

# Pneumothorax in a High School Football Player

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## BACKGROUND

- Pneumothorax is the presence of air between the visceral and the parietal pleura of the pleural cavity<sup>1</sup>
- A traumatic pneumothorax is caused by a penetrating wound to the chest, such as a fractured rib that violates the visceral pleura<sup>1</sup>
- Research concerning pneumothorax in football is non-existent
- Literature about pneumothorax in athletics in general is also non-existent

## PATIENT CHARACTERISTICS AND HISTORY

- Male
- 18 year old
- African – American
- High school football running back/linebacker
- History of heat-related muscle cramping

## CLINICAL PRESENTATION

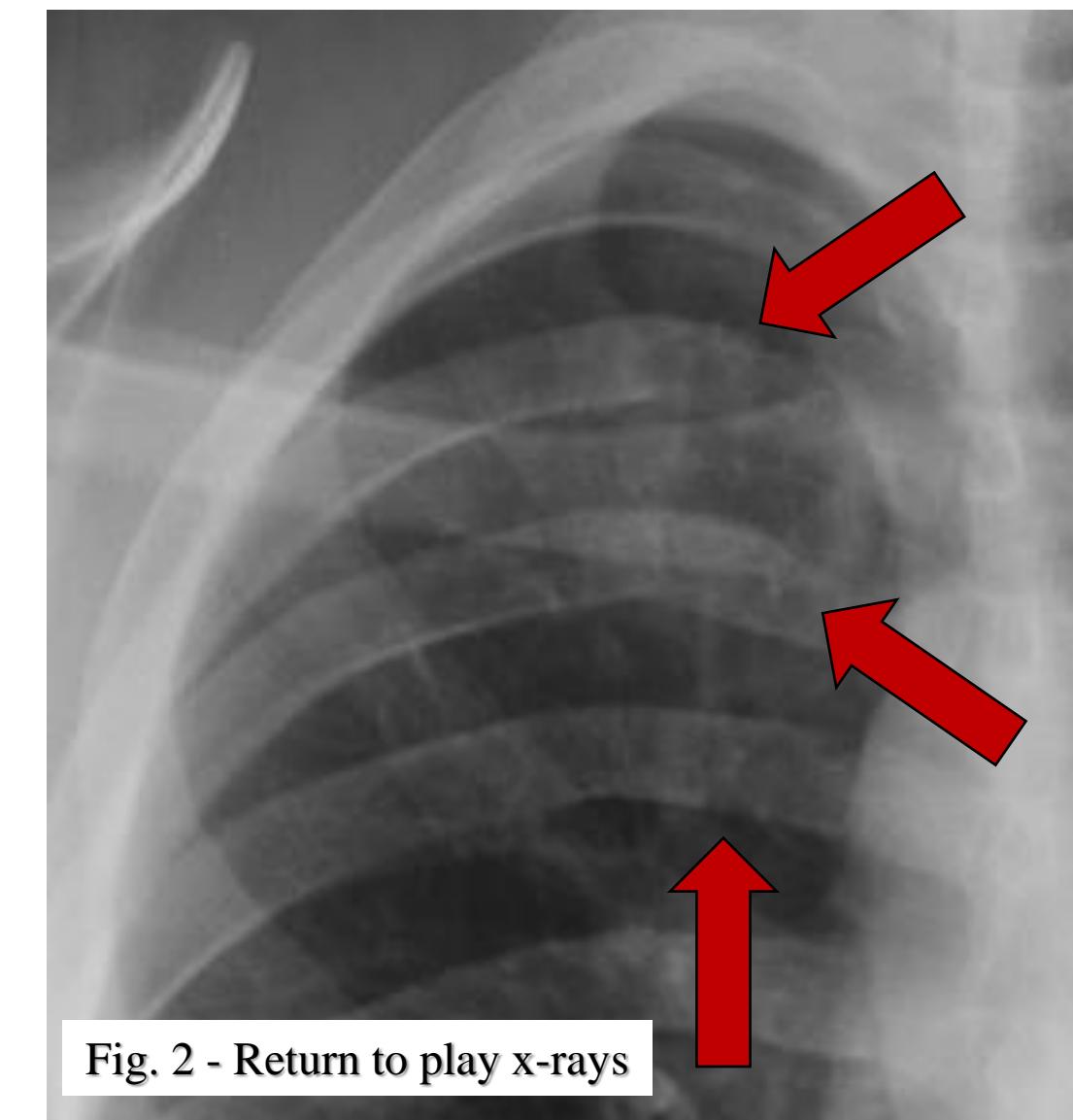
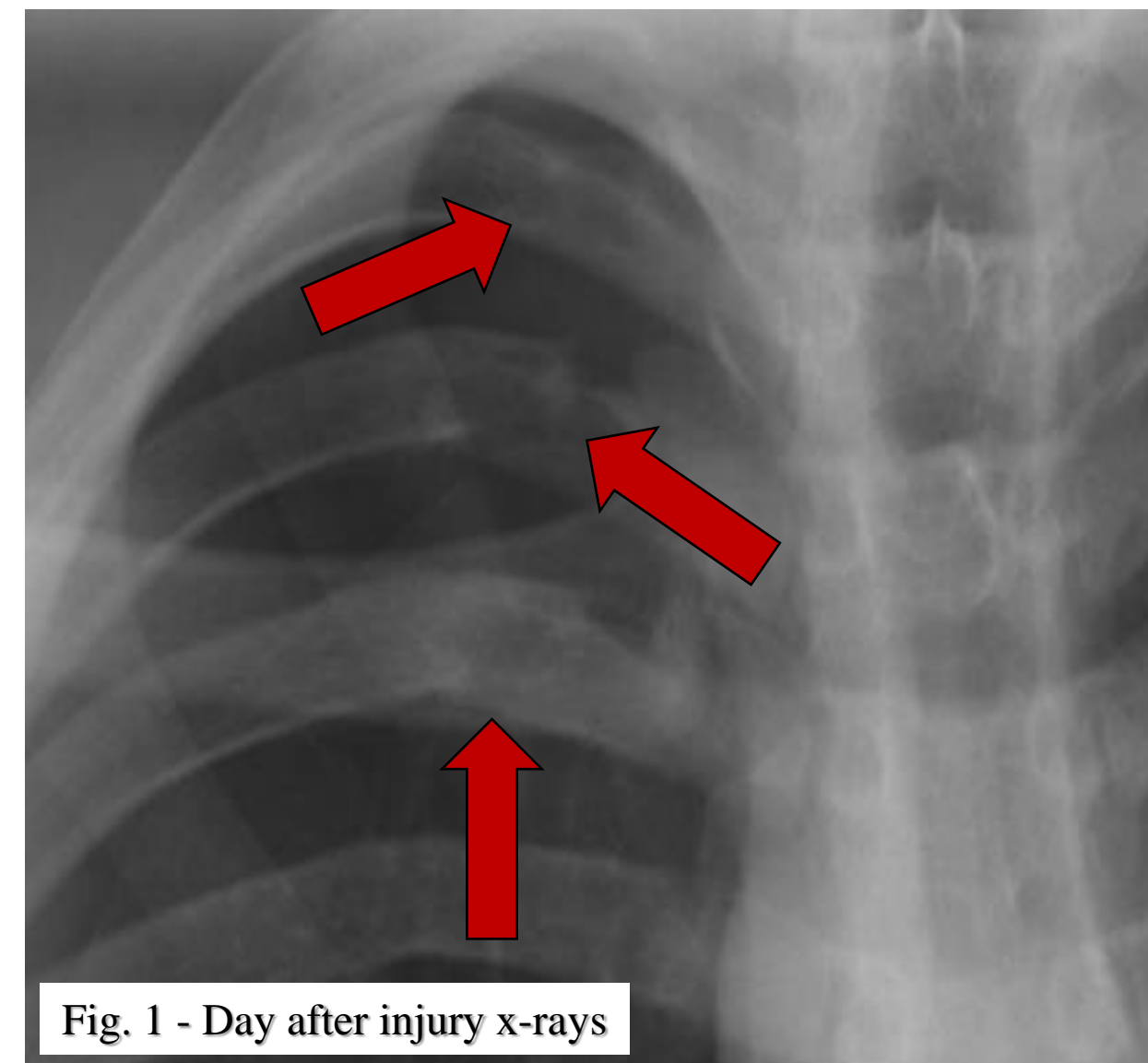
- Athlete tackled while running the ball and fell onto his back
- Speared on the left anterolateral aspect of his thorax
- Signs & symptoms: SOB, point tenderness on ribs 5-10, no visible defects
- Normal inspiration/expiration observed during breathing cycle
- Auscultation was not performed initially

## DIFFERENTIAL DIAGNOSIS

- Heat-related illness
- Rib Contusion
- Lung Contusion

## DIAGNOSTIC TESTING

- X-ray and CT scan findings
  - Trace pneumothorax
  - Non-displaced incomplete fractures to the lateral L 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> ribs (Figures 1 & 2)
  - Non-displaced incomplete fractures to the posterior L 5<sup>th</sup>, and 6<sup>th</sup> ribs (Figures 1 & 2)



## TREATMENT

- 10 days post-injury unresolved pneumothorax
- Patient admitted to the hospital for a thoracostomy
- Released 2 days later with instructions to rest and to wear a sling on the effected side
- 24 days post-injury , patient was cleared to resume activity
- 4 days later released for full, unrestricted play
- Played in a game 28 days post-injury
- Protection offered by an inner, soft, padded shirt and an outer, hard, shelled rib protector

## UNIQUENESS OF CASE

- Part of athlete's signs and symptoms were attributed to:
  - 2 hours of playing both offense and defense
  - High heat and humidity
  - Dehydration due to playing both ways with little chance to adequately rehydrate
  - Treated earlier in scrimmage for muscle cramps
- The athlete's pain level did not match with the seriousness of the injury



## EVIDENCE-BASED CLINICAL RECOMMENDATIONS

- Check for lung sounds, even when you believe the injury may be benign
- Use extra padding (hard, soft, or both) when recovering

## REFERENCES

1. Cvangros RD, Lazor J. Pneumothorax – a medical emergency. *J Athl Train.* 1996; 31: 167-168