Lpsilateral Fracture of the Femoral Neck, Trochanter And Shaft: A Unique Case

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Lpsilateral Fracture Of The Femoral Neck, Trochanter And Shaft: A Unique Case

Author(s): Muzaffar N, Bashir N, Ahmad A, Ahmad N, Hafeez A

Abstract

Fractures of the femoral neck with ipsilateral femoral shaft fractures are relatively common. Ipsilateral fractures of the femoral neck and trochanter are rarely reported with just over a dozen cases reported so far. However, there is no report in literature which encompasses the ipsilateral fractures of the neck, trochanter and shaft in a patient. We report such a case for the rarity of the plethora of fractures in a single bone.

Introduction

Fractures of the femoral neck with ipsilateral shaft or trochanter are usually the result of low energy falls in the elderly and high velocity trauma in the young adults. The two injuries are concomitantly rare and till date only about a dozen cases of ipsilateral fractures of the femoral neck and trochanter have been documented in literature. However, there is no reported case of ipsilateral fracture of the femoral neck, trochanter and shaft. We report such a case for the rarity of the pathology.

Case Report(s)

A middle aged woman was hit by a speeding truck while she was crossing the street. The impact of the trauma flung her across the road and she landed sideways on her hip and then hit a brick wall by the roadside. The woman was knocked out by the sheer magnitude of the trauma and was transported to the local hospital by some bystanders after which she was referred to our institution after about an interval of an hour. On arrival, the patient had regained consciousness but was in hemodynamic shock. She was revived with intravenous colloids and whole blood transfusion and a preliminary examination revealed swelling, ecchymoses and deformity in the right leg with swelling of the thigh and crepitus, pain in the hip, thigh and lower abdomen. She was taken for radiographs which revealed fractures in the right femoral neck, trochanter and shaft extending to the supracondylar area (Fig 1-4). Due to her precariously worsening hemodynamic situation, a surgical and ultrasonological consultation was sought, which revealed a retroperitoneal hematoma which was rapidly enlarging. She was taken for a laparotomy which was confirmatory of the provisional diagnosis and also revealed tears in the ileum. The patient’s condition worsened and she died soon after coming out of the operating room due to decompensated hemodynamic shock.

Discussion

The commonest association of femoral neck fractures is with the femoral shaft. A combination of femoral neck and trochanteric fractures is less common. There is no documentation of any case carrying the plethora of all these fractures in a single femur. This is the first reported case of this kind. We believe that the initial trauma caused the trochanteric fracture and this fragment wedged into the neck causing it to break. The subsequent hit with the wall caused the shaft fracture and also the intraabdominal bleeding, both of which contributed to the irreversible hemodynamic shock from which she could not recover. Our initial plan when we saw her radiographs was fixation of the hip fractures with a combination of dynamic hip screw and a derotation screw, a similar effort already having yielded good results at our institution and a distal femur locking plate for the shaft fracture. However, fate meant otherwise. The only record of any fracture resembling our case was given by Henry Banks who while studying factors influencing the results in fractures of the femoral neck in 301 patients reported one case of femoral neck fracture associated with ipsilateral intertrochanteric and sub trochanteric fracture of the same hip. He, however, did not report on the follow up of this case. We believe that this case is the first of its kind and we could have saved the patient if she had reached us within the “golden hour”.

References and Legends

Webmedcentral > Case Report

Fig 1: AP radiograph of the right hip with femur showing the trochanteric fracture and outline of the neck fracture.
Fig 2: Close up of the AP radiograph clearly showing the two fractures.
Fig 3: AP radiograph of the ipsilateral femur showing femoral shaft fracture extending to the supracondylar region.
Fig 4: Lateral radiograph of the ipsilateral femur showing femoral shaft fracture extending to the supracondylar region.
Illustrations

Illustration 1

Fig 1: AP radiograph of the right hip with femur showing the trochanteric fracture and outline of the neck fracture.

Illustration 2

Fig 2: Close up of the AP radiograph clearly showing the two fractures.
Illustration 3

Fig 3: AP radiograph of the ipsilateral femur showing femoral shaft fracture extending to the supracondylar region.

Illustration 4

Fig 4: Lateral radiograph of the ipsilateral femur showing femoral shaft fracture extending to the supracondylar region.
# Reviews

## Review 1

**Review Title:** Review of Ipsilateral Fracture of the Femoral Neck, Trochanter And Shaft: A Unique Case.

Posted by Stephen Manning on 16 May 2011 03:22:00 PM GMT

<table>
<thead>
<tr>
<th>1</th>
<th>Is the subject of the article within the scope of the subject category?</th>
<th>Yes</th>
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<tbody>
<tr>
<td>2</td>
<td>Are the interpretations / conclusions sound and justified by the data?</td>
<td>Partly</td>
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<tr>
<td>3</td>
<td>Is this a new and original contribution?</td>
<td>Yes</td>
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<td>4</td>
<td>Does this paper exemplify an awareness of other research on the topic?</td>
<td>Yes</td>
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<td>5</td>
<td>Are structure and length satisfactory?</td>
<td>Yes</td>
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<td>6</td>
<td>Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?</td>
<td>Yes</td>
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<td>7</td>
<td>Can you suggest any reductions in the paper, or deletions of parts?</td>
<td>No</td>
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<td>8</td>
<td>Is the quality of the diction satisfactory?</td>
<td>Yes</td>
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<tr>
<td>9</td>
<td>Are the illustrations and tables necessary and acceptable?</td>
<td>Yes</td>
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<tr>
<td>10</td>
<td>Are the references adequate and are they all necessary?</td>
<td>Yes</td>
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<td>11</td>
<td>Are the keywords and abstract or summary informative?</td>
<td>Yes</td>
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</table>

**Rating:** 5

**Comment:**

This patient clearly sustained major trauma and the management should proceed along an ATLS protocol. Mention is made of fluid resuscitation, however management priorities could be clearer. The abdomen is a source of major bleeding in this patient and it is not the time to be considering plates and screws to the femur until the patient is stabilised and in a better physiological condition. An opportunity to discuss damage control orthopaedics and external fixation has been missed.

The mechanism of injury described begins with a high velocity impact from a vehicle. Looking at the radiographs, I doubt very much that this resulted in the trochanteric fracture which appears to be a 2 part fracture with little displacement seen in the films available. The supracondylar fracture however is a multipart displaced fracture, likely to be more consistent with a high energy impact. We should also consider the size of the "truck" is not mentioned. It is possible that in an adult, the bumper of said truck will impact with the supracondylar region resulting in this injury. The tertiary impact with the ground is more likely to have resulted in the proximal femur injuries.

The quality of diction is acceptable however, it could be more scientific, for example "The subsequent hit with the wall," would be better phrased as "The subsequent impact against the wall."

This is an interesting case and provokes thought.

**Competing interests:** No

**Invited by the author to make a review on this article?** : No

**Experience and credentials in the specific area of science:**

I have worked in Orthopaedics and Trauma in the UK for several years treating both civilian and military casualties. I have also worked in Accident and Emergency Medicine

**Publications in the same or a related area of science:** No
Review 2

**Review Title:** Ipsilateral Fracture of the Femoral Neck, Trochanter And Shaft: A Unique Case?

Posted by Anwar Hussain on 01 Mar 2011 08:45:20 PM GMT

1. Is the subject of the article within the scope of the subject category?  
   Yes

2. Are the interpretations / conclusions sound and justified by the data?  
   Partly

3. Is this a new and original contribution?  
   Yes

4. Does this paper exemplify an awareness of other research on the topic?  
   Yes

5. Are structure and length satisfactory?  
   Yes

6. Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?  
   Yes

7. Can you suggest any reductions in the paper, or deletions of parts?  
   No

8. Is the quality of the diction satisfactory?  
   Yes

9. Are the illustrations and tables necessary and acceptable?  
   Yes

10. Are the references adequate and are they all necessary?  
    Yes

11. Are the keywords and abstract or summary informative?  
    Yes

**Rating:** 5

**Comment:**

Thanks for giving me an opportunity to review the article titled “Ipsilateral Fracture of the Femoral Neck, Trochanter And Shaft: A Unique Case” by the authors:

Dr. Nasir Muzaffar, Dr. Naveed Bashir, Dr. Aejaz Ahmad, Dr. Nawaz Ahmad, Dr. Arifa Hafeez

**Corresponding Author:** Dr. Nasir Muzaffar

I agree with the authors that such a plethora of fractures in a single bone is rarely reported in literature. In my entire career of 11 years as an orthopaedic surgeon I have never seen a case with the above mentioned combination of fractures in femur; however I have experience of fixing two cases of proximal femoral fractures involving a combination of fracture neck of femur and a fracture trochanter in one case and a fracture subtrochanter in the other case (unreported). However, I would like to differ so as the mechanism of injury and the initial proposed treatment by the authors in this particular case as mentioned in the discussion.

So far as the mechanism of fracture is concerned I presume that the initial impact might have caused the fracture of the supra condylar area of femur as is evident from the figs- 3 and 4 that the fracture is highly commnited. Hit by a speeding truck as the initial impact would generate a high velocity trauma to the bone causing fracture of the supra condylar area of the femur that is commnited. The second impact, a lesser velocity trauma while she was flung to the wall and a bounce would cause the fracture trochanter and the neck of femur fracture as is evident from the figs- 1 and 2, uncommnited fractures.

So far as the initial proposed treatment for such fractures in a poly trauma patient, the wiser decision would be to follow the protocols of “Damage control Orthopedics”. Initially the patient should have been planned for minimal invasive stabilization of her fractures using external fixators for the supra condylar part of femur as well as the
same modality to stabilize the of trochanter and neck, as it is evident from the figs-1 and 2 that the fractures are un displaced. Once the patient’s condition is stabilized haemodynamically and other injuries taken care of, we could definitely use other definitive measures as mentioned by the authors to achieve union and function.


Competing interests: no

Invited by the author to make a review on this article? : No

Experience and credentials in the specific area of science:
i have been working as an orthopedician in a teaching institution for 10 years and have dealt with such fractures twice.

Publications in the same or a related area of science: Yes


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