The Incidence of Lateral Process Fracture of the Talus

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BACKGROUND

Lateral process fractures were first described in 1982 when Shoulder discovered one such case during cadaver dissection. The first attempt at presenting a collection of clinical cases was in 1984 by Marrocco. In the initial 25 years, only 34 cases were reported in the literature. These fractures were thought to be a rare occurrence. Although downplayed in some due to the infrequency of occurrence, the propensity for disability has never been underestimated. Hawkins presented 13 cases, of which 6 were missed originally. Three of these were inadequately treated and developed significant disability. It has been speculated that these injuries are often missed because the clinical picture can closely mimic that of an ankle sprain. The obvious difficulty in this is that poor outcomes of these injuries often result when these fractures are overlooked or mistreated.

In recent years some attention has been focused on lateral process fractures with the contraction that an increased incidence can be attributed to the rising popularity of snowboarding. Yet many authors still claim these fractures to be a rare injury. Whether considered common or uncommon, lateral process fractures are frequently missed. It has been speculated that these injuries are often missed because the clinical picture can closely mimic that of an ankle sprain. The obvious difficulty in this is that poor outcomes often result when these fractures are overlooked or mistreated.

Still there is considerable controversy regarding the frequency of these injuries. To date, no large investigation into the precise frequency of these injuries has been reported. Given the propensity for disability and poor functional outcomes with these injuries, an investigation to determine the true incidence of these fractures is warranted. The present investigation seeks to determine the rate of occurrence of lateral process fractures of the talus presenting to a major medical center.

MATERIALS AND METHODS

A retrospective review was conducted of all ankle x-ray and advanced imaging series obtained during the time interval between January 1, 2001 to June 30, 2004 at a Level I trauma center.

A brief search of these patient records was performed to determine whether or not the films were obtained as a matter of diagnostic workup for ankle injury. Only those of a subset who presented with ankle trauma were included.

Plain films of the patients meeting inclusion criteria were reviewed to determine if there was radiographic evidence of fracture of the lateral process of the talus, or any other fracture. During the initial 25 years, only 34 cases were reported in the literature. These fractures were thought to be a rare occurrence. Although downplayed in some due to the infrequency of occurrence, the propensity for disability has never been underestimated. Hawkins presented 13 cases, of which 6 were missed originally. Three of these were inadequately treated and developed significant disability. It has been speculated that these injuries are often missed because the clinical picture can closely mimic that of an ankle sprain. The obvious difficulty in this is that poor outcomes often result when these fractures are overlooked or mistreated.

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RESULTS

1,488 patients were imaged for suspected traumatic ankle injury during the 3-year study interval.

137 lateral talar process fractures were identified.

The incidence of lateral process fracture was 9.3% (n=137) of patients imaged for ankle trauma.

There were 81 (59.1%) Type I, 32 (23.4%) Type II, and 24 (17.5%) Type III lateral process fractures.

59.1% (n=81) of lateral process fractures were associated with other fractures (p=0.13).

There was a significant association between posterior process and lateral process fractures (p=0.004).

Types of lateral process fractures:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Type I</td>
<td>81</td>
<td>59.1%</td>
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<tr>
<td>Type II</td>
<td>32</td>
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<tr>
<td>Type III</td>
<td>24</td>
<td>17.5%</td>
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CONCLUSIONS

This is the largest reported series to date in both number of subjects and time-interval studied.

This investigation found an incidence of 9.3% as compared to the frequent cited incidence of 0.86%.

This study shows that lateral process fractures are 18 times more common than previously thought.

Given the propensity for disability and poor functional outcomes with these injuries, a high index of suspicion should be maintained when examining patients with traumatic ankle injury, particularly those with lateral ankle tenderness and fractures of the posterior process of the talus.

Table 1. Radiographic findings most commonly associated with lateral process fracture

<table>
<thead>
<tr>
<th>Fracture Type</th>
<th>Associated Findings</th>
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<tbody>
<tr>
<td>Lateral Process Fracture</td>
<td>Calcaneal fracture, Posterior Process Fracture</td>
</tr>
<tr>
<td>Lateral Process Fracture</td>
<td>Calcaneal fracture, Swelling</td>
</tr>
<tr>
<td>Lateral Process Fracture</td>
<td>Swelling, Calcaneal fracture</td>
</tr>
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REFERENCES