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Sports Esophageal Injury – A Case Report

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Abstract: ***A 13 year old male presented to the emergency department with a history of penetrating injury in the supra-sternal region by the hook of goal post while playing football. Further evaluation revealed pneumomediastinum with suspected esophageal injury. Although, there was injury in the midline, it's injured the esophagus instead of the trachea, to everyone's utter surprise. Primary repair of esophagus was performed due to early presentation and minimal contamination. UGI contrast study was done on the 6th postoperative day, which showed no leakage. Liquid diet was started the same day. Patient was discharged on day 8. The patient was followed up for 3 months and was doing well. Sports related esophageal injuries are extremely rare and to the best of our knowledge, there have been no reports in literature.***

Keywords: Sport, Esophageal Injury

1. Introduction

This case is particularly important because esophageal injuries are rare among sports related injuries. Also it being a midline injury, it was unlikely to have involved the esophagus, as the trachea was still intact. In this particular case, a high index of suspicion led to an early diagnosis and thus, primary repair was possible. It is essential to keep in mind the possibility of esophageal injury, when dealing with sharp sports injuries involving important anatomical areas like neck. Such injuries often go neglected, but in case of involvement of esophagus this delay or neglect may be fatal as esophageal perforations are involved with a high morbidity and mortality rate and early diagnosis and intervention is key for good outcome.[1,2] Although esophageal injuries related to sports are extremely rare, we need to take enough preventive measures to ensure the safety of sports persons.

2. Case

A 13-year-old male child was presented to the emergency department 3 hours after sharp injury by the hook of goal post in supra-sternal region while playing football. The primary survey was suggestive of an expanding hematoma over the neck but airway was patent. The secondary survey showed a deep lacerated bleeding wound of size 5*3*3 cm in supra-sternal region (Figure 1). There was saliva coming out from the wounds, which lead to suspicion of esophageal injury. He also had subcutaneous emphysema in neck. Chest X-ray was significant for pneumomediastinum (Figure 2). CECT neck and chest along with esophagogram was suggestive of esophageal injury in neck at C6-C7 level along with subcutaneous emphysema of neck (Figure 3) and pneumomediastinum (Figure 4). Trachea and Bilateral lungs were normal. There was no hemo-pneumothorax on the CECT (Figure 4). NCCT of head and cervical spine was normal. Neck exploration was done, J shaped incision was given by extending the penetrating wound in neck upwards. Operative finding shows 4 cm linear rent on the anterior wall of esophagus (Figure 5). No airway injury was seen. In view of minimal contamination and early presentation, esophagus was repaired with interrupted sutures over the Naso-Gastric tube and Drain was placed. Patient was maintained on Ryle's tube feeding and had an uneventful recovery. UGI contrast study showed no leakage on the 6th postoperative day. Liquid diet was allowed. Wound site was healthy. Patient was discharged on day 8 after removing the NG tube. Patient was followed up for 3 months and was doing well.

3. Discussion

Sports related injuries occur often but they don't form a large proportion of the patients admitted at most trauma centers including ours. Most of such injuries are orthopedic injuries and those involving the surgeons are rare. The incidence of esophageal injuries is less than 1% among patients admitted with trauma and only 0.5-7% of penetrating neck injuries are associated with esophageal involvement[3] and sports related esophageal injuries are all the more rare. After an extensive search of literature through PubMed, Google scholar, Medline, Ovid and Science direct, not a single case of sports related esophageal injury was found. In this particular case, the diagnosis was suspected due to the presence of saliva in the wound. However esophageal perforations are not always so explicit in their presentation. High index of suspicion of esophageal injuries is a must in all penetrating injuries of the neck and they are associated with a high mortality rate of up to 19%. [4]At our center, we maintain a high index of suspicion of esophageal injuries in all neck injuries. In case of blunt injury to the neck, esophageal injury is suspected if chest X-ray findings are suggestive. All penetrating injuries are explored in OT after beginning prophylactic antibiotics. If the patient is hemodynamically stable, the primary survey is followed by chest X-ray. It may demonstrate mediastinal widening or pneumomediastinum. A significant chest X-ray is followed by CECT neck and chest with iv and oral contrast. If esophageal injury confirmed, the patient is taken up for surgical exploration. Depending upon the time of presentation and contamination, a decision is taken up regarding primary closure. If the patient presents within 6 hours of injury, primary closure is strongly considered.[5] If primary closure is carried out, it is done over a Ryle's tube, which is placed under direct vision. If the presentation is delayed or if there is contamination, cervical esophagostomy and stapling of distal end with feeding jejunostomy is done. In the post operative period, patient must be monitored closely. Armstrong et al described leak rates of 20% if traumatic esophageal perforations were repaired within 12

hours of injury but 100% if it were repaired after 24 hours. [6]

4. Conclusion

We should take enough safety measures to avert injuries in the playground. Diagnosis, management, and outcome are critically affected by etiology, location, and duration between event and intervention.

-Esophageal injury should be suspected in any case of penetrating neck injury irrespective of the location.

- Most injuries require simple repair if they present early.
- Outcome is critically affected by a delay in diagnosis.
- Consider early surgical repair when indicated because delayed repair (>24 hours) may alter the surgical approach and increases the mortality rate.

Figure 1: Lacerated wound (red arrow)

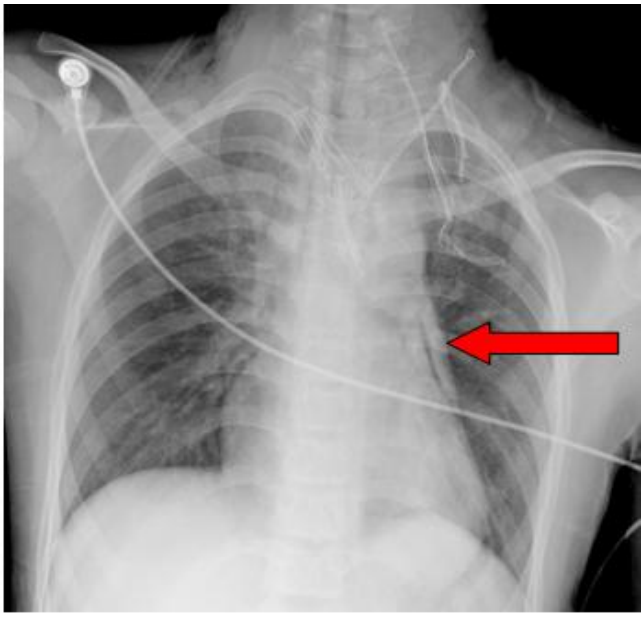

Figure 2: Chest X- ray showing pneumomediastinum (red arrow)

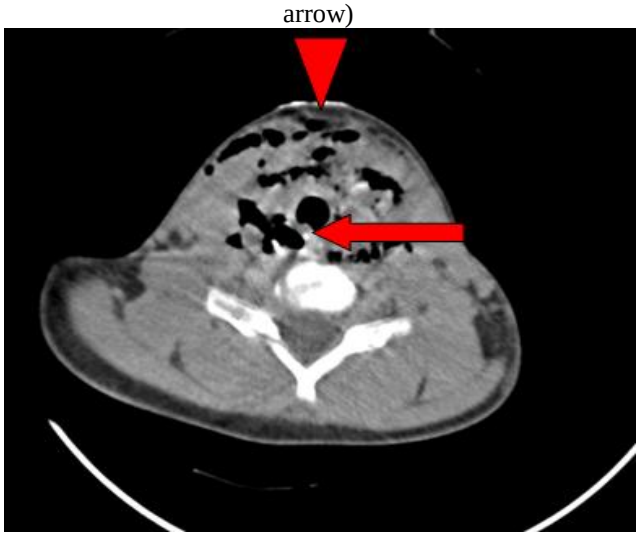

Figure 3: CECT neck showing esophageal rent (Red arrow) and subcutaneous emphysema (red arrow head)

Figure 4: CECT chest showing pneumomediastinum (red arrow). Note that there is no hemothorax.

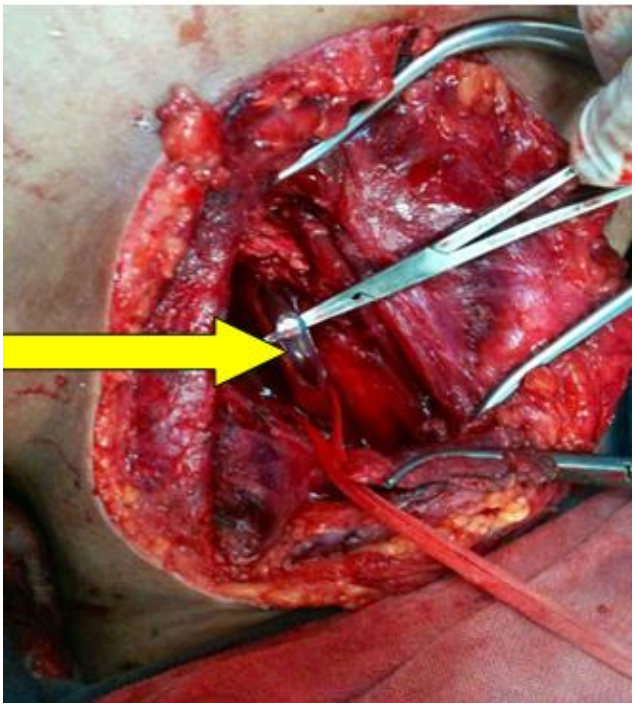

Figure 5: Intraoperative photograph showing esophageal rent (yellow arrow)

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