgery.

Discussion:
Injuries caused by arrows are usually less destructive because of lesser velocity and energy than those caused by bullets. Barbed arrows cause the risk of extensive damage to major structures when retrieved [7]. The ballistics of arrows were described in the Karger and associates report of 1998 [8].A case of transfixed heart and descending thoracic aorta was described by Mullan and coworkers [9] in a stable patient with no evidence of haemo-pneumothorax on the chest x-ray film. Fradet and colleagues [10] reported the case of a patient arriving at the hospital 8 hours after a penetrating thoracoabdominal trauma with a crossbow bolt.Videothoracoscopy has been found as effective solution for the initial evaluation and management in stable patients with thoracic trauma including penetrating injury [11, 12]. But it is not recommended in case of a suspected cardiac or major vessel injury. In case of hemodynamically unstable patients, the arrow should not be removed to prevent a worsening of hemorrhage.

Conclusion:
In conclusion, an arrow should not be removed from a patient with stable or unstable vital signs, before an injury to the

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major blood vessels or the heart has been ruled out. Barbed arrows in proximity to major structures need systematic careful exploration and extraction because of the risk of extensive damage during retrieval.

Fig-1

Fig.2

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